



School of Psychology

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A systematic review of eating disorder experiences within transgender, non-binary and gender diverse populations, and an empirical study of childhood trauma, emotions, and the eating disorder voice.

Thesis submitted in partial fulfilment of the requirement

for the degree of:

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## **Preface**

The current thesis focuses on eating disorders (ED) and is inclusive of two projects: a systematic review and an empirical project.

### **Paper 1: Systematic Review**

For paper one, qualitative literature exploring the aetiology of EDs and disordered eating difficulties in gender diverse populations, as reported by gender diverse individuals, was reviewed. There is evidence to suggest that gender diverse populations may be at particular risk of experiencing mental health problems, and specifically difficulties with disordered eating, in comparison to cisgender peers. Evidence also indicates that disordered eating within this population may require different conceptualisation and treatment approaches. Qualitative research exploring healthcare and treatment experiences of gender diverse populations report considerable negative experiences of eating disorder treatment, with treatment largely geared toward cisgender individuals. To improve support for gender diverse service users, improved understanding of aetiology, presentation, risk, and protective factors of EDs within gender diverse populations is needed.

Several databases were searched for relevant qualitative literature. In total, 14 papers were identified, reporting experiences of over 300 gender diverse individuals of a variety of binary and non-binary gender identities. Thematic synthesis was utilised to identify 6 overarching themes across papers: interconnectedness of gender dysphoria and eating disorders; gender expression; coping psychologically; surviving in the context of marginalisation; healthcare; and recovery and protective factors. Participants described the impact of gendered societal expectations, marginalisation, and stigma on their relationships with themselves and their bodies. Disordered eating, for many, provided a way of adapting their bodies to better align with their gender identity, and adapting themselves to better conform to societal expectations of gender; aiding passing as their gender identity in public and protecting them from discrimination and harm. Disordered eating also provided a way of coping with psychological distress caused by living in a body which differs from their gender identity, and the sense of a lack of control; over their bodies, lives, and circumstances (in particular, in relation to going through puberty and developing sex characteristics incongruent to their gender identity). Participants also described the positive impacts of gender-affirming care (including hormonal and surgical treatments) on disordered eating symptoms, as well as more negative influences, such as unwanted weight gain from hormone therapy. Barriers to accessing effective support for their EDs were identified. Protective factors associated with healing and recovery were also discussed. The findings of this review highlight the complex, intertwined

nature of the relationship between gender identity and eating disorders and provides insight into the disordered eating experiences of gender diverse populations, as reported by this population. Clinical implications and future research directions are explored.

## **Paper 2: Empirical Project**

The second paper is a quantitative study exploring the Eating Disorder Voice (EDV): an internal voice which focuses on weight, shape and eating and how they relate to self-worth. Specifically, this paper was interested in aetiology of the EDV, and the potential role it may play in explaining the relationship between childhood trauma and eating disorder pathology. Research into the EDV is still limited, but one study identified that the EDV is associated with childhood trauma, specifically emotional abuse; and identified potential mechanisms through which emotional abuse influences the EDV. Recent qualitative research expanded on this, suggesting the EDV develops during times of unsafety in a person's life: offering comfort, safety, and guidance amidst distressing relational circumstances and associated internal and emotional distress. However, this safety is conditional, and the voice can become critical and cruel if rules are not followed. This qualitative research indicates that emotional difficulties may perhaps partially explain the relationship between childhood trauma and the EDV, with the EDV developing to provide support to manage the distress of traumatic experiences, particularly from childhood. Models exploring childhood trauma, emotions and eating disorder pathology more broadly have found similar mediational relationships, but this has yet to be explored in relation to the EDV specifically. The support the EDV provides may be of particular relevance within this model.

This paper explores the potential roles of childhood trauma and emotional difficulties in the aetiology of the EDV. In total, 148 participants with self-reported experience of an EDV (recruited via social media and Cardiff University) completed a survey exploring childhood trauma, emotional difficulties, and appraisals of the EDV, as well as ED pathology. Analyses found that childhood emotional abuse (but no other experiences of childhood abuse) was significantly positively associated with appraisals of voice power. Higher problems with emotion regulation significantly predicted greater perceived power of the EDV. Mediation analysis found that emotion regulation difficulties was a significant mediator in the relationship between childhood emotional abuse and EDV power. Appraisals of EDV power was significantly positively correlated with severity of ED pathology. These findings provide some insight into the aetiology of the EDV, and the potential importance of the EDV and emotional difficulties when working with eating disorders. Limitations of the study, clinical implications and future research directions are discussed.

## **Paper 1: Systematic review**

# **Eating disorders in transgender, non-binary, and gender diverse populations: a meta-synthesis of qualitative findings**

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**Word count: 8000**

This paper was prepared in accordance with the author guidelines for the International Journal of Eating Disorders (See appendix A). For this thesis submission, the DClInPsy word limit of 8000 words has been used.

## **Abstract**

**Background:** There is evidence to suggest that gender diverse populations may be at greater risk of eating disorders and disordered eating difficulties in comparison to the general population.

Underlying causes, risk and protective factors appear to differ for this population in some ways, too.

**Method:** To explore gender diverse individuals' understandings of the relationship between their gender identity and disordered eating symptoms, qualitative papers were screened and analysed using Thematic Synthesis. Relevant search terms were used to screen papers on key databases, and quality of the included papers was appraised using the Critical Appraisal Skills Programme (CASP) checklist. **Findings:** 14 studies were reviewed. Six superordinate themes were identified:

*interconnectedness of gender dysphoria and eating disorders; gender expression* (including use of disordered eating to manage gender and the impact of societal gender ideals); *coping psychologically* (including use of disordered eating to cope with gender dysphoria and as a way of feeling more in control); *surviving in the context of marginalisation* (including the importance of passing and conforming to gender expectations for personal safety, and the psychological impact of marginalisation on mental wellbeing and disordered eating); *healthcare* (including the impact of gender-affirming care on disordered eating, and eating disorder treatment experiences); and *recovery and protective factors* (including recovery and transition, importance of connection, resistant narratives, and the uniquely protective nature of the non-binary identity). **Conclusion:** The findings highlight the complex relationship between gender identity, gender dysphoria, and disordered eating. The findings, limitations of the review and clinical implications are discussed.

**Key words:** *Eating disorders; disordered eating; gender diverse populations; trans individuals; non-binary individuals.*

## 1. Introduction

Data from the UK 2021 census (which surveyed, for the first time, gender identity) indicate that there are over 260,000 individuals whose gender identity (the personal sense of one's gender) differs from their sex assigned at birth in the UK. This figure relates to over 16s only; indeed, there is no official record of the number of gender diverse young people in the UK (Pearce, 2018). In this paper the term 'gender diverse' will be used to encapsulate the broad range of possible gender identities outside of cisgender (where gender identity matches one's assigned sex at birth). Gender diverse is an umbrella term inclusive of transgender, non-binary, and gender expansive identities (see Appendix B for glossary).

Recognition and visibility of gender diverse individuals continues to grow in wider society; this change is evident within health research, too, although still in its infancy (Pearce, 2018; Gordon et al., 2021). One of the areas in which the needs of gender diverse populations is increasingly acknowledged is eating disorders (ED) and disordered eating difficulties. Several studies have identified that gender diverse individuals may be at greater risk of developing disordered eating difficulties in comparison to cisgender populations (e.g. Ålgars et al., 2010; Diemer et al., 2015; Duffy et al., 2019). Rasmussen et al.'s (2023) systematic review and meta-analysis found high rates of ED symptomatology within transgender individuals, with an overall ED prevalence rate of 17.70%, significantly higher than prevalence rates within the general population.

### *Psychological Contributors*

There are multiple potential psychological contributors in relation to gender identity and eating disorders. Body dissatisfaction (negative evaluation of one's body) is one such factor. Body dissatisfaction is a known risk factor for eating disorders (e.g. Phelps et al., 1999) and is a commonly reported (but not universal) difficulty experienced by gender diverse individuals, particularly those who experience gender dysphoria (the distress or discomfort an individual can experience when their gender identity and sex assigned at birth differ) (Maguire et al., 2016). Individuals may be motivated by body dissatisfaction to alter their physical appearance through use of disordered eating and/or exercise; for gender diverse individuals, body dissatisfaction and disordered eating are often associated with motivation to alter the body to better align with gender identity (Jones et al., 2016).

Body dissatisfaction has been found to be exacerbated by gendered cultural appearance ideals, reinforced through the media, peers and family, which can become internalised (McCabe &

Ricciardelli, 2003). Objectification theory (Frederickson & Roberts, 1997), originally developed in relation to cisgender women, proposes that when an individual is objectified, perceived, and evaluated primarily by their appearance and use to others, they may internalise an outsider's perspective and evaluate themselves based on these societal expectations. This internalisation can result in heightened body dissatisfaction and is a risk factor for disordered eating. There is some evidence in support of the relevance of this theory amongst gender diverse populations. Comiskey et al. (2019) identified significant positive associations between disordered eating, internalisation of cultural standards of attractiveness, body surveillance and body shame in transgender women. Velez et al. (2016) found significant positive associations between internalisation of social standards of attractiveness and compulsive exercise in a sample of transgender men. Jones et al.'s (2016) review of quantitative and qualitative literature identified body dissatisfaction (and associated psychological distress) and cultural gender ideals as risk factors for EDs in gender diverse individuals.

Another relevant consideration is the impact of marginalisation and stigma. Minority Stress Theory (MST; Meyer, 1999, 2003) posits that individuals with minority identities face unique stressors, above and beyond general life stressors. Hendricks and Testa (2012) applied MST to gender diverse individuals, outlining experiences such as discrimination, marginalisation, and violence, and the stress faced by gender diverse individuals in anticipating such experiences. Hendricks and Testa (2012) also propose that gender diverse individuals can internalise society's prejudices toward them (i.e. internalised transphobia). These experiences can cause significant psychological distress and can result in individuals developing maladaptive coping strategies to manage. Disordered eating is one such way of managing the emotional impact of these stressors, and of reducing risk of harm by adapting oneself to better conform to expectations of society and aid successful 'passing' (that is, being recognised as one's gender identity in public, as opposed to transgender; Aversa et al., 2019). Brewster et al. (2019) found evidence in support of the impact of minority stress in relation to disordered eating within transgender populations, with a significant direct association between anti-transgender discrimination and disordered eating. Heiden-Rootes et al. (2023) completed a scoping review of the literature on eating and body image in gender diverse adults. Their review identified several constructs which correlated with disordered eating in transgender and non-binary adults, including dehumanisation, objectification, and discrimination. This is of particular importance in the current cultural and political context, given gender diverse individuals experience disproportionately high rates of harassment, violence, and discrimination; within the UK and worldwide (Government Equalities Office, 2022; United Nations Human Rights Council, 2022).

Despite evidence to suggest that aetiology and experience of eating difficulties in gender diverse individuals may differ to that of cisgender populations, treatment remains largely geared toward cisgender women. This can be experienced as unhelpful, alienating and potentially harmful by gender diverse individuals. Duffy et al. (2016) explored eating disorder treatment experiences within US transgender populations; participants reported experience of ignorance and discrimination from practitioners, invalidating treatment approaches, and the relationship between gender dysphoria and eating disorders often ignored (Duffy et al., 2016). Some participants expressed that treatment focused too much on the body, without considering other factors that might be of relevance to this population. Gender diverse individuals have also reported often being placed in the position of having to educate and challenge practitioners themselves (Duffy et al., 2016; Ferrucci et al., 2023). These findings suggest support for eating disorders requires improvement, to better meet the needs of gender diverse populations. To do so, improved understanding of the aetiology and presentation of eating disorder/disordered eating difficulties within this population is required.

#### *Research gaps*

Scoping reviews of research exploring disordered eating within transgender and non-binary adults (Heiden-Rootes et al., 2023), transgender youth (Coehlo et al., 2019) and the LGBTQ+ community more widely (Parker & Harriger, 2020) have gone some way to elucidate risk and protective factors of disordered eating in gender diverse populations. To the authors' knowledge, however, no comprehensive, up-to-date systematic review of qualitative research exists. For a population that has been underserved by psychological and healthcare research and faces significant problems with accessing adequate healthcare, methodologically rigorous and comprehensive research which seeks to elevate the voices of gender diverse individuals is needed. Jones et al.'s (2016) systematic review of quantitative and qualitative research provided important findings regarding body dissatisfaction; however, further research exploring risk factors beyond body dissatisfaction is of importance. Additionally, given the increased research interest in this area, an up-to-date review is warranted. Specific exploration of other gender identities, in particular non-binary identities, is also needed; differences exist, but research exploring other gender identities is limited (Zorc, 2022).

#### *The current review*

This review aims to further understanding regarding the relationship between gender identity and eating disorder/disordered eating symptoms, as reported by gender diverse individuals. This will be achieved by systematically reviewing and thematically synthesising relevant qualitative research.

Thematic synthesis is a commonly used approach and can play important roles in guiding healthcare policy and practice (Thomas & Harden, 2008).

An inductive, critical realist approach will be applied throughout the research; to identify, comprehend and describe participant experiences and perspectives. Critical realism recognises our understanding of reality is shaped by our worldviews and perspectives (Bhaskar, 2010).

## 2. Method

This review was developed using the Preferred Reporting for Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al. 2021) and was pre-registered on PROSPERO (CRD42023427773).

### 2.1 Search strategy

A systematic search of the literature was conducted July-August 2023, by the first and second author (independently, with selections discussed once completed). OVID interface, Scopus, PubMed, CINAHL, Web of Science and ProQuest databases were reviewed. No date restriction was included.

Studies were identified using two blocks of terms, identifying the phenomenon of interest (eating disorders and disordered eating) and population (gender diverse individuals). Table 1 comprises the search terms and Boolean operators utilised. Several websites (e.g., GIRES, Stonewall) were consulted to identify gender identity terms; the authors recognise this is not a comprehensive list, but felt it adequately encompassed terms most likely to be used in research. Several terms which are no longer commonly utilised were included, too, given older papers may have used this terminology.

Block one - eating disorder terms	Block two - gender terms
"eating disorder*" OR anorexi* OR bulimi* OR purging OR fasting OR "binge eat*" OR "disordered eating" OR EDNOS OR "Eating Disorder Not Otherwise Specified" OR OSFED OR "Otherwise Specified Feeding and Eating Disorder" OR	transgender* OR "trans individual*" OR "trans person" OR "trans people" OR "non binary" OR "gender divers*" OR "gender dysphori*" OR nonbinary OR "gender minorit*" OR "non-binary" OR "gender fluid" OR "gender queer" OR

ARFID OR "avoidant and restrictive food intake disorder" OR "restrict* eat*" OR "selective eating disorder"	"Genderqueer" OR "gender varian*" OR "gender non-conform*" OR "Gender nonconform*" OR transsexual* OR agender OR "gender expansiv*" OR "gender identit*" OR "gender express*" OR "Gender incongruen*" OR "Gender Identity Disorder*"
AND	

Table 1. Search terms

<i>Population</i>	Individuals who identify as a gender other than cisgender. This is inclusive of any minority gender identity such as transgender, non-binary, gender fluid and agender.
<i>Phenomenon of interest</i>	Opinions of individuals with experience of an eating disorder who identify as gender diverse, on the relationships between their gender identity, gender expression and eating disorder/ disordered eating, and risk/ protective factors perceived as unique to this population/ specific gender identity.
<i>Context</i>	Any context.

Table 2: Key elements of the research question as identified with the PICo tool

## 2.2 Eligibility criteria

Studies were eligible if they included qualitative data regarding how gender diverse individuals perceived the relationship between gender identity and disordered eating. It was agreed to exclude case studies, given the difference in methodology and rigour required.

Given reported barriers to accessing diagnosis and treatment for eating disorders in gender diverse populations (e.g. Duffy et al., 2016), diagnosis of an eating disorder was not required; papers exploring eating disorders as well as disordered eating and exercise more broadly were included (allowing the authors to explore a wider range of experiences). Papers which did not look specifically at disordered eating (for example, those which explored body dissatisfaction or health behaviours more broadly) were excluded. No restrictions of country were implemented, however only papers available in the English language were included, to avoid potential loss of meaning through translation (Van Nes et al., 2010).

