

How multiple threats to safety affects quality of life for picky eating adults: A new explanatory model

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ABSTRACT

Picky eating describes a pattern of eating characterised by a narrow dietary range with rejection of both novel and familiar foods. Research has suggested that picky eating in adulthood is associated with several negative psychosocial outcomes including impaired quality of life. This research aimed to build and test a model explaining the relationship between picky eating and quality of life. 230 participants were recruited via online support forums for picky eating, and an undergraduate research participation scheme. Participants completed self-report measures of picky eating, sensory sensitivity, disgust, anxiety, fear of negative evaluation and eating related quality of life. Regression analysis indicated that picky eating, disgust sensitivity, anxiety, and fear of negative evaluation were all associated with impaired eating-related quality of life. A theoretical model was then devised which aimed to explain the interactions between these factors, and Path Analysis indicated that this model was a good fit for the data. This *Safety in Picky Eating and Quality of life (SPEQ)* model suggests that threat perception and the drive for safety underlies the relationship between picky eating and impaired quality of life. The SPEQ model provides a preliminary basis for understanding how picky eating impacts quality of life in adulthood.

1. Introduction

Picky eating refers to a pattern of eating characterised by a narrow dietary range, rejection of both familiar and unfamiliar foods, and rigidity around the preparation and presentation of preferred foods (Dovey et al., 2008; Zickgraf et al., 2016). There is limited research examining picky eating in adulthood. However, previous research with children (e.g. Farrow & Coulthard, 2012; Machado et al., 2016; Wolstenholme et al., 2020) appears to suggest that there may be links between picky eating and certain psychosocial factors. For instance, amongst children aged 4–6 years sensory sensitivity has been shown to predict picky eating (Steinsbekk et al., 2017), and Farrow and Coulthard (2012) have shown that this sensitivity mediates the link between anxiety and picky eating amongst children aged 5–10 years. Additionally, emotional and behavioural problems have been linked to picky eating amongst both pre-school and school-aged children (Jacobi et al., 2008; Machado et al., 2016).

Some of the relationships between picky eating and psychosocial factors seen in children also appear relevant to adults with picky eating. Echoing the relationship between picky eating and emotional and

behavioural problems in children, adult picky eaters report higher levels of psychological distress, depression and anxiety than non-picky eaters (Barnhart et al., 2021; He et al., 2020; Kauer et al., 2015). Furthermore, Zickgraf and Elkins (2018) were able to replicate Farrow and Coulthard's (2012) findings that sensory sensitivity mediates the relationship between anxiety and picky eating in both a sample of 8–17 year olds, and a sample of 18–22 year olds. It has been suggested that processing information at lower thresholds of sensory stimulation may predispose an individual to be more aware of potential threats in the environment and thus more anxious (Liss et al., 2005). Sensory sensitivity is also related to disgust, particularly with regards to food rejection (Rozin & Fallon, 1987). Recent research has shown that disgust sensitivity (how strongly an individual feels disgust) appears to be associated with both textural aversions and picky eating in adults (Egolf et al., 2018; Kauer et al., 2015). It is theorised that disgust may play a role in the onset and/or the maintenance of picky eating through its association with sensory sensitivity: an unpleasant sensory experience elicits feelings of disgust, which then drives avoidance of that food (Harris et al., 2019; Menzel et al., 2019).

There may be other emotional factors associated with picky eating

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that are specific to adults. Social anxiety appears to be more common amongst adult picky eaters when compared to their non-picky peers (Dial et al., 2021) and compared to adults with other eating disorders (Wildes et al., 2012). This social anxiety may be due to fear of negative evaluation (FNE) in relation to their eating behaviours; FNE is considered to be a core component of social anxiety (Rapee & Heimberg, 1997). Whilst to date there is no research exploring the relationship between FNE specifically and picky eating, Ellis et al. (2017) found a relationship between picky eating and social eating anxiety amongst adults. Additionally, case studies of adults seeking treatment for food neophobia have highlighted the social impairments that can arise from feeling unable to eat around others (Marcontell et al., 2003), and adult picky eaters have reported that they avoid social situations that centre around food in previous qualitative research (Fox, 2020).