Inclusion criteria	Exclusion criteria
1) Qualitative studies which include individuals with experience of an eating disorder/ disordered eating symptoms AND who identify as a gender other than cisgender.	1) Solely quantitative studies
2) Mixed or “hybrid” studies that include qualitative information on eating disorders within this population.	2) Studies solely focused on experiences of eating disorder screening/ assessment/ treatment in gender minority populations (whether qualitative or quantitative)
3) Scientific articles, dissertations.	3) Studies about other mental health problems (not inclusive of eating disorders) within this population
4) English language only.	4) Case studies/ series
	5) Book chapters
	6) Studies solely exploring cisgender individuals
	7) Studies solely exploring intersex individuals
	8) Studies solely exploring views of professionals/ family members/ carers/ partners

*Table 3. Inclusion and exclusion criteria*

### 2.3 Screening process

Figure 1 depicts the screening process using PRISMA (2020) guidelines (Page et al., 2021). All papers were screened by the first and second author. Both authors met on multiple occasions to discuss selection; 14 final references were shortlisted following screening of title and abstract, via EndNote. The first author then screened reference lists of the shortlisted papers, as well as the citations as listed on Google Scholar. An additional 8 papers were identified and, following discussion with the 2<sup>nd</sup> author, added to the shortlist for full-text read-through. As several papers identified were unpublished theses, the inclusion of grey literature was revisited. Initially, unpublished “grey” literature was excluded; however, it was agreed that the theses identified would add to the current review, and so inclusion criteria was adapted to include academic theses. ProQuest was then screened for additional relevant grey literature (this database did not provide any additional papers). Full-text read through was completed by the first and second author separately, with several discussions leading to 100% agreement in the final selections.

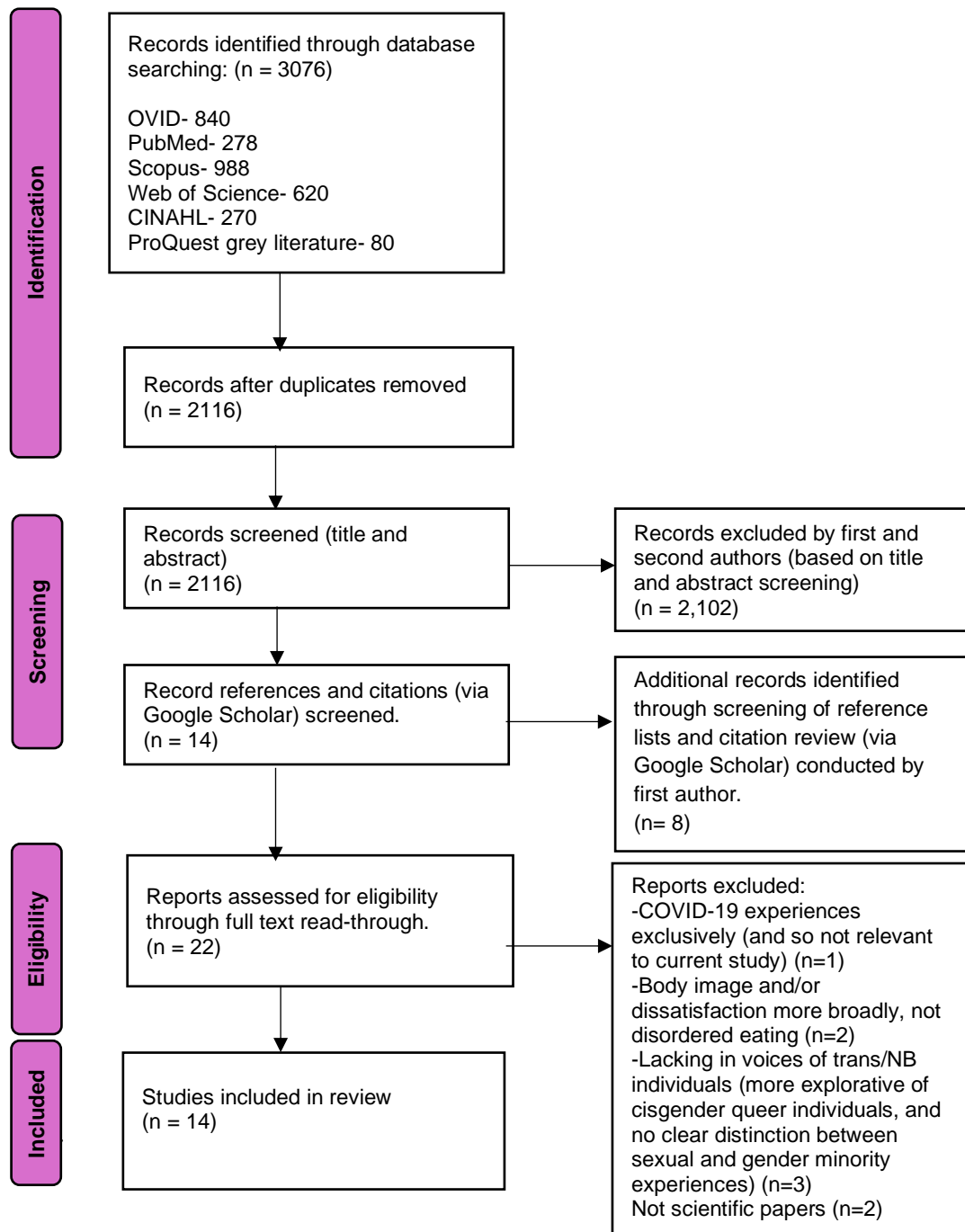


Fig 1. PRISMA flow diagram of screening process

#### 2.4 Quality Appraisal

Quality appraisals were conducted by the first and second author, independently. The Critical Appraisal Skills Programme (CASP, 2018) qualitative checklist was utilised. The CASP checklist comprises 10 questions, which explore the risk of bias and quality of research papers (see table 4). The CASP is the most frequently used appraisal tool in qualitative systematic reviews, and is an efficient and effective tool which is suitable for novice researchers (Long et al., 2020); thus deemed most appropriate for the present study. Two adjustments were made. Firstly, an additional analysis

option was added. The original CASP includes “yes”, “no”, or “can’t tell”; however, Long et al. (2020) introduced a fourth descriptive, “somewhat”. This addition allowed for some recognition of the nuance in quality of papers, and was thus adopted for the current review. The wording for this review, however, was changed to “partially”, as it was felt this better reflected the meaning of this descriptive within the present study.

Secondly, an additional question recommended by Long et al. (2020) was included: ‘*Are the study’s theoretical underpinnings clear, consistent and conceptually coherent?*’. Epistemological and ontological considerations are, increasingly, recognised as of significance in research. The theoretical and philosophical underpinnings of data collection and analysis can have significant implications on findings (Long et al., 2020); researcher’s basic assumptions of how reality is constructed and knowledge is gained will inform how they collect and analyse information about participant experiences (Chamberlain, 2015). To fully appraise the research, therefore, it was important to know the lens through which the data had been collected and analysed. The authors discussed this question in depth, to establish interpretation for the present study. Given the wording of the question focusing on clarity, consistency and coherency, the authors chose to rate any paper which made no mention of their theoretical underpinnings “can’t tell”. Papers which made some mention of the theoretical underpinnings, but showed inconsistency, incoherence and lack of clarity around these were scored as “no”. “Partially” was utilised if there was some mention made of consistent theoretical underpinnings, but this lacked clarity.

The first and second authors each reviewed 100% of the included papers independently, before meeting on several occasions to discuss ratings and work through any discrepancies collaboratively until an agreement was reached. In a small number of papers, consensus was not reached; when this occurred, the 3<sup>rd</sup> author was included in discussions and each point agreed. No analysis of agreement between researchers was conducted; due to the subjective nature of the findings, it was deemed more effective to discuss each paper carefully, to reach full agreement.

<b>Question number</b>	<b>CASP question</b>
1	Was there a clear statement of the aims of the research?
2	Is qualitative methodology appropriate?
3	Was the research design appropriate to address the aims of the research?

4	Are the study's theoretical underpinnings clear, consistent and conceptually coherent?
5	Was the recruitment strategy appropriate to the aims of the research?
6	Was the data collected in a way that addressed the research issue?
7	Has the relationship between researcher and participant been adequately considered?
8	Have ethical issues been taken into consideration?
9	Was the data analysis sufficiently rigorous?
10	Is there a clear statement of findings?
11	How valuable is the research? <ul style="list-style-type: none"> <li>- Is there discussion of the contribution the study makes to existing knowledge or understanding</li> <li>- Are new areas where research is necessary identified?</li> <li>- Is there discussion of whether findings can be transferred to other populations?</li> </ul>

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*Table 3. CASP questions*

### *2.5 Data Extraction*

All authors met on several occasions to consider and review data extraction. Relevant key data were extracted by the first author independently, through use of a bespoke data extraction form. The data extracted included location, aims, setting, theoretical background, sample size, participant demographics and gender identity/ies, data collection and analysis methods, and summary of key themes (see Appendix C). Qualitative data extraction requires a level of interpretation from the reviewers, and as such is susceptible to bias. To reduce risk of bias, the data extraction tables were reviewed by the second author, and interpretations were discussed with the wider team.

### *2.6 Data Synthesis*

Thematic synthesis (Thomas & Harden, 2008) was utilised; an approach frequently employed in healthcare research. It is inductive in nature, and thus deemed appropriate for the current review. The three stages of Thomas and Harden's (2008) thematic synthesis were followed. The results sections of each paper were entered as-presented into an excel spreadsheet. The first author coded each line-by-line, with codes inductively created to identify the context and meaning. A 'bank' of codes was developed through this process, and grouped. New codes were developed to capture meanings of groups of codes, with similar concepts translated into common themes. The codes were then further interpreted by the first author, to identify superordinate themes and subthemes. The

second author reviewed the coding of 4 of the 14 papers, and interpretations, codes and themes were discussed on multiple occasions with the research team.

### *2.7 Reflexivity*

Consideration of the position of the researchers, and risk of bias, is of significance within qualitative research. Interpretations of meaning can differ depending on the “lens” with which one reviews the information. The researchers’ own identities are of particular relevance to the present study. The first author identifies as a cisgender, queer woman, and this lens may well influence interpretation of findings. The authors frequently reflected on potential bias. Both the first and second authors completed all stages of selection and quality appraisal independently, and met often to discuss and review. The second author also reviewed the coding process, and interpretations were discussed on multiple occasions. Use of supervision from the other authors, as well as frequent reflective discussions were essential throughout.

## **3. Results**

### *3.1 Study characteristics*

Most of the papers included in this study were published ( $n=10$ ), 4 were unpublished theses/dissertations. The dates of publication spanned from 2012 to 2023. The majority utilised semi-structured interviews to collect data ( $n=10$ ) (see appendix D for study characteristics table).

In total, 183 interview participants, 82 survey respondents, 13 bloggers, 4 vloggers, 13 YouTube videos and 19 Reddit posts were included in the review. Participant ages ranged from 14 to 71 years of age, and samples included a range of gender identities, ethnicities, socioeconomic backgrounds, sexualities, and educational backgrounds. A majority of studies ( $n=12$ ) were conducted in predominantly English-speaking countries. Two studies appeared to have been completed in predominantly non-English speaking countries (Finland and Italy); however, no information regarding language of interviews was provided. A majority ( $n=9$ ) were published in the USA. Participants were not limited to those with diagnosed eating disorders; several papers focused on eating and exercise more broadly within gender diverse populations.

### *3.2 Quality assessment*

All studies were critically appraised using the CASP tool (see table 5). All studies met a majority of criteria, indicating included studies were of moderate or high overall quality. Of note, only a minority ( $n=4$ ) of the included studies met full criteria for consideration of relationships with participants.

Studies were rated as partially meeting criteria when there was some evidence of reflexivity in this area, but no specific comments about relationship with participants were made; a majority ( $n=8$ ) received this rating. All included studies discussed rationale for the research, the value of the study and future research directions. A majority of studies ( $n=8$ ) also made reference to theoretical underpinnings.

The CASP tool does not provide a scoring system, however NICE (2012) guidelines suggest qualitative research should be assessed on the proportion of the checklist criteria met, and the likelihood of this altering conclusions drawn (see table 5). This method was utilised to score the studies in the present review. In the case of the 4 unpublished theses included, these were not scored as of high quality, given they had not been through the peer-review process required for published articles.

Quality score	Criteria
++	All or most of the checklist criteria have been fulfilled, where they have not been fulfilled conclusions are very unlikely to alter.
+	Some of the checklist criteria have been fulfilled, where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter.
-	Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

*Table 5. NICE (2012) scoring system guidelines*

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>Overall score</b>
Algars et al. (2012)	Yes	Yes	Yes	Can't tell	Yes	Yes	No	Yes	Yes	Yes	Yes	+
Bowman (2018)	Yes	Yes	Yes	Partially	Yes	Yes	Partially	Yes	Yes	Yes	Yes	+
Brewer et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Partially	Partially	Yes	Yes	Yes	++
Chung (2020)	Yes	Yes	Yes	Yes	Yes	Partially	Yes	Yes	Yes	Yes	Yes	+
Cusack et al. (2022)	Yes	Yes	Yes	Yes	Partially	Yes	Partially	Yes	Yes	Yes	Yes	++
Garvis (2021)	Yes	Yes	Yes	Yes	Partially	Yes	Yes	Can't tell	Yes	Yes	Yes	+
Gordon et al. (2016)	Yes	Yes	Yes	Yes	Partially	Yes	Partially	Yes	Yes	Yes	Yes	++
Harrop et al. (2023)	Yes	Yes	Yes	Partially	Yes	Partially	Partially	Yes	Yes	Yes	Yes	++
Joy et al. (2022)	Yes	Yes	Yes	Yes	Partially	Yes	Partially	Yes	Yes	Yes	Yes	++
Mirabella et al. (2020)	Yes	Yes	Partially	Can't tell	Partially	Partially	No	Yes	Yes	Yes	Yes	+
Pham et al. (2023)	Yes	Yes	Yes	Can't tell	Yes	Yes	Partially	Yes	Yes	Yes	Yes	++
Pinelli (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	+
Romito et al. (2021)	Yes	Yes	Yes	Can't tell	Yes	Yes	Partially	Yes	Yes	Partially	Yes	+
Zamantakis and Lackey (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	++

Table 6. Quality appraisal

### 3.3 Thematic synthesis

Analysis produced 6 superordinate themes. All themes were represented by high and moderate quality papers; see appendix E for the papers represented by each theme.

Themes do not represent an exhaustive list of participants' experiences but summarise prevalent themes. Themes also do not represent all participants, gender identities, disordered eating experiences and backgrounds. Variations in experiences across stages of transition, eating disorder recovery, and life were observed, too. Additionally, while most participants did recognise some connection between their gender identity and disordered eating experiences, this was not universal, and still others reported themes common within EDs more generally.

#### 3.3.1 **Theme 1:** *Interconnectedness of Gender Dysphoria and Eating Disorders*

All included papers discussed interconnectedness of gender and eating disorders, across gender identities. As one participant explained, *"...being trans doesn't necessarily cause an eating disorder but does inform how that eating disorder is experienced..."* (Zamantakis & Lackey, 2022).

Some participants discussed how their gender dysphoria and eating disorder are difficult to separate. *"...I recognise just how interlinked the two are, that whenever I talk about my eating disorder issues, basically gender has to come up..."* (Joy et al., 2021). One participant discussed how they *"...can't even imagine what a cis person's experience would be like with an eating disorder because mine was so shaped by being trans and they were so connected."* (Pinelli, 2019). A generalised sense of body dissatisfaction was of particular relevance to several participants, for example: *"In terms of body hatred, when you hate your body for one reason, it's sort of easy for that to transfer to hating it for other reasons."* (Chung, 2020). This interconnectedness was cause for concern for some. *"I don't know how much is eating disorder and how much is dysphoria and that's really challenging, cause I don't want to just like feed into it and change a bunch of things and have it not be enough. But I also don't want to just continue living in being upset about it constantly."* (Bowman, 2018).

#### 3.3.2 **Theme 2:** *Gender expression*

All reviewed papers discussed management of gender as an underlying cause of disordered eating. Participants described engaging in disordered eating, both consciously and unconsciously, as a way of influencing their gender expression.

### 3.3.2.1 Subtheme 1: Managing gender

In all reviewed papers and across gender identities, participants discussed engaging in disordered eating behaviours to suppress characteristics of sex assigned at birth and adapt their body to better align with their gender identity. One participant described how “...[an eating disorder] seems like the easiest way to like not look like a girl...” (Bowman, 2018).

Participants outlined how their disordered eating was driven partially by a need to suppress or compensate for sex characteristics (such as height, curves, and menstruation). “*The background of that crazy weight loss was that my curves would disappear. They have always felt disgusting...*” (Ålgars et al. 2012). “*Weight loss might not be a hormone blocker but it sure is a period blocker...*” (Garvis, 2021). “*Because of my [male] height it is easier for me if I am thinner.*” (Ålgars et al., 2012).

For some who identified outside the gender binary, disordered eating meant removing gendered aspects of their body. “*I didn’t really come out as trans. Instead, I came in—into an adolescent health clinic with my blood pressure at 89/58 and a heart rate of 44 beats per minute...I finally voiced what I had known all along: controlling my eating was about making the contours of gender melt away into straight lines of androgyny.*” (Zamantakis & Lackey, 2022).

Participants described feeling heightened pressure to control gender in comparison to cisgender people: “*I have to be like this ultra-feminine woman... ‘Cause at the end of the day, they [cis women] don’t stop being women because they were born women. Meanwhile, I have to constantly prove to myself, to people, that I fit the bill.*” (Gordon et al., 2016). Pressure to pass, avoid others questioning their gender, and prove themselves as feminine/masculine/androgynous influenced disordered eating. As one participant remarked, “*...if I were able to adapt my body in these ways, then maybe the world would see me as I want to be seen...*” (Chung, 2020).

A non-binary participant outlined how their ED was associated with misgendering; “*...when they used “she” to refer to me, I heard ‘you need to lose more weight...’*” (Zamantakis & Lackey, 2022). Misgendering increased body dissatisfaction for some: “*I have, a dysmorphic sense of my body a lot of the time. So, I’ll be very conscious of like where fat is on my body and...And my brain goes to that place of like, “Oh, like, these are the reasons like you’re being misgendered.”*” (Chung, 2020).

### 3.3.2.2 Subtheme 2: Societal ideals

Use of disordered eating and exercise to alter one's body was discussed in the context of societal expectations of femininity/masculinity/androgyny in most papers. Meeting gender stereotypes, for some, meant more effectively 'passing' and proving their gender to themselves and others. Thinness was a stereotype commonly associated with femininity and androgyny in white, western cultures, although masculine participants outlined striving for thinness too (largely to reduce feminine characteristics, as outlined above). For example: *"My disordered eating is directly related to how I feel I have to make myself look in order to be a "real" woman. I feel that I have to follow feminine beauty standards more strictly than others otherwise my gender will be called into question and as such I require myself to be quite thin."* (Cusack et al., 2022). Stereotypes of gender varied across cultures and ethnicities but were still influential of disordered eating for many, regardless of background.

Transmasculine participants also discussed use of over-exercising to fit stereotypes of masculinity. *"I started working out more and I was pushing myself...probably a little bit more than I should...to make sure that I fit some stereotypical masculine things."* (Pham et al., 2023).

For some, not meeting these stereotypes meant their gender was seen as less valid; by others and themselves. *"I used to think that to be androgynous and to be taken seriously as nonbinary that you had to be thin..."* (Cusack et al., 2022).

Such standards were observed and perpetuated within LGBTQ+ and gender diverse communities: *"Almost every trans man that's widely followed on Instagram or YouTube...is really obsessed with fitness, and super ripped...there is a huge focus on bodies, and I think part of it is that you can really masculinize your body by being really muscular...Hyper muscular types of bodies being celebrated, and other bodies were not represented at all."* (Pinelli, 2019).

For many, beauty standards centred around "cis-ness". Several participants discussed societal pressure to conform to what cisgender populations expected and valued. This was shaped by transphobic ideologies, which devalue individuals who differed from the norm. *"The type of people that straight cis people want to follow are the trans people they can get behind...They want to see that; they don't want to see the like super queer people."* (Pinelli, 2019)

### 3.3.3 Theme 3: Coping psychologically

A majority of papers reported participants utilised disordered eating behaviours as a way of coping with a wide range of stressors, including current life circumstances and past traumas. Of particular relevance to this population was gender dysphoria and lack of control.

#### 3.3.3.1 Subtheme 1: Coping with gender dysphoria

Disordered eating was reported by many as a way of coping with body dissatisfaction and gender dysphoria, feelings of shame associated with their gender identities (shaped by internalised transphobia: discussed in theme 4), the distress of not being seen for who they are and being unable to live authentically. This theme was mentioned by participants of binary and non-binary gender identities.

Disordered eating was a way of soothing this pain; *“Sometimes when I feel very sad and I hate my body, I hate myself, I feel better if I eat. It’s like it soothes the pain.”* (Mirabella et al. 2020). It also provided a distraction: *“Pouring my energy into anorexia meant I didn’t have as much time to worry about my gender”* (Cusack et al., 2022). *“If you’re concentrating more on like, you know, ‘I might faint,’ you’re less concentrated on, like, ‘Everyone is viewing me as a girl, and that is painful.’”* (Romito et al., 2021). And for others, disordered eating provided a way of disconnecting themselves from a body incongruent with their gender identity: *“I just sort of wanted to be invisible...Let’s not acknowledge that I have a body...”* (Harrop et al., 2023)

For some, disordered eating was a method of harming or punishing their bodies: *“I definitely had fantasies of just, like, my organs breaking down and, like, stopping working... trying to destroy this body that’s been sort of attacked and, you know, invaded by outward expectations of gender...”* (Romito et al., 2021). And in some cases, a form of suicidality: *“At the end, my anorexia was no longer about weight, or about my body shape. I just wanted to die...”* (Mirabella et al., 2021); highlighting the extent of distress that may be experienced.

#### 3.3.3.2 Subtheme 2: Control

Disordered eating also provided a way of coping with a lack of control; by giving individuals a way of feeling more in control of their bodies and lives. *“Looking back, it was definitely a control thing, even though I wasn’t able to recognise it or have the words to express it. To compensate for having no control over my body or who I am...”* (Joy et al., 2021). *“...It was a way to control my life during a time when I couldn’t be myself.”* (Cusack et al., 2022).

This was especially relevant during puberty; a time of confusion, fear, and discomfort for many, as their bodies developed in ways which were incongruent to their felt sense of gender. Eating disorder symptoms developed in the context of this distress, and provided a way of gaining control of a body which was betraying them. *“I was trying to starve myself out of puberty happening because I hated absolutely everything my body was doing and wanted it to stop”* (Garvis, 2021). For some, this was conscious, for others the relationship between their eating disorder and going through puberty in the wrong gender did not become clear until later.

#### **3.3.4 Theme 4: Surviving in the context of marginalisation**

Most papers mentioned the impact of transphobia, discrimination, and marginalisation in relation to EDs in the gender diverse population. This theme was seen across gender identities, although experiences differed.

Some participants reflected on the compounding effect of multiple stigmatised identities; alongside transphobia, prejudice related to race, sexuality, sex, and weight (for example) were also discussed. As intersectionality (Crenshaw, 1989) explains, these stigmatised identities interact in complex and unique ways to shape experiences of marginalisation.

##### **3.3.4.1 Subtheme 1: Safety**

Disordered eating appeared to provide protection amidst this context. Prior to realising their gender identity, some worked hard to over-perform their sex assigned at birth, as a way of masking and/or distracting others and themselves from their gender identity; for protection from anticipated discrimination and from the distress associated with gender. Disordered eating and exercise provided a way of doing so for some: *“[Prior to openly identifying as non-binary] Overperforming femininity was very involved in my ED...Really striving to fit those cultural narratives and boxes of how I’m supposed to look and act as a woman.”* (Harrop et al., 2023).

Safety was also sought through conforming to societal expectations and beauty ideals through disordered eating. Participants reported that being slender, appearing as close to cisgender as possible, and meeting appearance ideals of society offered protection from discrimination, and benefits in society. *“It matters what you look like ...people are going to discriminate against you”* (Harrop et al., 2023). *“It’s also proximity to whiteness and proximity to different set of standards...I don’t want to say that if you express your gender in a certain way that you have more of a privilege. I*

*don't think that it's a privilege, but I think that if you do conform to what people's expectations of what a non-binary person looks like, you're more likely to get recognition and respect."* (Pinelli, 2019)

#### **3.3.4.2 Subtheme 2: Psychological impact**

Participants also identified the psychological impact of marginalisation on their wellbeing and disordered eating. Participants commented on experiences of bullying, exclusion, discrimination, violence, and aggression. For example: *"I was really, really heavy, because you're comfort eating... you're trying to mask pain...The...stress of being laughed at, being joked at, being humiliated, you know all that stuff. Then you have your marriage break down and... it's all because of being transgender..."* (Brewer et al., 2021). These discriminatory views of others can be internalised and pave the way for a shame-based relationship with themselves and their bodies, manifesting in part through disordered eating. A participant commented that they *"...have a lot of internalized homophobia/transphobia that sometimes creates shame and feelings that I don't deserve to eat"* (Cusack et al., 2022). Some participants described use of disordered eating to shrink their bodies, in this context, of *"...reducing the amount of space you take up in a capitalist, racist heteropatriarchy fundamentally against people like you..."* (Zamantakis & Lackey, 2022).

Non-binary participants outlined how enforced gender binaries in society and lack of representation, too, can affect one's relationship with oneself, and subsequently disordered eating: *"To be nonbinary in a binary society is to feel less than human...You learn that you are not normal..."* (Zamantakis & Lackey, 2022). *"...There's this idea that monsters don't have reflections in a mirror...if you want to make a human being into a monster, deny them, at the cultural level, any reflection of themselves."* (Zamantakis & Lackey, 2022).

#### **3.3.5 Theme 5: Healthcare**

Experiences with accessing healthcare support was of importance in participants' journeys with their eating disorders. Both positive and negative experiences with accessing Gender-Affirming Care (GAC) and ED-specific care were discussed.

##### **3.3.5.1 Subtheme 1: Gender-affirming care and eating disorder recovery**

Most papers cited the effects of GAC on disordered eating and recovery, however perspectives varied.

For many, accessing GAC meant they no longer had to rely on disordered eating to alter their bodies. As one participant remarked, *“I am not having to starve myself to get the no hips, it’s happening.”* (Pinelli, 2019). Other participants cited a new motivation to take care of their bodies after accessing gender-affirming treatment: *“I want to look after myself when I’m Chantelle”* (Brewer et al., 2021). Although some commented on the limitations of GAC in improving disordered eating: *“Even though [Testosterone] did a ton for my confidence, it didn’t magically cure my disordered behaviours.”* (Garvis, 2021).

Some described unwanted weight gain from hormone therapy negatively impacting them: *“[On body changes with testosterone] ...it changes your weight distribution which is obviously very potentially triggering as someone with an eating disorder and also just like the loss of like sense of control of your body...”* (Bowman, 2018). One participant remarked how hormone therapy makes *“Everyone [feel] like a monstrous doll of different puzzle pieces during transition because of the competing hormones.”* (Garvis, 2021), when reflecting on the impact of hormone therapy on their eating disorder.

Participants also commented on weight targets for gender-affirming surgery. Several disclosed rapid and unhealthy weight loss to be eligible for surgery, and ensure surgery was as effective as possible. For example, on discovering she did not meet the size requirements for surgery, one participant commented: *“I was frightened to death! So, four weeks I had a five hundred calorie a day diet.”* (Brewer et al., 2021).

### 3.3.5.2 Subtheme 2: Gender and ED treatment

A majority of the papers reported barriers to ED treatment, which had a profound impact on experiences of disordered eating and recovery.

For some masculine/androgynous participants, the narratives of disordered eating as a cisgender girl’s problem prevented them from acknowledging difficulties and seeking help. *“...Most of the messaging I’ve seen around getting help for disordered eating has been like, young women who really want to be skinny...that was not my experience, so I sort of thought well, this can’t really be like something that I seek out because I don’t fit the profile’.* (Joy et al., 2022). Another reflected that to seek ED treatment felt invalidating of their gender: *“I was very reluctant to seek help with it because EDs are a ‘girl thing’ and it felt like admitting I was struggling with one would mean I was actually a girl.”* (Garvis, 2021).

Similarly, the cis-centric nature of eating disorder treatment meant that many gender diverse individuals experienced interventions as unhelpful, and harmful. One participant commented: *“[When] I got specific ED treatment I felt...like I didn’t really belong there...”*; this led to feeling *“lonely and isolated”* (Harrop et al., 2023). Participants also outlined how ED practitioners often ignored gender identity: *“It’s an aspect of myself and the way in which I view my body...If we’re just not talking about it, that’s ignoring an entire segment of this treatment”* (Harrop et al., 2023).

Participants also commented on the focus in ED treatment on diet culture and body acceptance; this can feel invalidating to those who are suffering because of the incongruence between their gender and body. *“...so much emphasis [in treatment] on like accepting your body as it is, and that your body is perfect as it is... [conflicts with what] you want to do as a trans person.”* (Garvis, 2021).

Other barriers to accessing healthcare included discriminatory attitudes of healthcare professionals, a lack of understanding of gender identity in professionals and service-users being placed in the position of having to educate staff, a lack of safe queer spaces and lack of representation of different gender identities in healthcare professionals.

### **3.3.6 Theme 6: Recovery and protective factors**

Many participants discussed factors which were protective, and important in their recovery journeys.

#### **3.3.6.1 Subtheme 1: Recovery and transition**

Exploring and connecting with their gender identity was an important aspect of ED recovery for some: *“The more comfy I get in my gender, the farther away my ED gets”* (Cusack et al., 2022). Comfort with gender identity often included distancing themselves from norms and expectations and living more authentically; *“[Recovery] means not conforming. A lot of my ED was connected to conforming or trying to conform”* (Harrop et al., 2023).

However, recovery from ED also meant weight gain, and a return of some secondary sex characteristics (e.g. curves, menstruation). For some this was distressing: *“What the doctors called “progress” was to me the methodical undoing months of my hard work. I could actually feel my body changing, feel myself sliding away from where I wanted to be. Gender was size, and size was gender.”* (Zamantakis & Lackey, 2022).

Reconnection with the body was of importance to some. ED recovery requires reconnection to the body, which can be painful: *“Going from a robot body to a fleshy body...[was] very disruptive to my identity and sense of self”* (Harrop et al., 2023). But for some participants, *“reclaiming my body”* was an important step in ED recovery; *“letting my body be and listening to my body...”* (Harrop et al., 2023).

Recovery from disordered eating difficulties allowed participants to understand their gender identity better and find alternate ways of seeking gender-affirmation: *“Only now that I have been more committed to recovery have I allowed myself the space to explore gender and the other options for bringing my body into alignment with my internal sense of gender.”* (Cusack et al., 2022).

### 3.3.6.2 Subtheme 2: Connection

Participants described the benefits of supportive social networks *“...I came out to my partner and my family and friends...that’s definitely helped with body image stuff, it doesn’t make it go away but...just less self-conscious about a lot of things, I would say.”* (Bowman, 2018). Connection to LGBTQ+ and gender diverse communities and others who have experienced similar was also referenced: *“I think that isolation is one of those things that helps contribute to eating disorders so being able to connect with people and relate to them in certain ways I think helps with getting past that”* (Pinelli, 2019). Connection also provided opportunities to learn from others: *“There are so many people who are willing to share their own experiences and I have found like queer and trans people who have gone through similar things and that’s been really helpful...”* (Pinelli, 2019).

### 3.3.6.3 Subtheme 3: Resistant narratives

Connection with communities and narratives of resistance was also protective for some; recognition of the negative effect of societal beauty ideals and critical consumption of the media, for example. *“...People don’t always need to conform to one specific body type to be the kind of person they want to be...reinforcing the idea that body image does not necessarily need to fit one particular stereotype and that there are multiple options that are okay to be.”* (Pham et al., 2023). As well as connecting with others who actively resist these expectations: *“...the people I’m around are not enforcing these stereotypes, or upholding them, or engaging in them at all. We are actively against that.”* (Harrop et al., 2023).

#### 3.3.6.4 Subtheme 4: The protective nature of non-binary identities

Several participants who identified outside of binary genders cited how connecting with their non-binary identity allowed freedom. The category-less and unrepresented nature of the identity allowed people to free themselves from societal expectation. *“...When you’re not represented, there is no person that you can hold up as an ideal... All of that [body ideals] is just thrown out of the fucking window. I don’t have any expectations that I’m trying to live up to.”* (Harrop et al., 2023). Freedom from societal expectation allowed freedom from disordered eating, for many.

## 4. Discussion

### 4.1 Summary of findings

This paper sought to systematically review qualitative literature exploring the risk and protective factors of EDs and disordered eating within gender diverse populations, as identified by gender diverse individuals. Six overarching themes were identified: Interconnectedness of gender dysphoria and eating disorders; gender expression; coping psychologically; surviving in the context of marginalisation; healthcare; and recovery and protective factors.