Picky eating has been associated with reduced general quality of life in adults (Dial et al., 2021), as well as with reduced food-related life satisfaction and impaired eating-related quality of life (He et al., 2019, 2020; Zickgraf et al., 2016). Whilst quality of life refers to an individual's overall satisfaction with their life, eating related quality of life refers specifically to how life satisfaction is impacted by food and eating. Previous qualitative findings have indicated that this was a particularly relevant concern for adult picky eaters, as participants described several negative ways that their eating specifically affected their quality of life, such as through impacting their relationships with others or their confidence to attend social events involving food (Fox, 2020). However, whilst previous research has shown associations between picky eating and impaired eating-related quality of life, it has not explored how these factors may be related or the role of potential variables. Therefore, the purpose of the current research is to explore the relationship between adults' picky eating and impaired eating-related quality of life in more depth.

The current understanding of picky eating in adulthood has been informed by research into picky eating in childhood, as research examining adult picky eating is limited. Whilst some of the findings from child research do apply to adults, such as the relationship between picky eating, sensory sensitivity and anxiety (Zickgraf & Elkins, 2018), small scale qualitative research suggests that adults face different social consequences as a result of their picky eating, such as greater stigmatisation and judgement from others (Fox, 2020; Thompson et al., 2015). These social consequences may go some way towards explaining why picky eaters report lower eating-related quality of life, but further research is needed to examine whether the themes apparent in qualitative research are relevant across a wider sample. The study presented here builds and tests a preliminary theoretical model which illustrates and explains the relationship between picky eating and impaired eating-related quality of life. Several factors are considered in this study as previous research suggests they may play a role in the relationship between picky eating and eating-related quality of life. These include sensory sensitivity to smell/taste and texture, disgust sensitivity and propensity, anxiety, and fear of negative evaluation (Ellis et al., 2017; Harris et al., 2019; Wildes et al., 2012; Zucker et al., 2017). Initially, a multiple regression will be used to determine which of these factors will be included in the final model. A model will then be built proposing how the factors interact and tested using path analysis. Finally, a theoretical explanatory model will be presented explaining the proposed mechanisms behind the relationships shown in the statistical model.

2. Method

2.1. Participants

Participants were recruited between December 2017 and February 2018, via two online support groups for adult picky eaters and an undergraduate research participation scheme at De Montfort University, Leicester. Inclusion criteria were that participants should be over 16 and not have a diagnosis of any other eating disorder other than ARFID. A

clinical diagnosis of ARFID was neither an inclusion nor exclusion criteria, although participants were asked to indicate whether they had been officially diagnosed with ARFID for demographic purposes (N = 14). The focus of this study was on those who have a significantly restricted dietary range. It is recognised that some picky eating adults with a particularly narrow dietary range may meet the diagnostic criteria for ARFID (Zickgraf et al., 2016). However, as a relatively new addition to the DSM it was considered likely that many of those who met the diagnostic criteria for ARFID would not have received a formal diagnosis as awareness of the condition was low. Therefore, the decision was made not to use clinical diagnosis as an exclusion criteria as it would not accurately distinguish between those with and without ARFID. Furthermore, excluding participants with ARFID was not considered necessary given the focus on limited dietary range and use of correlational analyses. It has been suggested that picky eating is a sub-clinical manifestation of ARFID (Kauer et al., 2015) with research finding considerable overlap between those with ARFID and those who are picky eaters (Dovey et al., 2019). This suggests that both picky eaters and those with ARFID are likely to share similar experiences that differ in severity, making a mixed sample appropriate for the current study. Participants were asked not to take part if they had a diagnosis of any eating disorder other than ARFID. All participants were screened for certain eating disorders which may have confounded the data; namely anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED). No participants scored in a way to indicate the presence of these disorders and so no participants were removed from the sample on this basis. Of the 323 participants who began the study, 1 was excluded from the analysis as they had listed their age as 15, and a further 91 were excluded due to missing data. In total 230 participants completed the study. Please see Table 1 for demographic details. A G*Power a-priori power calculation (power = 0.95, α = 0.05 and a medium effect size f^2 = 0.15) estimated that the sample size should be a minimum of 160 participants, (Faul et al., 2007). In addition, Kline has stated that there should be a minimum of 10 participants for every parameter in a path analysis, and we had a maximum of 8 potential parameters, suggesting the sample was sufficient for analysis (Kline, 1998).

2.2. Measures

2.2.1. Adult Picky Eating Questionnaire (APEQ; Ellis et al., 2017)

The Adult Picky Eating Questionnaire (APEQ) devised by Ellis et al. (2017) was used to measure participant-reported picky eating attitudes and behaviours. This is the first scale designed to measure picky eating in adults and appears to show good reliability and convergent validity (Ellis et al., 2017). It is composed of 16 items scored on a five-point Likert scale. The scale can be divided into four subscales (meal

Table 1
Demographic characteristics of the participants (N = 230).

Variable	Total N	N Undergraduate sample	N Online support group sample
Overall sample	230	129	101
Gender			
Female	210 (91.3%)	119	91
Male	20 (8.7%)	10	10
Age range (years)	16–66	16–54	18–66
Mean age in years (SD) ^a	26.73 (SD = 10.45)	21.85 (SD = 6.87)	32.95 (SD = 10.95)
Ethnicity ^a			
White European	163 (70.9%)	67	96
Black African/Caribbean	21 (9.1%)	19	2
Other	18 (7.8%)	17	1
Asian	18 (7.8%)	18	0
Mixed/Multiple ethnic groups	9 (3.9%)	8	1

^a Indicates a significant difference between the two samples at $p < .001$.

presentation, food variety, meal disengagement, and taste aversion) however in the present study only the total composite score was used. A sample question from this scale includes “I eat from a very narrow range of foods (fewer than 10 different foods).” The potential scores for this questionnaire range from 16 to 80, with no items reverse scored. A higher score indicates more severe picky eating.

2.2.2. Adolescent/adult sensory profile (Brown & Dunn, 2002); taste/smell processing and texture processing subscales

These subscales were used to assess sensory sensitivity in taste, smell, and tactile domains. Each subscale measures a high threshold and low threshold for sensory processing. For taste/smell processing, five items relate to high threshold and three relate to low threshold, whilst for tactile (texture) processing three items relate to high threshold and five items relate to low threshold. Only the low threshold scores were used in this analysis, as a low threshold indicates sensory hypersensitivity. Example items include “I don’t like strong tasting mints or sweets (hot/menthol or sour sweets)” (taste/smell subscale, low threshold) and “I avoid, or wear gloves during activities that will make my hands messy” (texture subscale, low threshold). Possible scores range from 3 to 15 for low-threshold taste/smell sensitivity and 5–25 for low-threshold tactile sensitivity, with a high score indicating a lower sensory threshold (i.e., higher sensitivity). The scale shows satisfactory psychometric properties (Brown & Dunn, 2002) and has been used and validated with a range of adults, including cross-culturally (e.g. Chung, 2006; Pohl et al., 2003).

2.2.3. Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)

The anxiety subscale from the HADS was used to measure general anxiety. This subscale includes seven items with possible scores ranging from 0 to 21; a higher score indicates higher levels of anxiety. Example questions include “I feel tense or ‘wound up’”. This scale is widely used and has been validated with community-based samples (Gale et al., 2010).

2.2.4. Brief Fear of Negative Evaluation – revised (BFNE-R; Carleton et al., 2006)

The BFNE-R was used to measure fear of negative evaluation. This scale consists of 12 items rated on a five-point Likert scale from “not at all characteristic of me” to “entirely characteristic of me”, with no items reverse scored. Scores range from 12 to 62, with a higher score indicating greater fear of negative evaluation. Example questions include “I am afraid that other people will find fault with me” and “I worry about what kind of impression I make on people”. The authors report that this measure shows excellent internal reliability (Carleton et al., 2006).