The findings highlight the complex relationship between gender identity, gender dysphoria, and disordered eating. Many participants commented on the inseparability of disordered eating from their gender identity and gender dysphoria. Of importance is the experience of confusion some gender diverse individuals faced when making sense of this relationship. Many were unaware of these underlying influences of disordered eating until later in their journey, and others worried about the motivations behind choosing to access gender-affirming interventions (whilst recognising importance of these interventions in reducing dysphoria and improving disordered eating difficulties).

A key aspect of the relationship between gender identity, gender dysphoria and disordered eating was body dissatisfaction. Cultural and societal gender expectations and body ideals were influential in this; echoing findings of previous research, such as Jones et al.’s (2016) review. Conforming to societal expectations was associated with disordered eating for many; but allowing themselves to let go of the pressure to conform, recognise that there is no one “right” way to do gender, and live authentically meant freedom.

To live authentically, however, was not without risk. In the context of a society which devalues difference, and is discriminatory and oppressive, non-conformity can be dangerous. Gender diverse

people face discrimination, aggression and harassment, or the threat of these, daily. This is seemingly on the rise: transgender hate crimes in England and Wales rose significantly between 2021-2023 (Office of National Statistics, 2023), and hate crime statistics only show a small snapshot of the true extent of the marginalisation and oppression gender diverse populations can and do face (e.g. Ellis et al, 2016; Puckett et al, 2021). Participants in the current review reflected on the profound impact of marginalisation. Exploring gender identity, developing an understanding and acceptance of who you are, and living outside of the confines of societal expectations is challenging in this context. Particularly when discrimination and stigma impact accessibility of gender-affirming treatments and adequate healthcare (e.g. Carlile, 2020; Hobster & McLuskey, 2020). These findings are in line with previous research (Brewster et al., 2019), which found significant associations between anti-transgender discrimination and disordered eating. Findings also support the application of the minority stress model to disordered eating within gender diverse populations (Hendricks & Testa, 2012; Gordon et al., 2021).

For many, disordered weight and shape control behaviours provided a way of coping: with the emotional distress of marginalisation, internalised transphobia, and the resultant shame-based relationship with oneself that can manifest; with gender dysphoria, the distress of going through puberty in the wrong gender, and the lack of control felt over their bodies and lives. This echoes knowledge of EDs more broadly (e.g. Fairburn, 2008); but the unique stressors that can be faced by gender diverse individuals are important to consider.

The findings provide support for Gordon et al.'s (2021) proposed model of disordered eating in gender diverse populations. This model draws on sociocultural understandings of EDs (influence of societal expectations and norms), as well as Minority Stress Theory (Meyer, 2003; Hendricks & Testa, 2012) and the influence of oppression and stigma; considering how these factors can impact body dissatisfaction and disordered eating. The model also draws on the gender-affirmation framework (Sevelius, 2013), which posits that if an individual's needs for affirmation are high, but access to gender affirmation (e.g. medical, social, legal) is low, individuals may be pushed to seek affirmation in riskier ways, such as using disordered eating behaviours to alter the body.

Reflected in the current review, and in support of Gordon et al.'s (2021) model, are the numerous protective factors reported by gender diverse people. Support, acceptance and validation from friends and family, as well as wider systems (including healthcare professionals), and LGBTQ+ and gender diverse communities can be vital in ameliorating risk of and supporting recovery from

disordered eating. Individual and community resilience factors, such as narratives of resistance, were also recognised in the review. This provides further support of Gordon et al.'s (2021) model and echoes previous research, such as Parker & Harriger's (2020) review of risk and protective factors of EDs within LGBTQ+ populations.

Research indicates some comorbidity between gender dysphoria and disordered eating difficulties (e.g. Rasmussen et al., 2023), and improved understanding of the unique relationship between the two can be important in guiding support for gender diverse individuals with disordered eating concerns. However, not all gender diverse individuals will experience gender dysphoria and comorbid mental health difficulties. Gender identity is not a cause of mental health problems, including disordered eating, and the findings of this review should be understood to reflect the importance of improving support and challenging discrimination of gender diverse populations in society, as opposed to pathologising gender diverse individuals.

#### *4.2 Strengths, limitations and future research directions*

The present review has several strengths. Firstly, the quality of the included papers was mostly high. Studies were methodologically sound, with rigorous analyses and clearly presented findings. Many papers had considered reflexivity and bias in data collection and analysis. As well, papers included participants of different ages, backgrounds, ethnicities, and socioeconomic status. A broad range of gender identities were also represented, including binary, non-binary, and gender expansive identities. Different disordered eating experiences were also explored; participants with specific diagnoses including Anorexia Nervosa, Bulimia Nervosa, Binge-Eating Disorder and Atypical Anorexia were represented, as well as participants who self-reported disordered eating difficulties. This breadth of experience and diversity of the samples makes the current review more representative of a broader range of populations. However, it is important to note that these are qualitative reports of mostly small samples and are not generalisable to all. Variety in data collection methods is another strength; while most papers utilised semi-structured interviews, the inclusion of papers which collected data from blogs, vlogs, and social media posts, as well as from written responses to an open question appeared to gather more naturalistic views of individuals which may be difficult to access through formal interview techniques.

There are also several limitations. Firstly, several papers explored treatment experiences of EDs within this population, and many participants provided recommendations for clinicians. It was beyond the scope of the present study to review treatment experiences in-depth; further analysis of

these would be of importance. Research was also predominantly conducted in western countries, and the majority in the USA. Review of research not in the English language was beyond the scope of the current review, however future research should consider this, and explore further cultural and ethnic diversity in gender diverse experiences.

While the current review included participants under the age of 18, younger participants were in the minority. Given the importance of puberty, and that adolescence is a known period of increased risk of disordered eating (e.g. Keele & Forney, 2013), further research exploring gender diverse youths is of importance. Coehlo et al. (2019) echo this; their review found a dearth of literature exploring the experiences of gender diverse young people.

#### *4.3 Clinical implications*

The current review highlights several important considerations for healthcare professionals. Firstly, whilst many participants were consciously aware of the relationship between disordered eating and gender, this was not universal; many participants described being unconsciously motivated to engage in disordered eating behaviours. Individuals may require support to explore this link between gender identity and disordered eating in validating and sensitive ways. Pham et al. (2023) for example recommended screening of disordered eating difficulties within gender identity services, to identify concerns and open conversations about disordered eating; and reduce the shame around these difficulties.

Participants across gender identities reported puberty as a particularly high-risk period for disordered eating, but many did not recognise their distress in puberty as related to gender until later. This confusion only added to their distress. Gender diverse young people may present to healthcare services during this period of their lives, and may benefit from a safe, validating and accepting space to start to explore gender and identity.

Eating disorder specialist services could benefit from improving clinician awareness of the impact of gender identity and gender dysphoria on disordered eating difficulties; how presentation and treatment needs may differ. The benefits of gender-affirming healthcare (including hormonal and surgical interventions) in reducing reliance on disordered eating and exercise to alter one's body is important; and ED services should consider this when offering intervention. Additionally, services should be aware that recovery may present additional challenges, with weight changes potentially increasing gender dysphoria. Professionals should be conscious of this and offer support to find safer

ways of seeking gender affirmation and gender euphoria, as well as supporting individuals to connect with other gender diverse people during recovery. Services should also be aware of the potentially invalidating narratives of body acceptance in treatment; adaptations to treatment may be required. Lastly, clinicians can help to challenge stigma and marginalisation in and out of healthcare settings and provide safe and affirming spaces for gender diverse populations seeking support.

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## **Paper 2: Empirical project**

### **Childhood Trauma, Emotions, and the Eating Disorder Voice**

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## **Abstract**

**Background:** Many individuals with an eating disorder report experience of an internal ‘voice’ which represents their disorder. However, research exploring aetiology of this phenomenon is still limited. Past research has identified associations between adverse childhood experiences, emotional difficulties and eating pathology. Recent qualitative evidence suggests that the ‘voice’ specifically may be of relevance in this model; developing during difficult times in an individual’s life and offering a sense of safety and guidance amidst adversity and associated emotional difficulties. The present study aimed to examine the relationship between childhood adversity, emotions, and the eating disorder voice experience. **Method:** In total, 148 participants (recruited via social media and Cardiff University) completed self-report measures exploring childhood trauma, beliefs about emotions, difficulties with understanding, expressing, and regulating emotions, eating disorder voice appraisals (specifically, perceived power of the voice), and eating disorder pathology. All participants had self-reported experience of an eating disorder voice, but the sample varied in terms of diagnoses and presentations. **Results:** The relative power of the eating disorder voice was found to be significantly positively associated with childhood emotional abuse (but no other forms of abuse), and this relationship was partially mediated by difficulties with emotion regulation. Greater voice power was significantly positively correlated with eating disorder pathology. **Conclusions:** These findings provide preliminary support for the roles of childhood experiences and emotion regulation difficulties in aetiology of the eating disorder voice experience. Further research seeking to elucidate this complex phenomenon is recommended. Limitations, future research directions and clinical implications are discussed.

*Key words: Eating disorders; eating disorder voice; trauma; adverse childhood experiences; emotional difficulties; alexithymia; emotion regulation; beliefs about emotion.*

## 1. Introduction

Eating disorders are psychiatric disorders characterised by maladaptive eating patterns and habits. The term ‘eating disorder’ incorporates several diagnoses under the DSM-5 (APA, 2013); Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge-Eating Disorder (BED), Otherwise Specified Feeding and Eating Disorder (OSFED) and Avoidant and Restrictive Food Intake Disorder (ARFID). Eating disorders are notoriously challenging to effectively treat, with high relapse rates and underwhelming treatment outcomes for many (e.g. Zipfel et al.; 2015; Linardon & Wade, 2018; NICE, 2019). The compounding physiological aspects of the disorder create further complexity, as risk is often high; indeed, Anorexia Nervosa has the highest mortality rate of any mental health disorder (NICE, 2019). While many can and do recover from eating disorders, with appropriate support, psychological interventions available continue to show poorer long-term outcomes, and currently no therapeutic approach has been identified as a frontrunner in the treatment of eating disorders (e.g. Zipfel et al., 2015; Linardon & Wade, 2018; Dobrescu et al., 2019). This could perhaps be because the underlying mechanisms of eating disorders are still not well understood (Pennesi & Wade, 2016). Such underlying mechanisms could include, for example, the frequently reported experience of a voice in eating disorders (Pugh, 2016; 2020).

Individuals with eating disorders often report experiencing a voice, commonly described as an internal commentary, which focuses on weight, shape, and eating and how they relate to self-worth (Pugh, 2016). This phenomenon is also often referred to as the “Anorexic Voice”; however, research indicates that the voice is often present across eating disorder types (Noordenbos et al., 2014; Pugh et al., 2018); thus, within the current paper, this phenomenon will be referred to as the ‘Eating Disorder Voice’ (EDV), to reflect the prevalence of the voice experience beyond Anorexia Nervosa. How the EDV is experienced can vary; while a majority of individuals perceive the EDV as internal and a reflection of their own thoughts and beliefs, some report experiencing the voice as external and entirely separate to the self (Rojo-Moreno et al., 2011). It is likely the voice experience exists on a spectrum, from entirely one’s own thoughts, to an entirely external voice (Pugh, 2020).

Qualitative explorations of people’s experiences of the EDV (e.g. Tierney & Fox, 2010, 2011) suggest that the voice tends to emerge in the early stages of the illness, often during a time of vulnerability in the individual’s life. It can present as a comfort, a solution and distraction from problems, and a companion and guide. However, the voice can become critical and dominating over time, punishing, and degrading if they fail to meet the increasingly high expectations of the voice (and can mimic the patterns of bullies and abusers in their lives). Individuals describe striving to avoid the voice’s wrath

by submitting to its will (Pugh, 2020). It is unclear why this change in the voice occurs, but perhaps is representative of the ambivalent nature of people with EDs in relation to their disorder (Aya et al., 2019).

Research and reports from service-users and clinicians thus far indicate that the EDV is a common experience; Aya et al. (2019) found in their systematic review that over 90% of participants with an eating disorder described a voice experience (significantly higher than healthy controls). Noordenbos et al. (2014) found that all participants who had experience of an EDV reported hearing the voice at least once a week, with some reporting a near-constant voice (again, significantly more than healthy controls who reported a voice). Noordenbos and Van Geest (2017) found similarly high rates of the EDV experience. Pugh and Waller (2016) explored the relationship between the EDV and eating disorder pathology in people with AN. They reported a significant association between negative eating attitudes and greater perceived voice power, while the combined characteristics of powerful and malevolent voices was associated with lower BMI. Pugh and Waller (2017), in a clinical sample of women diagnosed with AN, found that characteristics of the voice were associated with severity of ED pathology; for example, perceived voice benevolence was associated with more disordered eating attitudes, and longer duration of ED was significantly positively associated with perceived voice omnipotence. Qualitative research (Chua et al., 2021) has also found that addressing the EDV through use of voice dialogue techniques within therapy was of great benefit, and increased motivation and optimism for change; these findings highlight the potential value of addressing the EDV in treatment of EDs. Given the prevalence and significance of the voice experience within EDs, improving understanding of the voice could be of importance in guiding interventions for eating disorders, yet research exploring this complex phenomenon is limited (Pugh, 2020). The origins and influences of the EDV remain unclear; however, the literature suggests childhood experiences may play an important role (e.g. Morrison et al., 2022; Pugh et al., 2018).

Research has established clear links between adverse and traumatic childhood experiences and eating disorder pathology more broadly (Trottier & MacDonald, 2017). Caslini et al.'s (2016) meta-analysis found a significant association between childhood abuse (sexual, physical, and emotional) and eating disorders. Their findings suggest a significant relationship between abuse and EDs overall; those who experienced childhood trauma were 3.21 times more likely to have an ED than those without trauma. With regards to specific ED subtypes, BED and BN were significantly associated with all types of abuse, whereas AN was only significantly associated with physical abuse. However, Molendijk et al.'s (2017) meta-analysis, which included additional papers, found significant

associations between AN and emotional abuse as well, and a significant association between the AN binge-purge subtype (but not the restricting subtype) and sexual abuse was also identified.

Few studies have explored how childhood trauma relates specifically to the EDV, however findings from studies exploring voice-hearing in psychosis indicate childhood trauma is of significance (e.g. Schäfer & Fisher, 2011). It is possible that this also applies to the EDV. Pugh et al. (2018) found that the perceived power of the EDV was associated with experiences of childhood emotional abuse in a mixed ED sample, but no other types of childhood abuse, and that dissociation was a partial mediator in this relationship. The authors recommended that studies investigate further potential mediational factors between childhood trauma and the EDV.

One potential mediator of interest is underlying emotional factors. Specifically, the present study is interested in the roles of alexithymia (difficulty experiencing, identifying, and expressing emotions), beliefs about emotions, and emotion regulation difficulties.

Several researchers have sought to elucidate the mediating role of emotions in the association between adverse childhood experiences and ED pathology more generally. Corstorphine (2006) and Waller et al. (2007) outline the role of emotional invalidation in development of ED pathology, using Linehan's (1993) Dialectical-Behavioural Therapy (DBT) model. Linehan (1993) considered how environments which invalidate and discourage emotional expression (for example, ones which punish displays of anger, fear, or sadness, and promote suppression of emotions) can cause individuals to develop beliefs that emotions are dangerous or bad and should not be felt. These beliefs are triggered when an emotion deemed unacceptable is experienced, and results in a secondary emotional response (for example, guilt at feeling angry, anger at themselves for feeling sadness). Corstorphine's (2006) model posits that, for some, these beliefs and associated secondary emotional responses can result in significant emotional distress and confusion, and lead to individuals engaging in maladaptive emotion regulation strategies, such as ED behaviours to block and suppress emotional experiences and expression. Suppression, however, often has the unintended consequence of making emotions more distressing and confusing, creating a vicious cycle. Individuals living in emotionally invalidating environments are less likely to learn more adaptive ways of regulating emotions, further exacerbating difficulties.

Research has shown strong links between eating disorder pathology and emotion regulation, with greater difficulties in emotion regulation associated with more severe ED pathology (e.g. Aldao et al.,

2016). Oldershaw et al.'s (2015) meta-analysis of emotion generation and regulation in AN identified key difficulties with emotion regulation in comparison to healthy controls, with greater reliance on maladaptive emotion regulation strategies observed in participants with AN. Oldershaw et al. (2019) have proposed a model of AN, which posits that the disorder emerges as a method of regulating emotion in the context of pre-existing difficulties with emotion (linked with childhood experiences) which have caused confusion, poor integration of cognitive, affective and physiological aspects of emotion, and overwhelm in the face of emotional experiences. Such difficulties are not unique to individuals with AN. Danner et al. (2014) reported women across all ED subgroups were more likely than healthy controls to report suppression of emotion (a maladaptive emotion regulation strategy) and less likely to report use of more adaptive emotion regulation strategies. Mallorquí-Bagué et al. (2017) similarly reported emotion regulation difficulties and maladaptive regulation strategies across eating disorder diagnoses and reported improvements in emotion regulation post-treatment across ED subgroups.