2.2.5. Disgust Propensity and Sensitivity Scale-revised (DPSS-R; Olatunji et al., 2007)

The DPSS-R measures participant’s propensity to feel disgust and their sensitivity to that feeling. It is divided into two subscales: disgust propensity and disgust sensitivity. Scores range from 8 to 40 on each subscale, with a higher score indicating greater disgust propensity or sensitivity. Example items from this scale include “I become disgusted more easily than other people” (disgust propensity subscale) and “When I feel disgusted, I worry that I might pass out” (disgust sensitivity subscale). The psychometric properties of this scale were good when initially tested with a non-clinical sample (Olatunji et al., 2007), and the scale has since been validated with a range of different samples, including clinical and cross-cultural (e.g. Georgiadis et al., 2020; Iwasa et al., 2016).

2.2.6. Clinical Impairment analysis (CIA; (Bohn et al., 2008)

The CIA was used to measure the impact of eating behaviours on quality of life. The total score ranges from 0 to 48, with a higher score indicating higher impairment of quality of life. As the initial measure

was developed for use with patients who have concerns around their body weight and shape the initial part of the question was adapted from “Over the past month, to what extent have your eating habits, exercising, or feelings about your eating, shape or weight ...” to “Over the past month, to what extent have your eating habits ...”. An example item from this measure is “Over the past month, to what extent have your eating habits made you feel ashamed of yourself?”. This measure has been shown to have strong internal reliability, test-retest reliability, convergent validity, and discriminant validity amongst community samples (Reas et al., 2016).

2.3. Procedure

This study was granted ethical approval by the Health & Life Sciences Faculty Research Ethics Committee, De Montfort University. Data were collected online using Qualtrics online survey software, Version November 2017, copyright 2017 (Qualtrics, Provo, UT). After clicking on the link in the study advert to take them to the study, participants were presented with further information about the research, and then a consent form. If they gave their fully informed consent, participants were presented with the questionnaires. Each questionnaire was presented on a separate page, and always in the same order (as presented in the methods section).

2.4. Data analysis

Hypotheses were specified before data collection, and the analytic plan was pre-specified. The data were analysed using SPSS (version 25, 2019) and SPSS AMOS version 25 (Arbuckle, 2017) with Specific Indirect Effects plugin (Gaskin, 2018) used for model building and path analysis. A hierarchical regression controlling for age was used to identify which of the measured psychosocial and psychophysiological factors explained variance in impaired eating-related quality of life. Pre-analysis checks indicated that none of the variables strongly deviated from normality. There was no evidence of heteroscedasticity, singularity (all tolerances greater than 0.1), or multicollinearity (all r ’s less than 0.9). Prior research has suggested that age may play a role in the relationship between picky eating and quality of life; analysis in the current sample revealed a significant positive relationship between age and picky eating ($r(230) = 0.324$, 95% CI [0.204, 0.435], $p < .001$) and therefore the model was adjusted for age. No other demographic variables showed a relationship with picky eating. Non-significant factors were removed one by one from the model until only significant factors remained, which were then included in the model development.

The factors that remained following the regression were considered in conjunction with previous research to create a model which aims to explain how these variables may interact to impact quality of life. Finally, the proposed model was tested using path analysis.

3. Results

3.1. Descriptive statistics

Descriptive statistics for all study variables are presented in Table 2.

3.2. Regression model of impaired eating-related quality of life

A hierarchical multiple regression was conducted to determine which of the proposed psychosocial and psychophysiological factors explained variance in impaired eating related quality of life. The factors included in this analysis were picky eating, tactile sensitivity, taste/smell sensitivity, disgust propensity, disgust sensitivity, anxiety, and fear of negative evaluation.

A significant regression model was found ($F(7, 221) = 20.98$, $p < .001$), with an adjusted R^2 of 0.411 indicating that these factors

Table 2

Possible and observed score ranges and mean and median scores on all variables measured.

Factor measured	Possible score range	Mean (SD)	Median (IQR)
Picky eating	16–80	46.05 (14.02)	45.5 (22.50)
Taste/smell sensitivity	3–15	9.65 (2.93)	10 (4)
Tactile sensitivity	5–25	13.71 (3.79)	14 (5)
Disgust propensity	8–40	25.43 (6.30)	25 (9)
Disgust sensitivity	8–40	21.67 (6.68)	22 (9)
Anxiety	0–21	10.17 (4.37)	10 (7)
Fear of negative evaluation	12–62	40.09 (14.09)	41 (24)
Eating related quality of life	0–48	14.56 (12.08)	11 (19.5)

explained 41% of the variance in eating-related quality of life. Anxiety made the largest contribution, followed by disgust sensitivity, picky eating, and fear of negative evaluation. Full results are presented in Table 3. Non-significant factors were removed one by one from the regression if their removal had no notable impact on other variables. This resulted in the removal of tactile sensitivity, then taste/smell sensitivity, and finally disgust propensity. This had a negligible impact on the final model, which explained a significant 41.5% of variance in eating related quality of life (adjusted $R^2 = 0.415$, $F(4, 224) = 33.44$, $p < .001$).

3.3. Theoretical statistical model showing how picky eating impacts quality of life

A model which aimed to explain how the significant factors in the final regression model may interact to predict impaired eating related quality of life was devised. The organisation of these factors within the model is based on findings from previous research in the area. Disgust has been shown to influence both food rejections (Martins & Pliner, 2005) and food aversions (Batsell & Brown, 1998), and is theorised to play a role in the aetiology of picky eating (Menzel et al., 2019). The present model situates disgust sensitivity as a predictor of picky eating, which is supported by recent work by Harris et al. (2019) who found that disgust predicted both picky eating and ARFID in adults. Previous research has shown associations between disgust sensitivity and trait anxiety (Muris et al., 1999). In a previous qualitative study, picky eating adults described anxiety and fear of judgement as a consequence of their eating behaviours (Fox, 2020), and it appeared to be these factors which impacted their quality of life; therefore, the model was developed to reflect this, as can be seen in Fig. 1.

This model demonstrated a good fit with the data $\chi^2 = 1.14$ ($df = 1$, $p = .286$), RMSEA = 0.025, and CFI = 0.999. Table 4 shows the standardised β , confidence intervals and significance for each direct and indirect relationship shown in the model.

Table 3

Explanatory Hierarchical Regression model of Eating Related Quality of Life.

Predictor variable	Step 1		Step 2 ^a		Final Model	
	Unstandardised Beta (95% CI)	<i>p</i>	Unstandardised Beta (95% CI)	<i>p</i>	Unstandardised Beta (95% CI)	<i>p</i>
Age	.014 (–.137, .165)	.854	–.14 (–.26, –.01)	.033	–.13 (–.26, –.01)	.042
Picky eating			.35 (.23, .48)	<.001	.37 (.27, .48)	<.001
Disgust sensitivity			.41 (.10, .72)	.009	.33 (.12, .53)	.002
Anxiety			.41 (.09, .73)	.013	.41 (.09, .73)	.013
Fear of negative evaluation			.13 (.03, .23)	.010	.13 (.03, .23)	.009
Taste/smell sensitivity			.22 (–.34, .78)	.437		
Tactile sensitivity			.10 (–.29, .48)	.619		
Disgust propensity			–.16 (–.50, .18)	.348		

^a Full model.

4. Discussion

The aim of this study was to develop a preliminary theoretical model explaining the relationship between picky eating and impaired eating related quality of life, using factors identified in previous research as being potentially relevant mediators. The results of the initial multiple regression indicated that picky eating, disgust sensitivity, anxiety and fear of negative evaluation explained approximately 41% of the variance in eating related quality of life. This builds on previous findings associating picky eating with impaired eating related quality of life (e.g. Ellis et al., 2017). Although anxiety was the largest contributing factor in the model, the importance of disgust sensitivity in this model supports Harris et al.'s (2019) argument that interventions for picky eating which only work to reduce anxiety may be less effective than those which also consider the role of disgust.

4.1. Theoretical explanatory model showing how picky eating impacts quality of life: The Safety in picky eating and quality of life (SPEQ) model

This work was not designed to assess causality and the direction of the relationships included. However, when the statistical model described above is considered alongside previous research it can be used to inform the preliminary development of a theoretical explanatory model of how picky eating impacts quality of life. This preliminary model is presented in Fig. 2. In the model, the positioning of each factor, the direction of the relationships, and the proposed explanations of the relationships are based on previous research, and previous qualitative findings (Fox, 2020; Fox et al., 2018) in particular.