The findings of Rabito-Alcón et al.'s (2021) review provides support for the mediating role of emotion development between childhood trauma and ED pathology. They found significant associations between childhood trauma and eating disorders and identified a variety of mediating factors, including dissociation, alexithymia, emotion dysregulation, anxiety, and depression, and suggest eating disorders could have a variety of functions, including suppressing difficult emotions resulting from trauma. Racine and Wildes's (2015) study also provides evidence for the mediating role of emotions; they found indirect, significant relationships between childhood emotional abuse and AN, with emotion regulation difficulties identified as a significant mediator of this relationship. Svaldi et al., (2012) found that participants with ED diagnoses (across all types) reported higher levels of emotional intensity, less acceptance of emotions, less emotional awareness and clarity and more emotion regulation difficulties, with greater reliance on maladaptive regulation strategies and less use of adaptive emotion regulation strategies in comparison to healthy controls. These findings provide further evidence for the potential importance of emotions (and specifically, alexithymia, beliefs about emotions and emotion regulation difficulties) as mediators for the relationship between childhood trauma and general ED pathology.

While the mediating roles of emotion have been examined in relation to ED pathology, there is yet little understanding of how emotions may be of importance in the relationship between childhood trauma and the EDV, specifically. One qualitative, grounded theory paper thus far has explored this: Morrison et al. (2022) used interviews to explore the EDV, emotions and childhood experiences in

individuals with AN. Their paper outlined how adverse childhood experiences led to individuals feeling unsure and unsafe in their relationships with others, and subsequently resulted in unsafe, confusing, and overwhelming internal worlds. Many described difficulties with emotional regulation, feeling out of control and overwhelmed by emotion. Participants reported that the voice offered safety within this context of relational and internal unsafety; developing as a “guiding light”, helping them to become a better person, and offering comfort. However, this safety was deemed conditional, with voices becoming cruel and abusive when rules were not followed. The EDV was compared to grooming experiences, with the voice using strategies such as isolating the individual, exploiting vulnerabilities, and using threats and bribes to ensure the individual remained reliant and compliant. This paper indicates the potential mediating role of emotional difficulties in the relationship between childhood trauma and the EDV, with the EDV providing support to manage the distress of childhood trauma. It also suggests that the voice experience could be of significance in the broader relationship between traumatic experiences, emotions, and ED pathology.

While Morrison et al. (2022) provides rich, in-depth accounts, a quantitative examination of the importance of emotions, childhood trauma and the EDV could be of benefit; to expand understanding and explore the relevance of this model in a larger sample. Emotional experiences and their explanatory role as mediators between childhood trauma and the EDV has yet to be explored quantitatively. Morrison et al. (2022) also focused more exclusively on Anorexia Nervosa; given research previously has indicated that the EDV and emotional difficulties are common experiences across ED subtypes, the present study seeks to explore the relationships between traumatic childhood experiences, emotional regulation difficulties, negative beliefs about emotional expression and alexithymia and the EDV across ED subgroups.

*Aims:*

- To explore the relationship between traumatic childhood experiences and the eating disorder voice.
- To identify the role of beliefs about emotion, alexithymia, and emotion regulation as potential mediators.

*Hypotheses:*

1. Greater frequency and severity of experiences of childhood trauma (as measured by scores on the Childhood Trauma Questionnaire) will be associated with greater reported power of

the eating disorder voice (as measured by the omnipotence subscale of the Beliefs About Voices Questionnaire).

2. Emotional regulation difficulties, alexithymia, and negative beliefs about emotional expression will predict perceived eating disorder voice power.
3. The relationship between childhood trauma and the eating disorder voice will be mediated by negative beliefs of emotional expression and greater emotion regulation difficulties.

## **2. Method**

### *2.1 Participants*

Participants were recruited via social media and via a student sample at Cardiff University. The study advert (see appendix G) and link to the Qualtrics survey were shared via Twitter, Instagram, and Facebook. To reach the student sample, the study was uploaded to the Experimental Management System (EMS), through which students at Cardiff University are able to complete research to earn credits needed for their studies.

To aid with recruitment and to access as diverse a sample as possible, it was agreed that participants would be eligible for the study if they were over 18 years old, and self-reported experience of an eating disorder voice (described in the advert, for the purpose of this study, as *“an internal commentary which focuses on weight, shape, and diet and how these relate to self-worth. It can be a companion and helpful guide at first to some people, but over time can become degrading and punitive, and can make recovering from eating disorders difficult.”*). Participants were not required to have a diagnosis of an ED, nor have received any formal treatment for one (to allow for exploration of a wider range of experiences). However, the Eating Disorder Examination Questionnaire (EDE-Q) was included to explore symptomatology and ED cognitions, along with demographic questions to ascertain diagnoses and treatment histories.

### *2.2 Procedure*

Participants accessed the survey, created using the programme Qualtrics, via a link in the advert as seen on social media, or via the link provided on the Cardiff University student recruitment site. Participants had to read the information sheet and complete the consent form prior to completing the questionnaires. The first page following the consent form explored demographics; including questions regarding age, gender, sexuality, ethnicity, as well as eating disorder and mental health diagnoses and treatment history. Following completion of demographic information, each questionnaire was presented on a separate page of the survey; the order was randomised, to

account for potential order effects. A debrief page was presented at the end of the survey, or if participants chose to withdraw at any point in the survey (by selecting “I wish to withdraw”, an option presented at the bottom of each survey page). The survey took around 20 minutes to complete, in total.

To compensate for their time, participants were able to provide their email address to enter a prize draw to win a £50 shopping voucher, if they chose. All participants recruited via the student recruitment site were awarded credits for their engagement.

### *2.3 Measures*

#### *Childhood Trauma Questionnaire (CTQ)- Bernstein & Fink (1998)*

A 28-item questionnaire measuring traumatic childhood experiences- participants rate statements about childhood experiences on a 5-point likert scale. It produces 5 subscales- emotional abuse, sexual abuse, physical abuse, emotional neglect, and physical neglect. The CTQ has demonstrated good psychometric properties in eating disorder populations (Pugh et al., 2018). Bernstein et al. (2003) administered the questionnaire to individuals who were dependent on drugs and alcohol, Cronbach’s alpha within this study was .95 for the total scale and demonstrated good test-retest reliability.

#### *Beliefs About Emotions Scale (BAES)- Rimes & Chalder (2010)*

This scale measures beliefs about how acceptable it is to experience and express different emotions. It consists of 12 items, scored on a 7-point likert scale. Rimes & Chalder’s (2010) examination of the scale showed good internal consistency, with a Cronbach’s alpha of .91. Construct validity of the scale was also supported by the finding that individuals with Chronic Fatigue Syndrome (CFS) scored significantly higher than healthy controls, consistent with clinical reports and the cognitive model for CFS (Rimes & Chalder, 2010).

#### *Difficulties in Emotion Regulation Scale (brief version- DERS-16)- Bjureberg et al. (2016)*

This scale measures difficulties in regulating emotions, specifically; nonacceptance of negative emotions (three items), inability to engage in goal-directed behaviours when distressed (three items), difficulties controlling impulsive behaviours when distressed (three items), limited access to emotion regulation strategies perceived as effective (five items), and lack of emotional clarity (two items). The DERS-16 is a short-form version of the 36-item DERS (Gratz & Roemer, 2004) developed by Bjureberg et al. (2016). Bjureberg et al. (2016) examined reliability and validity of the short-form

scale in clinical and non-clinical samples; they found that scores on the DERS-16 correlated significantly with the DERS, and the DERS-16 showed good internal consistency, with a Cronbach's alpha of .92. The short form was selected for the current study to reduce the time it takes participants to complete the battery of tests.

*Beliefs About Voices Questionnaire (BAVQ)*- (Chadwick et al., 2000)

This is a 35-item questionnaire which explores appraisals of voice characteristics (voice benevolence, malevolence, and omnipotence), and engagement with and behavioural responses to the voice(s). Only responses related to appraisals of the voice (specifically, omnipotence) were utilised in the analysis for the present study. This scale was adapted to specify the eating disorder voice, instead of "voices", for the purpose of this study. This scale has been shown to have acceptable psychometric properties within ED populations (e.g. Noordenbos et al., 2014; Pugh et al., 2018). Cronbach's alpha for the omnipotence scale within Pugh et al. (2018) was 0.71, indicating acceptable internal consistency.

*Topography of Voices Scale*- Hustig & Hafner (1990)

The scale is a brief, 5-item self-report scale which measures frequency, volume, clarity and intrusiveness, and distress caused by the voice(s). This scale, too, was adapted to specify the eating disorder voice, instead of "voices". It has been found to have good test-re-test reliability (e.g. Paulik, 2012).

*Toronto Alexithymia Scale (TAS-20)*- Bagby et al. (1994a, b)

This is a 20-item questionnaire exploring Alexithymia. It can produce 3 subscales: identifying feelings, communicating feelings, and external thinking, as well as a total score. It is the third iteration of the TAS, and the most commonly used (Haviland, 2016). While results have been mixed with regard to reliability and validity, with some studies finding the "external thinking" subscale unreliable and not quite comprehensive of the full picture, overall, most studies have found adequate psychometric properties (Bagby & Taylor, 2020).

*Eating Disorders Examination Questionnaire (EDE-Q, version 6)*- Fairburn & Beglin (2008)

The EDE-Q is a 28-item measure of eating pathology. It consists of four subscales measuring cognitions: weight concern, shape concern, eating concern and dietary restriction. The frequencies of eating disorder behaviours over the past 28 days are also measured. The EDE-Q has demonstrated good psychometric properties in eating disorder samples (Berg et al., 2012; Mond et al., 2004). Berg

et al.'s (2012) review found research supports the reliability and validity of the measure for assessing eating disorder symptoms.

#### *2.4 Ethics*

Full ethical approval was granted by the Cardiff University ethics committee prior to recruitment (Appendix H). Participant safety was given considerable thought, as the psychological impact of answering questionnaires relating to trauma, emotions and eating disorders has the potential to be high. To ensure informed consent, the information sheet (appendix I) included clear information regarding the nature of the questionnaires, as well as recommendations for participants to ensure they consider their own wellbeing by, for example, having someone around they can seek support from when completing the questionnaires, if needed. A comprehensive consent form (Appendix J) outlining right to withdraw, potential harm and benefits of completing the study and data management was also included. A debrief page (Appendix K) was included at the end, with support links and phone numbers as well as two calming YouTube videos they could watch if they chose. Researchers' contact information was also provided, if participants had any questions or concerns following completion of the study. Participants completing the survey via the Cardiff University student recruitment site had a separate debrief page, with additional Cardiff University student support information (see appendix L). Additionally, to ensure those who chose to withdraw were able to access the debrief page for support if needed, at the bottom of each page of the survey there was an "I wish to withdraw" option, which, when selected, would automatically end the survey, and take the participant to the debrief page.

Two service user representatives, one of whom had lived experience of an eating disorder, were involved in the initial development of the survey, including writing of the information sheet, consent form and debrief form. Changes were made based on their feedback, with alterations to language suggested to aid comprehension and improve clarity.

#### *2.5 Data analysis*

Correlation analysis exploring relationships between each variable were conducted. The first two hypotheses, investigating whether childhood trauma (as measured by the Childhood Trauma Questionnaire) and emotion difficulties (as measured by the Toronto Alexithymia Scale, the Difficulties in Emotion Regulation Scale and the Beliefs about Emotions Questionnaire) predicted appraisals of EDV power (as measured by the Beliefs About Voices Questionnaire omnipotence subscale), were explored using multiple regression analyses, with simultaneous entry. The third

hypothesis (interested in the mediating role of emotions in the relationship between childhood trauma and the EDV) was tested using a mediation model within the multiple regression framework. Hayes's (2013) PROCESS macro in SPSS was utilised to conduct the mediation analysis, using model 4 (the mediation model).

### **3. Results**

In total, the survey received 279 responses: 170 via social media, 109 via the student recruitment page. Sixty of these respondents had not completed any of the survey beyond the consent form, and thus were automatically excluded, leaving 219 cases. Missing data analyses indicated that a complete case analysis would result in losing 71 cases, 32.42% of the sample. Little's (1988) test of data Missing Completely at Random (MCAR) was conducted, to assess for patterns in missing data which could bias analyses; it was not significant,  $\chi^2(2292)=2258.706, p=.686$ . This non-significant result indicates there is no evidence to suggest that the data were not missing completely at random. In other words, no pattern to missing data appeared to exist which may bias analyses should cases with missing data be excluded. Given the large amount of data missing, imputation had potential to bias the results (Jakobsen et al, 2017). Therefore, listwise deletion of all cases with missing data was deemed most appropriate.

The final sample included 148 participants: 76 from social media, and 72 from the student recruitment page. A-priori power analyses, produced with G\*Power (Faul et al., 2007) indicated a sample of 138 or more was required for adequate power to detect a significant finding in a multiple regression model with 5 predictors, with 80% likelihood of detecting a significant finding if it exists ( $p<.05$ ) and a medium effect size. Thus, the sample size was adequately powered for the analyses conducted.

Five participants were missing just one question on the EDE-Q each. As indicated in the scoring guide for the EDE-Q (Fairburn et al., 2014) subscales and global scores can still be calculated if data are missing; the mean calculated by adding what data was collected and dividing by the number of completed items. It was therefore decided these participants would be included in the analysis, with their mean scores calculated thus.

#### *3.1 Participant demographics*

Participants were aged 18-56 years, the mean age 23.68 (SD=7.90). Participants' gender identity, sexual orientation and ethnicity were also collected (see table 1).

		N	%
Gender	Female	132	89.2%
	Male	2	1.4%
	Non-binary	10	6.8%
	Trans male	3	2.0%
	Trans female	0	-
	Prefer not to say	0	-
	Other	1	0.7%
Sexual orientation	Heterosexual	88	59.5%
	Bisexual	30	20.3%
	Gay/ homosexual	11	7.4%
	Asexual	6	4.1%
	Pansexual	5	3.4%
	Prefer not to say	5	3.4%
	Other	3	2.0%
Ethnicity	White	128	86.5%
	Black	0	-
	Asian	11	7.4%
	Mixed ethnicity	7	4.7%
	Other	1	0.7%
	Prefer not to say	1	0.7%

*Table 1: Participant demographics*

Data on participants' eating disorder diagnoses, treatment, and other mental health diagnoses and treatment were also recorded (see table 2). Of those who self-reported diagnoses of an ED, several different diagnoses were reported (see table 3). Two participants had selected "not sure" for whether they had a diagnosis of an ED but had provided an ED diagnosis in the text box; these diagnoses were included in table 3 (one reported Bulimia Nervosa, the other OSFED). One participant selected "yes" for a diagnosis but had written the year of diagnosis instead of the diagnosis received. Therefore, there are 75 participants with listed diagnoses included in table 3.

Other diagnoses reported by participants included anxiety, generalised anxiety, agoraphobia, social anxiety, emetophobia, obsessive-compulsive disorder (OCD), post-traumatic-stress disorder (PTSD) and complex PTSD, depression, major depressive disorder (MDD), emotionally unstable personality disorder (EUPD), Bipolar disorder, Autism Spectrum Condition (ASC) and Attention-Deficit Hyperactive Disorder (ADHD).