The SPEQ model proposes that the emotional factors identified as being associated with both picky eating and impaired eating related quality of life may all be related to threat perception and safety. Disgust, particularly food related disgust, is an emotion that is believed to have evolved to keep us safe by preventing contact with and ingestion of potential contaminants (Rozin & Fallon, 1987). It is thought that anxiety has evolved to keep us safe by preparing us to deal with threats (Bateson et al., 2011). Fear of negative evaluations and stigma may also play a role in keeping us safe; we are social beings who have evolved to function as part of a group. If we are judged negatively by other group members our place in the group may be less secure, and this has implications for our safety (Javarone & Marinazzo, 2017). The desire for a sense of safety amongst picky eaters has been indicated explicitly in previous qualitative work through use of the term “safe food” to refer to foods that were considered acceptable (Fox et al., 2018). It has also been indicated more implicitly through the desire for familiarity and predictability in foods and the validation felt as a result of belonging to a community with other picky eaters and thus not facing judgement and stigma (Fox, 2020; Fox et al., 2018).

The SPEQ model also proposes that perceived threats and the resulting drive for safety have a role to play in both picky eating and in the impact that picky eating has on quality of life. Increased disgust sensitivity is likely to contribute to picky eating, given the role it plays in food rejections (Martins & Pliner, 2005; Rozin & Fallon, 1987). Previous

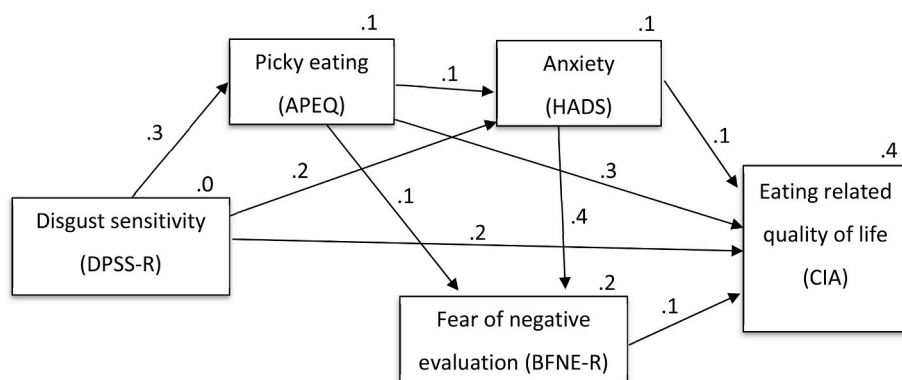


Fig. 1. Path diagram theorising the interactions between predictors of impaired eating related quality of life.

Note. The abbreviations refer to the measures used to assess each factor. These were as follows: the Disgust Propensity and Sensitivity Scale – Revised (DPSS-R), the Adult Picky Eating Questionnaire (APEQ), the Hospital Anxiety and Depression Scale (HADS), the Brief Fear of Negative Evaluation – Revised (BFNE-R), and the Clinical Impairment Analysis (CIA).

Table 4
Standardised weights of paths in the theoretical model devised.

Path	β	(95% CI)	<i>p</i>
Picky eating → eating related quality of life	.39	(.28, .49)	<.001
Picky eating → anxiety	.15	(.01, .29)	.045
Picky eating → fear of negative evaluation	.18	(.06, .33)	.010
Picky eating → anxiety → eating related quality of life	.02	(.00, .05)	.037
Picky eating → fear of negative evaluation → eating related quality of life	.03	(.01, .05)	.007
Disgust sensitivity → eating related quality of life	.20	(.09, .32)	.010
Disgust sensitivity → picky eating	.35	(.22, .48)	.010
Disgust sensitivity → anxiety	.28	(.15, .44)	.010
Disgust sensitivity → picky eating → anxiety	.05	(.01, .07)	.036
Disgust sensitivity → picky eating → fear of negative evaluation	.06	(.06, .24)	.001
Disgust sensitivity → anxiety → fear of negative evaluation	.12	(.13, .38)	.001
Disgust sensitivity → picky eating → eating related quality of life	.14	(.16, .36)	<.001
Disgust sensitivity → anxiety → eating related quality of life	.05	(.03, .15)	.003
Anxiety → eating related quality of life	.16	(.07, .26)	.010
Anxiety → fear of negative evaluation	.42	(.31, .53)	.010
Anxiety → fear of negative evaluation → eating related quality of life	.07	(.08, .31)	.008
Fear of negative evaluation → eating related quality of life	.16	(.04, .27)	.011

work has also shown an association between disgust sensitivity and anxiety (Cisler et al., 2007); it may be that the aversive nature of a disgust response leads to anxiety about experiencing this reaction again in the future. Evidence from this analysis suggests that disgust also has a direct association with impaired eating related quality of life. This may again be due to the aversive nature of disgust responses but may also relate to the potential threat to physical safety that a disgust response represents. The model also proposes that anxiety associated with picky eating is in part a result of fear of the judgement and stigma that picky eaters perceive from others related to their eating behaviours, which represents a threat to their social status.

The model indicates that disgust has a direct relationship with impaired eating related quality of life, but that this relationship is also mediated by picky eating and by anxiety. This suggests that the strong disgust responses reported by picky eaters (e.g. Fox et al., 2018) are

aversive enough to impact eating related quality of life directly, but that the association between disgust sensitivity and anxiety is also important to consider when addressing eating related quality of life in picky eating adults. Both general anxiety and fear of negative evaluation also demonstrated significant associations with impaired eating related quality of life independently to their role as mediators for picky eating. This may explain why some picky eaters do not report any impact on quality of life whilst others do (Fox, 2020); it may be the case that for many people it is the combination of picky eating and anxiety that leads to impaired eating related quality of life, rather than picky eating alone. This underlines the importance of considering anxiety when designing interventions to improve quality of life amongst picky eating adults.

Although sensory sensitivity is associated with picky eating in both children and adults (Farrow & Coulthard, 2012; Nederkoorn et al., 2015, 2019; Steinsbekk et al., 2017), in the present analysis both taste/smell sensitivity and tactile sensitivity did not show a significant relationship with eating related quality of life and so were not included in the model presented. This is in line with previous work by Ellis et al. (2017), which showed that the taste aversion subscale of the APEQ did not predict impaired eating related quality of life. Disgust sensitivity and propensity have both been repeatedly associated with picky eating (Egolf et al., 2018; Harris et al., 2019). Due to the fact that disgust propensity (the likelihood of feeling disgust) and disgust sensitivity (sensitivity to those feelings of disgust) tend to be highly associated with one another (van Overveld et al., 2006), in this study they were measured separately, and it was found that disgust sensitivity had the strongest relationship with eating related quality of life. This suggests that it is not how often disgust is experienced but how strongly it is felt that impacts on quality of life in picky eaters. This may be because being particularly sensitive to disgust increases the likelihood of experiencing a physical disgust response when confronted with foods that are considered unpalatable, which others may observe and react negatively to. This may lead to avoidance of social eating as a way of avoiding such interactions. Taken together, these findings suggest that it is the social elements of picky eating that negatively impact quality of life among adult picky eaters rather than these more psychophysiological aspects.

There are some limitations to the research that should be considered. The sample studied was recruited from two different groups: picky eating adults and undergraduate students. This sample is therefore unlikely to be fully representative of either the picky eating adult population, or the general population. For instance, the use of undergraduate students and a sample of picky eaters gathered online has resulted in a sample with a relatively low mean age. This may be particularly relevant as research suggests that anxiety disorders (and particularly social anxiety) are more common in younger adults than older adults (Wolitzky-Taylor et al., 2010). Qualitative findings have also suggested that anxiety relating to negative evaluations due to picky eating may be more of a concern for younger people, with participants describing more concern around judgement from others in younger adulthood which became less important to them as they aged (Fox, 2020). Therefore, it is

Ethical statement

This study was performed in accordance with the Declaration of Helsinki and was granted ethical approval by the Health & Life Sciences Faculty Research Ethics Committee, De Montfort University (reference number 2035). All participants were informed of their rights and gave full informed consent before taking part.

Declaration of competing interest

None.

Data availability

Data will be made available on request.

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