		N	%
Eating disorder diagnosed	Yes	74	50%
	No	64	43.2%
	Not sure	10	6.8%
Currently undergoing treatment for an ED	Yes, in the NHS	24	16.2%
	Yes, privately	11	7.4%
	No	113	76.4%
Previous treatment for an ED	Yes, in the NHS	54	36.7%
	Yes, privately	19	12.9%
	No	74	50.3%
Other mental health diagnoses	Yes	77	52.0%
	No	56	37.8%
	Not sure	15	10.1%
Current or previous treatment for other mental health diagnoses	Yes, in the NHS	52	35.1%
	Yes, privately	26	17.6%
	No	70	47.3%

*Table 2: Participant Eating Disorder and other mental health diagnoses and treatment.*

Diagnosis	N	%
Anorexia Nervosa	48	64%
Bulimia Nervosa	3	4%
Anorexia Nervosa- Restrictive and binge-purge subtypes	1	1.3%
Anorexia Nervosa- restrictive subtype	1	1.3%
Anorexia Nervosa and Bulimia Nervosa	4	5.33%
Atypical Anorexia Nervosa	5	6.67%
EDNOS/ OSFED	3	4%
ARFID	2	2.67%
Anorexia Nervosa and atypical Bulimia Nervosa	1	1.3%
Atypical Anorexia Nervosa and Bulimia Nervosa	1	1.3%
Body Dysmorphic Disorder and emerging Anorexia Nervosa	1	1.3%
Anorexia Nervosa, restricting, atypical Anorexia Nervosa	1	1.3%
Atypical Bulimia Nervosa, Binge-Eating Disorder	1	1.3%
Anorexia Nervosa, and then atypical Anorexia Nervosa	1	1.3%
OSFED and Bulimia Nervosa	1	1.3%
Restrictive Eating Disorder	1	1.3%

*Table 3. Diagnoses reported by participants.*

Analyses comparing differences between participants recruited from social media and the student recruitment page indicated significant difference in EDE-Q global score  $t(146)=3.035, p=.003$ . There were also significant differences between the social media and student recruitment page for the BAVQ omnipotence scale ( $t(146)= 5.341, p<.001$ ); as well as the CTQ scores for emotional abuse

( $t(146)= 2.517, p<.001$ ); emotional neglect ( $t(146)=4.712, p=.012$ ); physical neglect ( $t(146)= 2.284, p<.001$ ) and the topography of voices (TOV) scale ( $t(146)= 5.202, p<.001$ ).

#### *EDE-Q scores*

A majority (67.57%) of participants scored above clinical cut off (2.8) on the EDE-Q global score. The overall mean score for each EDE-Q subscale and the global score was above clinical cut off, with the exception of the eating concern subscale, which was just below (see table 4 for details).

#### *3.2 Correlations*

Table 4 depicts how each variable correlates, with use of Pearson's R correlation, as data met the required assumptions for parametric testing.

#### *3.3 Relationship between childhood trauma and the eating disorder voice*

A simultaneous linear regression was conducted to explore the relationships between different forms of childhood trauma and eating disorder voice omnipotence (as a measure of voice power), whilst controlling for the other forms of abuse. Data met the required assumptions for multiple regression. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.787. Homoscedasticity and linearity were confirmed, assessed by visual inspection of a plot of studentised residuals versus unstandardised predicted values. No data points appeared to have excessive influence, as measured by Cook's Distance, nor did any data point appear to be an outlier, or to have high leverage points. Residuals also appeared to be approximately normally distributed, as indicated by the P-P plots.

Initially, all the subscales of the childhood trauma questionnaire (emotional, sexual, and physical abuse, and emotional and physical neglect) were entered into the model simultaneously. However, while tolerance and VIF statistics were not above threshold for multicollinearity, emotional abuse was highly significantly correlated with emotional neglect and physical neglect (both correlations above .7), suggesting multicollinearity could be a concern. It was decided, therefore, to remove emotional and physical neglect from the model. This had a significant impact; with the inclusion of emotional and physical neglect, no form of abuse significantly predicted voice omnipotence. However, with the two variables removed, emotional abuse was found to be a significant predictor of voice omnipotence, whilst controlling for physical and sexual abuse:  $t(144)=2.155, p=.033$ . Physical abuse ( $t(144)= -.750, p=.454$ ), and sexual abuse ( $t(144)= .083, p=.934$ ) remained non-significant predictors.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. CTQ emotional abuse	12.90	6.00	-													
2. CTQ physical abuse	7.07	4.18	.615**	-												
3. CTQ sexual abuse	8.10	5.76	.424**	.539**	-											
4. CTQ emotional neglect	12.47	5.47	.731**	.504**	.331**	-										
5. CTQ physical neglect	8.39	3.90	.725**	.662**	.443**	.691**	-									
6. TAS	59.03	12.98	.265**	.197*	.202*	.216**	.274**	-								
7. DERS	55.76	13.00	.252**	.138	.154	.157	.141	.540**	-							
8. BAEQ	60.80	13.31	.267**	.175*	.137	.216**	.214**	.516**	.542**	-						
9. BAVQ-omnipotence	15.18	4.06	.177*	.059	.058	.166*	.153	.187*	.370**	.279**	-					
10. ToV	16.20	3.33	.126	.087	.011	.237**	.062	.162**	.292**	.215**	.549**	-				
11. EDEQ-restraint	2.92	1.83	.152	.148	.093	.239**	.217**	.277**	.304**	.287**	.446**	.533**	-			
12. EDEQ-eating concern	2.68	1.63	.308**	.217**	.143	.291**	.276**	.412**	.385**	.314**	.470**	.534**	.760**	-		
13. EDEQ-shape concern	4.19	1.52	.332**	.222**	.188*	.301**	.266**	.354**	.389**	.331**	.424**	.506**	.737**	.730**	-	
14. EDEQ-Weight concern	3.90	1.64	.308**	.235**	.213**	.293**	.250**	.289**	.302**	.304**	.425**	.469**	.731**	.724**	.897**	-
15. EDEQ-Global	3.42	1.50	.298**	.225**	.173*	.308**	.277**	.365**	.379**	.339**	.487**	.564**	.898**	.886**	.922**	.920**

Table 4. Correlation matrix

\*=  $p < .05$

\*\*=  $p < .01$

### *3.4 Relationship between emotion regulation and the eating disorder voice*

A simultaneous linear regression was conducted to explore the relationships between difficulties in emotion regulation, alexithymia and beliefs about emotions and eating disorder voice omnipotence (as a measure of voice power), whilst controlling for the other emotional difficulty measures. Again, data met the required assumptions for multiple regression.

Alexithymia, beliefs about emotions and emotion regulation statistically significantly predicted voice omnipotence:  $F(3, 144) = 8.325, p < .001$ . However,  $R^2$  for the overall model was 14.8%, adjusted  $R^2$  was 13%, indicating only small effect.

Emotion regulation was the only significant predictor of voice omnipotence when controlling for the other emotion measurements:  $t(144) = 3.372, p < .001$ . Alexithymia did not predict voice omnipotence:  $t(144) = -.613, p = .541$ ; nor did beliefs about emotions:  $t(144) = -1.351, p = .179$ .

### *3.5 Mediating role of emotions*

As emotional abuse was established as a significant predictor of voice omnipotence (both in previous research and the regression analyses of the present study), further analysis was conducted to explore the potential mediating role of emotions.

Hayes's (2013) PROCESS macro via bootstrapping method was utilised to explore emotion regulation, alexithymia, and beliefs about emotion as mediators between childhood emotional abuse and voice omnipotence (indirect effect = path a x path b, a = the effect of childhood trauma on emotion regulation, alexithymia, and beliefs about emotion, b = the effect of emotion regulation, alexithymia, and beliefs about emotion on voice omnipotence). The indirect effect is only statistically significant if its bias corrected 95% confidence intervals (CI) around the indirect effect from 5000 bootstrap re-samples excluded zero.

The findings of the mediation analyses indicated that only scores on the DERS, that is, emotion regulation, was a significant mediator for childhood emotional abuse and voice omnipotence. There was a significant total effect between childhood emotional abuse and voice omnipotence ( $b = 0.1207, p = 0.0312$ ), and path a (i.e. emotional abuse on emotion regulation difficulties) ( $b = 0.5105, p = 0.0020$ ) and path b (i.e. emotion regulation difficulties on voice omnipotence) ( $b = 0.1084, p = .0013$ ) were both significant. When emotion regulation entered the relationship between childhood emotional

abuse and voice omnipotence, the effect was significant ( $b=.0812$ , CIs: [0.0219, 0.1566]). (See figure 1 for mediation model.)

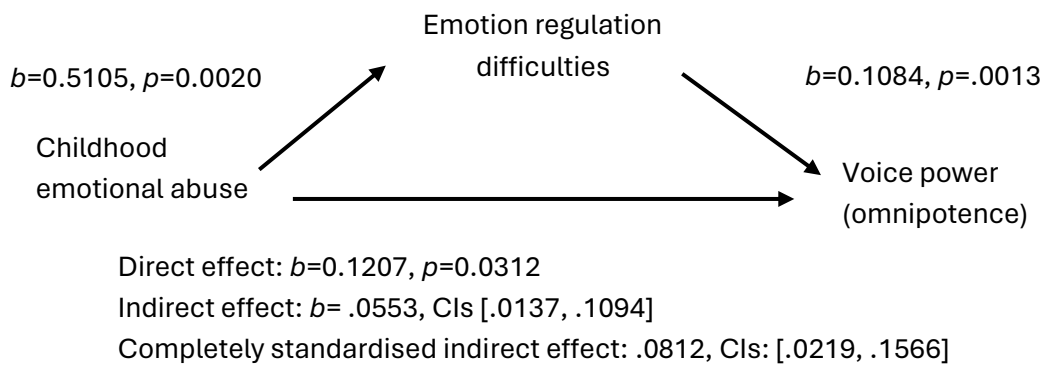


Fig. 1 Mediation model for childhood emotional abuse, emotion regulation difficulties and voice omnipotence.

#### 4. Discussion

##### 4.1 Summary of findings

The findings of the present study partially support the hypotheses proposed; childhood trauma (specifically, emotional abuse experiences) significantly predicted voice power (as measured by the voice omnipotence subscale of the BAVQ), and emotion regulation was a partial mediator for this. Emotion regulation, but not beliefs about emotion or alexithymia, significantly predicted higher ratings of voice omnipotence, although only a small effect was observed. Voice omnipotence was also significantly positively correlated with all subscales (including global) of the EDE-Q. Whilst directionality cannot be determined, these correlations echo findings of previous research identifying an association between voice power and ED pathology (Pugh et al., 2018).

The findings of significant links between childhood emotional abuse and EDV power add to the as-yet-limited evidence base for the theory that childhood adversity may be linked to voice-related experiences within ED populations (e.g. Pugh et al., 2018; Morrison et al., 2022). The findings also more broadly expand on previous research indicating ED pathology (in this case, the EDV) is associated with childhood adversity through the mediating influence of emotion regulation difficulties (e.g. Aldao et al., 2016; Oldershaw et al., 2015; Racine and Wildes, 2015; Mallorquí-Bagué et al., 2017; Rabito-Alcón et al., 2021).

The present study provides some evidence in support of the theorised role of emotionally invalidating environments (which is not unique to emotional abuse, but is most commonly

associated with this form of abuse) in ED pathology (Corstorphine, 2006; Waller et al., 2007), and could indicate that a mechanism through which emotionally invalidating environments and associated emotion regulation difficulties impact ED pathology is the EDV. As theorised by Morrison et al. (2022), the EDV may play a unique role in offering (conditional) safety, support, and comfort during periods of relational and internal unsafety (including associated difficulties with emotion regulation). The findings of the present study provide preliminary support for this theory; given the significant relationships between emotional abuse, emotion regulation difficulties and EDV power, as well as the significant positive correlations between these factors and EDE-Q scores. Although no directional conclusions can be drawn; further investigation of the unique significance of the EDV is warranted based on the current findings.

Childhood emotional abuse (CEA) specifically was the only CTQ subscale which was directly associated with the EDV. This echoes findings of Pugh et al.'s (2018) study, which identified that dissociation partially mediated the relationship between CEA and the EDV, but no other forms of abuse. There are a few possible reasons for this; firstly, CEA has been found to be of particular relevance to ED pathology (e.g. Vajda & Láng, 2014; Guillaume et al., 2016), and may be of unique relevance to the EDV specifically, based on qualitative research indicating the EDV can mimic patterns of emotional abuse in its interactions with individuals (e.g. Tierney & Fox, 2010; 2011; Morrison et al., 2022). Additionally, research has found that the mechanisms through which different forms of trauma influence ED pathology appear to differ across types of traumas. For example, an individual's relationship with their body may be of particular importance in childhood sexual abuse (e.g. Preti et al., 2006). Thus, the EDV and its emotion regulation functions may be more particularly relevant to CEA, with other mechanisms at work in other forms of abuse. These findings indicate further investigation of the relationships between childhood trauma and the EDV experience could be important in developing understanding of this commonly experienced feature of EDs.

While emotion regulation significantly predicted EDV omnipotence and was a significant mediator between CEA and EDV omnipotence, beliefs about emotion and alexithymia were not found to be significant predictors or mediators. There are several potential explanations for this. Firstly, it is possible that emotion regulation is the most important mediator, and so when the analysis was run whilst controlling for emotion regulation, alexithymia and beliefs about emotion were no longer significant. Indeed, when not controlling for other variables, both the alexithymia and beliefs about emotions measurements were significantly positively correlated with voice omnipotence (as

reported in the correlation matrix). Based on theory as discussed in the introduction (e.g. Corstorphine, 2006; Waller et al., 2007; Oldershaw et al., 2019), this perhaps makes sense; alexithymia and beliefs about emotion may be contributory factors of emotion regulation difficulties, and so are perhaps of less direct relevance to the EDV. Additionally, the inclusion of all eating disorder and disordered eating experiences may have influenced these findings. While all participants had experience of an EDV, a range of eating difficulties were explored, and diagnosis was not a requirement. Evidence suggests that emotion regulation difficulties are common across ED diagnoses and across psychopathology more generally (e.g. Svaldi et al., 2012), whereas some research indicates nuance in alexithymia and beliefs about emotions across ED subtypes. For example, Nowakowski et al.'s (2013) review of the literature found variation in conclusions across studies; but found evidence to suggest alexithymia is more directly associated with AN and restrictive eating difficulties, as opposed to binge-purge types. Danner et al.'s (2014) study found differences in suppression of emotion between ED subgroups, with those with restrictive presentations significantly more likely to suppress emotion. The authors highlight the potential importance of exploring ED subtypes separately, given the nuance in presentation. Thus, it is possible that alexithymia and beliefs about emotion may vary across ED diagnoses, with emotion regulation a more consistent difficulty across eating pathology. It was not possible in the present study to run the analyses for individuals with AN separately, due to the smaller number of participants in the sample with self-reported diagnosis of AN. However, future research may seek to explore if this mediation model differs within clinical samples of individuals with differing ED diagnoses.

#### *4.2 Strengths, limitations and future research*

There were several limitations to the present study. Firstly, whilst the included sample was adequately large, it lacked diversity and included predominantly younger, white, cisgender females. The current sample especially is lacking in representation of different genders and ethnic minorities; not an uncommon problem in ED research, and something which requires addressing (Halbeisen et al., 2022). Future research into the EDV could benefit from examining this phenomenon in more diverse populations than the present study.

Secondly, it was beyond the scope of the present study to collect data from a clinical sample; only a community sample was surveyed. Only 50% of the participants self-reported an ED diagnosis, and 23.6% had accessed treatment for an ED, past or present. Mean scores for the EDE-Q, however, indicated that a majority of participants were above clinical cut off (2.8; Fairburn, 2008). The present

study findings suggest further analysis, within a clinical sample, could be warranted. In addition, due to missing data a large proportion of data was removed; while Little's (1988) test of data Missing Completely at Random suggests there was no pattern to who completed the survey and who did not, this is of importance to consider, as a lot of experiences were potentially missed. Samples recruited through social media and through Cardiff University also differed significantly in scores on all measures included: the sample, therefore, is quite heterogeneous.

Thirdly, the only measure of childhood trauma utilised was the Childhood Trauma Questionnaire, which focuses specifically on child abuse experiences within the family. This potentially meant other trauma experiences were missed. Participants in Morrison et al.'s (2022) qualitative study discussed significance of traumatic experiences outside of abuse, such as traumatic school and peer-related experiences, in relation to the eating disorder voice; thus, future research could benefit from including more comprehensive examinations of childhood trauma experiences. Future research may also seek to develop and evaluate tools to measure the EDV more specifically; the current study utilised voice-hearing questionnaires, with the wording adapted. Development of more specific tools for measuring EDV characteristics could be beneficial for furthering research into this phenomenon and assessing voice experiences clinically.

Additionally, no conclusions regarding causality can be drawn, given the cross-sectional nature of the study. Directionality is also not possible to establish; in order to examine this further, longitudinal investigations are required. The results and interpretations of findings should be considered carefully within this context.

Other factors, alongside emotion regulation, likely play a role in aetiology of the EDV. Morrison et al.'s (2022) paper explored experiences of unsafety beyond difficulty with emotion; for example, the importance of identity and sense of self within this population. Oldershaw et al.'s (2019) paper outlines how emotional difficulties can result in a 'lost sense of emotional self', with AN becoming a way of both managing emotion difficulties and providing a 'false sense of self' (Bruch, 1994). Morrison et al.'s (2022) study found that participants reported the Anorexic Voice provided them with an acceptable identity, countering the belief that they are a bad person. The role of identity in the EDV could be important to investigate in future research. Additionally, Cortes-Garcia et al. (2019) suggested perfectionism and emotion dysregulation were two mediating factors between insecure attachment and AN. Morrison et al., (2022) found that the voice can adopt perfectionistic standards, and proposes that the voice may be a mediator in the relationship between perfectionism and AN.

Identity, perfectionism and associated sense of self-worth, while beyond the scope of the present study, may be important factors, alongside emotion regulation, in the EDV; future research could seek to explore this further.

#### *4.3 Clinical implications*

The present study adds to the evidence of the importance of trauma and the EDV in ED pathology. As such, screening for trauma experiences, in particular emotional abuse, could be indicated; in particular when an individual reports experience of an EDV. This could be incorporated into formulation, to support understanding of these contributory factors.

In addition, the findings support the importance of consideration of emotion regulation in conceptualisation and treatment of EDs. Emotion regulation difficulties may be particularly important to explore for individuals who report history of childhood emotional abuse and/or emotionally invalidating environments (e.g. Corstorphine, 2006), and could be important to address in treatment. The current research supports this, and also indicates further exploration of emotion regulation may be beneficial when individuals report a voice, in particular when that voice is experienced as very powerful.

This study added to the growing body of evidence that EDs (and specifically the EDV) have important emotion regulation functions. Clinicians could also benefit from considering this in treatment; both in terms of the impact on motivation to engage in treatment which might directly contradict the EDV, as well as the potential emotional impact of resisting the voice when it perhaps provides important emotion regulation functions. The EDV could be a way of managing the emotions associated with past traumatic experiences, and clients may need support in processing past trauma and effectively regulating emotions in other ways, for more effective treatment outcomes.

#### *4.4 Conclusion*

The present study has found evidence in support of the association between childhood emotional abuse and the eating disorder voice experience, and for the mediating role emotion regulation plays in this relationship. The findings could be interpreted to indicate an important role of the EDV within the already-established relationship between childhood emotional abuse, emotion regulation difficulties and ED pathology more broadly. Further research is required to better understand the unique role of the EDV; the present study adds to the growing evidence base supporting its relevance in understanding, working with and treating eating disorders.

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## Appendices

### Appendix A: IJED submission guidelines

#### 1. SUBMISSION AND PEER REVIEW PROCESS

Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online at: [mc.manuscriptcentral.com/ijed](https://mc.manuscriptcentral.com/ijed).

For help with submissions, please contact: [ijed@wiley.com](mailto:ijed@wiley.com).

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#### Free Format Submission

The *International Journal of Eating Disorders (IJED)* offers [Free Format submission](#) for a simplified and streamlined submission process. Before you submit, you will need:

- An ORCID, freely available at <https://orcid.org>. Please refer to [Wiley's resources on ORCID](#).
- Your manuscript: this should be an editable file including the [title page](#), [abstract](#), [main text](#), [figures](#), and [tables](#), or separate files—whichever you prefer. All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Your manuscript may also be sent back to you for revision if the quality of English language is poor.

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- Authors must indicate at submission whether the paper has been made available as a preprint.
- Authors of accepted papers that were made available as preprints must be able to assign copyright to IJED or agree to the terms of the Wiley Open Access agreement and pay the associated fee.
- Because the measurable impact of an article is diminished when citations are split between the preprint and the published article, authors are required to:
  - Update the entry on the preprint server so that it links to and cites the DOI for the published version; and
  - cite only the published article themselves.

## Open Science Initiatives

Recognizing the importance of research transparency and the sharing of data, materials, and code to cumulative research, the IJED encourages but does not require the following Open Science practices.

**Registered Reports.** For the foreseeable future, the IJED will no longer consider nor publish Stage 1 Registered Reports. Our commitment to In-Principle-Acceptance decisions made on Stage 1 Registered Reports will still be honored and their Stage 2 counterparts will be published. See the Registered Reports [Stage 2 Author Guidelines](#) for details and [Stage 2 checklists](#).

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**Open Research Badges.** This journal is part of Wiley's [Open Research Badges](#) program. In partnership with the non-profit Center for Open Science (COS), IJED offers authors access to the following three Open Research Badges to be published on their article:



The **Open Data Badge** recognizes researchers who make their data publicly available, providing sufficient description of the data to allow researchers to reproduce research findings of published research studies. An example of a qualifying public, open-access database for data sharing is the Open Science Framework repository. See the registry of research data repositories at <https://www.re3data.org/>. If it is not possible or advisable to share data publicly please provide an explanation of such circumstances in the Alternative Note section of the disclosure form. The information authors provide will be included in the article's Open Research section.



The **Open Materials Badge** recognizes researchers who share their research instruments and materials in a publicly-accessible format, providing sufficient information for researchers to reproduce procedures and analyses of published research studies. In the field of Eating Disorder research, a qualifying public, open-access database of research instruments and materials is the COS <https://www.cos.io>.



The **Preregistered Badge** recognizes researchers who preregister their research plans (research design and data analysis plan) prior to engaging in research and who closely follow the preregistered design and data analysis plan in reporting their research findings. The criteria for earning this badge thus include a date-stamped registration of a study plan in such venues as the Open Science Framework (<https://osf.io>) or Clinical Trials (<https://clinicaltrials.gov>) and a close correspondence between the preregistered and the implemented data collection and analysis plans.

These optional badges are further incentive for authors to participate in the Open Research movement and thus to increase the visibility and showcase the transparency of their research. More information is available from the Open Science Framework [wiki](#).

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By submitting a manuscript your name, email address, affiliation, and other contact details the publication might require, will be used for the regular operations of the publication.

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## Funding

Authors should list all funding sources in the Acknowledgments section. Authors are responsible for the accuracy of their funder designation. Please check the [Open Funder Registry](#) for the correct nomenclature.

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All listed authors should have contributed to the manuscript substantially and have agreed to the final submitted version. Review [editorial standards](#) and scroll down for a description of authorship criteria.

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## DETAILED MANUSCRIPT PREPARATION GUIDANCE

### Title Page

The Title Page of the manuscript should comprise:

- A brief informative title containing the major keywords. The title should not contain abbreviations (see [Wiley's best practice SEO tips](#)).
- All co-author details, including affiliation and email address, and ORCID identifier where possible.
- Up to ten keywords.
- If published already as a preprint, a link to the preprint server.
- An author contributions statement that succinctly indicates how each author contributed to the piece of work, using the [CRediT "Contributor Roles Taxonomy"](#). Author contributions are also required within the submission form of both original and revised submissions.
- Any applicable statements relating to our ethics and integrity policies, such as:
  - data, materials and code availability statement
  - funding statement or other acknowledgements of support
  - conflict of interest disclosure
  - permission to reproduce material from other sources

## Abstract

The Abstract provides a succinct summary of the article content. The recommended format and word limit vary by [article type](#).

Structured abstracts have a recommended maximum of 250 words and should be organized into: **Objective:** state the primary purpose of the article, or major question addressed in the study. **Method:** indicate the sources of data, give brief overview of methodology, or, if it is a review article, how the literature was searched and articles were selected for discussion. For research-based articles, briefly note study design, how participants were selected, and major study measures. If your data are based on a preregistered study, provide the preregistration number or link. **Results:** summarize the key findings. **Discussion:** indicate main clinical, theoretical, or research applications/implications.

## Main Text File

The main text file should be in MS Word and include the following content and recommended formatting:

- Main body, formatted as Introduction, Method, Results, and Discussion, as recommended by the International Committee of Medical Journal Editors (ICMJE) ([J. Pharmacol. Pharmacother. 2010, 1, 42-58](#)). Exceptions to these formatting recommendations include Commentaries, Forum articles, and Perspective articles.
- A Public Significance statement (< 70 words) that explains why this research is important and is written in plain English for a general, educated public.
- Figure titles should be supplied as a complete list in the text.

## References

Please refer to [article types](#) regarding the number of permissible references.

This journal offers Free Format submission and authors may submit using their preferred referencing style, as long as consistency is applied throughout the manuscript.

The typesetter will apply the American Psychological Association reference style on manuscripts accepted for publication. If authors wish, they may review [reference style guidelines](#) prior to submission.

## Tables

Tables should include a descriptive title and, if needed, footnotes defining abbreviations and any other information critical to interpreting the data shown.

## Figures

Figures should have legends (and if needed, notes) that succinctly describe the information being displayed. Figures should be uploaded in the highest resolution possible.

## Supporting Information

Supporting Information is information that is supplementary and not essential to the article but provides greater depth and background. Examples include more detailed descriptions of therapeutic protocols, results related to exploratory or post-hoc analyses, and elements otherwise not suitable for inclusion in the main article, such as video clips, large sections of tabular data, program code, or large graphical files. It is *not* appropriate to include in the Supporting Information any text that would normally go into a Discussion section; all discussion-related material should be presented in the main article.

Authors should mention the Supporting Information in the text of the main article to provide context for the reader and highlight where and how the supplemental material contributes to the article. View [Wiley's FAQs](#) on Supporting Information.

Supporting (supplemental) information should be submitted in separate files.

If accepted for publication, Supporting Information is hosted online together with the article and appears without editing or typesetting.

*Note: Authors are encouraged to utilize publicly available data repository for data, scripts, or other artefacts used to generate the analyses presented in the paper; in such cases, authors should include a reference to the location of the material in the Method section (rather than in Supporting Information).*

## Additional Guidance Regarding Manuscript Preparation

The IJED reaches a global audience. Authors are encouraged to consider the implications of their research for populations, settings, or policies beyond those applicable to their own local circumstances.

For studies involving human participants, to aid comprehensive and consistent reporting across regions/countries and cultures, the IJED provides [Demographic Characteristics Reporting Guidelines](#).

Authors for whom English is not their first language are encouraged to seek assistance from a native or fluent English speaker to proofread the manuscript prior to submission.

Footnotes to the text are not allowed and any such material should be incorporated into the text as parenthetical matter.

Terminology. Authors should refrain from using terms that are stigmatizing, discriminatory, or ambiguous. The journal rejects stand-alone nouns that refer to individuals by their diagnosis or condition (e.g., "anorexics," "obese," "diabetics," etc.), race and ethnicity identification (e.g., "Whites," "Hispanics," etc.), or presumed disadvantaged status ("minorities"). "Participants" should be used in place of "subjects." For further explanation

and examples, see "*Speaking of that: Terms to avoid or reconsider in the eating disorders field*" (DOI: [10.1002/eat.22528](https://doi.org/10.1002/eat.22528).)

**Abbreviations:** Only abbreviate terms if they are used repeatedly and the abbreviation is helpful to the reader. Initially, use the word in full, followed by the abbreviation in parentheses. Thereafter, use the abbreviation only.

**Units of measurement:** Please use the International System of Units. Access [www.bipm.fr](http://www.bipm.fr) for more information.

**Numbers** under 10 should be spelt out, except for: measurements with a unit (8 mmol/L); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).

**Trade Names:** Chemical substances or drugs should be referred to by the generic name only, not by trade names. For proprietary drugs, the proprietary name and the name and location of the manufacturer should be added in parentheses.

## **Systematic Reviews, Meta-Analyses and Scoping Reviews**

Described below are the reporting requirements for all review paper types. Please be sure to read each section prior to submission, **AS WELL AS THE LAST SECTIONS ENTITLED "Required Elements for all IJED Review Papers" and "Recommended Elements for all IJED Review Papers"**. These last sections describe elements that are common to IJED systematic reviews, meta-analyses, and scoping reviews.

**Systematic Reviews and Meta-Analyses:** These articles critically review the status of a given research area and propose new directions for research and/or practice. Both systematic and meta-analytic review papers are welcomed if they review a literature that is advanced and/or developed to the point of warranting a review and synthesis of existing studies. Reviews of topics with a limited number of studies are unlikely to be deemed as substantive enough for this IJED review paper type. The journal does not accept papers that merely describe or compile a list of previous studies without a critical synthesis of the literature that moves the field forward.

All systematic reviews and meta-analyses must follow the [PRISMA Guidelines](#), summarized in the Page et al. (2021) article entitled "*The PRISMA 2020 statement: an updated guideline for reporting systematic reviews*" (J. Clin. Epidemiol.). See [translations of PRISMA documents](#). Authors who choose this contribution type must include the [2020 PRISMA Flow Diagram](#) and [complete the PRISMA Checklist upon submission of the manuscript](#). During the submission process, authors will be prompted to confirm they have followed the Review checklist in the submission form. The rationale for any unchecked items on the Review Checklist must be explicitly described in the accompanying Cover Letter.

**Scoping Reviews:** These articles are a knowledge synthesis that follows a systematic and predetermined review strategy to identify gaps in a literature, the nature of evidence or methods used for a particular research topic, and/or the extent of evidence on a particular research topic. These types of reviews are distinct from systematic reviews and meta-

analyses which seek to answer specific research questions through a critical analysis of the literature. A key consideration in the review of IJED scoping reviews is determining whether a scoping review or a systematic review or meta-analysis is more appropriate for the research question. Scoping reviews should therefore provide very clear statements of the need and the goals and objectives of the scoping review to ensure clarity in article purpose and appropriateness for an IJED Scoping Review. These reviews should also explicitly state why a scoping review was chosen over a systematic review or meta-analysis. Authors who are unsure if a scoping or systematic review/meta-analysis is more appropriate for their research aims should consult key papers in the field that discuss differences across review types (e.g., Munn et al. (2018), *BMC Medical Research Methodology*, 18, 1-7). Broadly, as noted in Munn et al. (2018), “*Scoping reviews are useful for examining emerging evidence when it is still unclear what other, more specific questions can be posed and valuably addressed by a more precise systematic review*” (p. 2).

All scoping reviews must follow the [PRISMA Guidelines](#) for scoping reviews summarized in the Tricco et al. (2018) article entitled “*PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation*” (Ann Intern Med.). Authors who choose this contribution type must include the [2020 PRISMA Flow Diagram](#) in the manuscript and complete the [PRISMA-ScR checklist](#) upon submission of the manuscript. During the submission process, authors will be prompted to confirm they have followed the Scoping Review checklist in the submission form. The rationale for any unchecked items on the Scoping Review Checklist must be explicitly described in the accompanying Cover Letter.

**Required Elements for all IJED Review Papers:** In addition to the required PRISMA components for systematic reviews, meta-analyses, and scoping reviews described above, all of these review article types must also include the following:

- **Search date:** All IJED review papers must include the month/year that the last literature search was conducted. This date must be within 6 months of the manuscript submission date.
- **Unpublished research:** IJED review papers should aim to include all available literature on the topic, regardless of publication status. Authors should attempt to locate unpublished data by using online databases (e.g., ProQuest, ETHoS, MedRxiv, PsyArXiv, gov) and directly contacting authors if relevant data are not included in published or unpublished works.
- **Sociodemographic characteristics:** A full description of the age, sex assigned at birth and/or gender, race, ethnicity, and socioeconomic status of participants in the reviewed studies must be included in all IJED review papers. Please see the IJED [Demographic Characteristics Reporting Guidelines](#) for more information definitions of these variables. Please note that reporting this sociodemographic information is required for all IJED review papers (rather than just recommended), as these data are critical for future meta-analyses and for understanding to whom the current literature base applies. In terms of reporting the data, authors should include separate columns/entries for the sociodemographic variables in tables describing the studies included in the review. If a paper included in the review does not report these demographic variables, then “NR” (Not Reported) must be indicated in the appropriate table cells. All review papers must also explicitly discuss in the

main manuscript text the diversity of the samples and the ways in which this diversity (or lack thereof) may impact the generalizability and representativeness of the review's results and conclusions.

- **Non-English language articles:** In the interest of representing the global literature, authors are strongly encouraged to include non-English language articles where practically possible. Minimally, authors are expected to initially search the literature without filtering out non-English language articles. In their PRISMA flow diagram, authors should report the number of articles they excluded based on language. References of articles excluded due to language barriers should be saved in a supplemental file, along with English-language abstracts if available. The supplemental file containing these references and abstracts must be uploaded when submitting the review article. While not required, to the extent possible, we encourage authors to pursue opportunities for accessing non-English language papers such as inviting collaborators with the requisite language skills; employing translation software; or seeking expert assistance in translating articles.

**Recommended Elements for all IJED Review Papers:** Authors are encouraged to pre-register their systematic reviews, meta-analyses, and scoping reviews to detail their review strategy/protocol with regard to their research questions, inclusion/exclusion criteria, databases searched, search terms used, synthesis/analytic methods, etc. Examples of pre-registration systems that could be used include Prospero (<https://www.crd.york.ac.uk/prospero/>) for systematic reviews and meta-analyses, and the Open Science Framework (OSF; <https://osf.io/>) for scoping reviews.

### **Spotlight – [see checklist](#)**

This is a contribution type where authors propose an idea that may not yet have adequate empirical support or be ready for full empirical testing but holds great promise for advancing research of eating disorders. Authors are encouraged to write a piece that is bold, forward looking, and suggestive of new and exciting avenues for research and/or practice in the field. The manuscript should identify the specific knowledge gap and why filling the gap will advance research and practice in the field; it should delineate several concrete steps for addressing the gap.

### **Perspective – [see checklist](#)**

A Perspective comments on an Original Article, Brief Report, or Systematic Review (including meta-analyses) manuscript published in the IJED. The Perspective must focus on a manuscript that has been published in Early View within three months before submission of the Perspective manuscript. Submissions not meeting these requirements are rejected without review.

A Perspective expands upon the published research by offering additional context, interpretation, or suggestions regarding the potential application of the research for advancing science and practice in eating disorders. Perspective manuscripts may not merely

summarize the published research, nor are they intended to primarily discuss the author's own work. Because the Original Research, Brief Report, or Systematic Review paper has already been peer reviewed, the Perspective manuscript should be viewed as an opportunity to develop the ideas and potential of the work reported, rather than a critique of the paper. Indeed, only submissions that add a new dimension to the published research will be considered suitable for publication.

Perspective articles should provide a personal viewpoint and, as such, authorship should be limited to one or two authors. We recognize various forms of expertise, including research expertise, clinical expertise, expertise by lived experience (e.g., individuals impacted by an eating disorder), policy expertise, or expertise in a scholarly field distinct from eating and weight disorders. When submitting a Perspective, authors are requested to specify in their Cover Letter their primary expertise as pertaining to the Perspective submission.

## **Appendix B: Glossary of terms**

Developed with use of the Stonewall website: [List of LGBTQ+ terms \(stonewall.org.uk\)](https://www.stonewall.org.uk/resources/terminology)

**Agender:** A person with no gender identity, someone who does not feel they have any gender.

**Assigned Female at Birth (AFAB):** A term used to refer to an individual who was assigned the sex of female at birth.

**Assigned Male at Birth (AMAB):** A term used to refer to an individual who was assigned the sex of male at birth.

**Cisgender:** A term for individuals whose gender identity corresponds with their sex assigned at birth.

**Cissexism:** A term used to describe prejudice or discrimination targeted against trans people. (Also often referred to as transphobia).

**Gender affirmation:** The process an individual goes through to affirm their gender identity, and live authentically as their gender. This can involve social, medical and legal affirmation.

**Gender-affirming care:** Social, psychological, medical and behavioural healthcare interventions to support and affirm an individual's gender identity.

**Gender diverse:** An umbrella term for individuals whose gender identity differs from their sex assigned at birth.

**Gender dysphoria:** A term used to describe the distress or discomfort someone can feel as a result of a mismatch between their gender identity and sex assigned at birth. This is also a clinical diagnosis.

**Gender euphoria:** A term used as a contrast to gender dysphoria, to describe the positive emotions one can experience from their gender identity and expression.

**Gender expansive:** A term used to describe an individual whose gender identity/expression expands beyond, and/or actively does not conform with, social expectations of gender (in particular binary genders).

**Gender expression:** How a person (of any gender) chooses to outwardly express their gender, within the context of societal expectations of gender.

**Gender identity:** A person's innate sense of their own gender (which may or may not correspond with their sex assigned at birth)

**Gender Identity Disorder:** An older term for gender dysphoria, this was a medical diagnosis within the DSM-4, but was removed and replaced with gender dysphoria in the DSM-5. This was sometimes shortened to GID.

**Gender minority:** An umbrella term for individuals whose gender identity and/or expression differs from their sex assigned at birth.

**Gender reassignment:** Another way of describing someone's transition. Gender reassignment is a protected characteristic under the Equality Act (2010). The term has been contested by gender diverse individuals and charities such as Stonewall.

**Genderfluid:** A person who does not have a fixed gender identity; their gender shifts and changes. This identity typically falls under the non-binary umbrella.

**Genderqueer:** An umbrella term similar to non-binary; for individuals who do not identify with either binary gender of 'man' or 'woman'.

**LGBTQ+:** An abbreviation for 'Lesbian, Gay, Bisexual, Trans, Queer, Questioning, Ace'. This term is often used to refer to the community of all sexual and gender minorities.

**Misgendering:** When someone, accidentally or purposefully, refers to an individual as the incorrect gender (e.g. using incorrect pronouns and/or name).

**Non-binary:** An umbrella term for individuals whose gender identity does not fit with 'man' or 'woman' (i.e. an identity outside of the gender binary). People who identify as non-binary can identify with some aspects of the binary genders, to varying extents, or can reject gender entirely. This term can be shortened to NB.

**Passing:** Being identified, at a glance, as a cisgender woman or man (that is, being identified in public as one's gender identity).

**Pronouns:** Words which refer to people's gender in conversation- e.g. 'she/her', 'he/him'. Some people prefer gender neutral pronouns, such as they/their, or ze/zir.

**Trans:** A frequently used umbrella term for anyone whose gender identity differs from, or sits uncomfortably with, their sex assigned at birth.

**Transgender man:** An individual who was assigned female at birth, but identifies and lives as a man. This can be shortened to trans man, or female-to-male (FTM for short).

**Transgender woman:** An individual who was assigned male at birth, but identifies and lives as a woman. This can be shortened to trans woman, or male-to-female (MTF for short)

**Transphobia:** The fear or dislike of someone based on their trans identity. This can include denying or refusing to accept someone's gender identity.

**Transsexual:** This was a medical term to refer to someone whose gender differed, or did not sit comfortably with, their sex assigned at birth. This term is no longer frequently utilised, although some individuals do still prefer this term.

**Two-Spirit:** A term in Native American and indigenous cultures to describe someone who has both a masculine and feminine spirit, or who fulfils a third gender social role in communities.

**Appendix C: Data extraction table example**

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Extraction field	Data extracted
Author(s)	Ålgars, M., Alanko, K., Santtila, P., & Sandnabba, N.K.
Date	2012
Country	Finland
Aims	<p>-To examine eating behaviours and cognitions in a sample of transgender Finnish adults.</p> <p>-To investigate incidence and nature of disordered eating within this population, as well as participants' own understanding of underlying causes.</p> <p>-To explore the impact of gender-affirming treatment on disordered eating.</p>
Study setting	<p>One participant was recruited through previous study, the rest recruited through Transtukupiste, a Finnish non-governmental organization providing support services for transgender people.</p> <p>No information regarding location of interviews.</p>
Gender identity/ies of participants	All participants were reported to be transgender- 11 FtM, 9 MtF.
Eating disorder diagnoses of participants	<p>No formal diagnoses- eligibility criteria did not include ED or DE, but the study was advertised as seeking individuals who self-identified as transgender for a study on body image and eating behaviours.</p> <p>Height, weight and EDI-III subscales Drive for Thinness, Bulimia, and Body Dissatisfaction from the Eating</p> <p>Disorder Inventory-3 were collected. On the Drive for Thinness subscale M=7.21 (SD = 4.87), Bulimia subscale M=4.26 (SD = 4.37), and on the Body Dissatisfaction subscale M=14.32 (SD = 8.07). There were no differences in BMI or EDI-3 scores between MtF and FtM participants. A majority of the participants (n = 14, 70%) reported self-defined current or previous disordered eating.</p>
Participant characteristics	All participants were Finnish adults. Age range: 21-62 years old. MtF mean age=42.22, SD= 13.82, FtM mean age= 29.45, SD= 6.7). All but 4 diagnosed with 'Gender Identity Disorder' and had undergone/ were undergoing 'gender reassignment'. BMI range: 19.8 to 33.1.

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Data collection methods	Semi-structured interviews, plus completion of EDI-3 subscales drive for thinness, bulimia and body dissatisfaction. Height and weight collected to calculate BMI.
Data analysis methods	Grounded Theory coding (Auerbach & Silverstein, 2003)
Key themes	<p>DE behaviours reported: dieting (N = 13; 65%), Bingeing (N = 5; 25%), Purging (N = 5; 25%), excessive exercise (N = 8; 40%).</p> <p>Perceived causes of DE: THEME 1: Suppressing gender (N = 5; 35%). 4 FtM and 1 MtF described attempts to suppress secondary sex characteristics through weight loss. FtM especially described strive for thinness as strive for reduced femininity. THEME 2: Accentuating gender (N = 3; 21%). Two MtF and 1 FtM described weight loss to accentuate characteristics of gender identity. MtF participants described slenderness as an essential part of femininity. One FtM participant mentioned weight loss being related to enhanced masculinity. THEME 3: Other causes: strive for self-control, feeling like an outsider and not good enough, expression of struggle for autonomy and freedom, feeling one didn't deserve to eat, thinness would make sexual situations easier, psychological stress and strain. Disordered eating and gender reassignment: THEME 1: positive change (N = 4; 25%). 3 FtM and 1 MtF reported body image improved and DE symptoms reduced by gender reassignment. THEME 2: Negative change (N = 2; 11%). 2 MtF participants described unwanted weight gain due to hormonal therapy.</p>
Limitations	<ul style="list-style-type: none"> <li>- Small sample size- unrepresentative of all individuals with 'Gender Identity Disorder'.</li> <li>- Volunteer sample- possible that participants with specific disordered eating difficulties were more motivated to participate.</li> <li>- All disordered eating and ED experiences were self-reported.</li> </ul>

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**Appendix D: Study characteristics table**

Authors (year)	Country	Recruitment	Sample characteristics	Data collection and methodology	Main findings
Algars et al. (2012)	Finland	One participant was recruited through a previous study, the rest recruited through Transtukupiste, a Finnish non-governmental organization providing support services for transgender people.	<p>N=20 (14 reported DE). Ages: 21-62 years old. MtF mean age=42.22, SD= 13.82, FtM mean age=29.45, SD= 6.7).</p> <p>Gender identities: 11 FtM, 9 MtF. 16 diagnosed with GID, and had undergone/ were undergoing gender reassignment.</p> <p>Eating disorder characteristics: No formal diagnoses. 14 participants self-reported disordered eating difficulties.</p>	<p>Semi-structured interviews, EDI-3 subscales drive for thinness, bulimia and body dissatisfaction. BMI.</p> <p>Grounded Theory coding (Auerbach &amp; Silverstein, 2003)</p>	<p>- Engagement in disordered eating behaviours as a means of suppressing secondary sex characteristics and accentuating characteristics of gender identity.</p> <p>- Other causes of disordered eating included a strive for self-control, feeling like an outsider and not good enough, expression of struggle for autonomy and freedom, feeling one didn't deserve to eat, perception that thinness would make sexual situations easier, and as a result of psychological stress and strain.</p> <p>- Positive and negative changes associated with gender affirming care: improved body image and less need for disordered eating, but also unwanted weight gain from hormone therapy.</p>
Bowman (2018)	USA	Convenience sample, recruited through flyers posted in LGBTQ mental health and support centres, and two large college campuses in Chicago. Expanded with snowballing technique.	<p>N= 14. Median age 24 years, range 19-65. 10 white, 2 Asian, one Native American and Black, one mixed-Arab.</p> <p>Gender identities: 8 non-binary, 3 Agender. Other identities: "trans dude," "two-spirited transfeminine," "nonbinary/</p>	<p>Semi-structured interviews.</p> <p>Reviewed by expert members of the trans community.</p>	<p>- Difficulty separating feelings of dysphoria from dysmorphia.</p> <p>- Pressure and necessity to be recognised socially and societally by gender identity as influential in disordered eating; passing as gender identity, or for non-binary participants distancing self from sex assigned at birth.</p>

			<p>agender/ genderqueer,” and one individual declined to specifically identify, saying, “I’m not super tied down on that.” 11 AFAB, 3 AMAB.</p> <p>A self-reported history of eating disorder(s) was included in eligibility criteria. Majority (57.1%) had no formal diagnoses but described current or historic ED behaviours consistent with a diagnosis based on clinical judgement. 42.9% had a formal diagnosis. Two participants had no diagnosis nor did they meet criteria based on clinical judgement- these two were the only ones not to relate ED to gender identity.</p>	<p>Inductive thematic analysis (Braun &amp; Clark)</p>	<ul style="list-style-type: none"> <li>- Protective nature of non-binary identity as category-less and outside of societal norms.</li> <li>- Control: seeking control over how they look, feel, and are seen and treated.</li> <li>- Support from people around them and healthcare teams important.</li> <li>- Several recommendations for healthcare professionals: asking for and using pronouns correctly; institution-wide policies of transgender support and acceptance; building rapport prior to disclosure of gender identity and/or DE needed; training for staff around TNB identities and issues; importance of bedside manner- providing reassurance and affirmation, and being “nonjudgmental” in their care.</li> </ul>
Brewer et al. (2022)	UK	Participants were recruited from a transgender support group meetings in Northwest England.	<p>N= 22. Ages 19 to 71 years. All identified as white.</p> <p>Gender identities: 17 identified as female, 5 were not living “full-time” as women. Four were transgender men (all living as males “full-time”). One didn’t identify as male or female but was excluded as</p>	<p>Semi-structured interviews developed in collaboration with a member of the transgender community.</p>	<ul style="list-style-type: none"> <li>- Findings organised by stage of gender affirmation.</li> <li>- Pre-gender affirmation (all discussed this stage): use of disordered eating behaviours to manage gender, how they felt about their body and gender identity, as well as how others perceived them. Prior to coming out, disordered eating and exercise behaviours were a way of hide true gender identity and coping with hiding gender identity and gender dysphoria.</li> </ul>

answers differed significantly from the other participants.

Eating disorder diagnoses: No diagnosis- the study focused on eating behaviours more generally, not ED specifically.

Inductive thematic analysis (Braun & Clark)

- Early gender affirmation= new motivation to look after body, and influence gender presentation.

- Reliance on disordered eating and exercise behaviours to influence gender expression at this stage (pre-gender affirming care).

- Use of disordered eating to cope with impact of coming out (increased bullying, relationship breakdowns), stress of transphobia, suicidal ideation, long waits for treatment and feeling trapped in body.

- Receiving hormone therapy increased awareness and control of weight, shape and eating, due partly to increased appetite and weight gain from hormones.

- Losing weight to be eligible for surgery.

- Later stages of gender-affirming care: feelings of contentment in self and body, looking after body following surgery, but continued engagement in weight control strategies (healthy and unhealthy) to alter appearance.

Chung (2019) USA

Participants were recruited through Facebook groups, online communities, word of mouth and e-mail listservs from their university.

N=15. Ages 20-33 years.  
Race/ethnicity: White, Black, Chinese, Asian, mixed races: Asian/White, Black/Native American, White/Latinx, South American Mestizo/ Spanish, Chinese/American, French/American. Sexualities: Pansexual/fluid, asexual, queer,

Semi-structured interviews.  
Interview piloted on a non-binary peer with history of disordered eating and adapted following feedback.

- Interconnectedness of body dysmorphia and gender dysphoria, confusion over which disorder was driving difficulties with eating.

- Engagement in disordered eating to gain sense of control (to cope with feeling disempowered and to relieve anxiety) as well as to cope with anxiety, rejection from families, gender dysphoria, shame,

demi-panromantic asexual, bisexual, pansexual, biromantic asexual, grey asexual panromantic. All reported mostly financially secure, with a few experiencing periods of financial insecurity. Majority middle or upper class. 1 identified as neurodiverse, one person identified as neurodiverse and disabled, 1 person identified as disabled.

Gender identities: Non-binary, agender, genderflux/agender, non-binary/ Gender-free

Eating disorder diagnoses: To be included in the study, participants needed to report any history of restricting, bingeing, or other disordered eating behaviours.

Grounded theory  
Glaser and Straus  
(1967), Corbin &  
Strauss (2015)

trauma, self-hatred, limited access to gender-affirming care, marginalisation.

- Influence of past experiences, which created the conditions for a shame-based relationship with self, and feelings of being out of control- including marginalisation, trauma, puberty, and family dynamics.

- Disordered eating as a way of managing shame, pain of marginalisation and rejection, feeling out of control and disempowered. Disordered eating as a way of feeling more empowered.

- Impact of body ideals and societal expectations on disordered eating.

- Intersectionality and impact of compounding stigmas (e.g. weight stigma).

- Unique experiences of non-binary people- lack of visibility and understanding of identity in society. Pressure to adapt body to feel more legitimate in identity and avoid marginalisation.

- Community, connection, choice, empowerment and being seen are important in healing.

- Non-binary identity is uniquely protective (outside of expectations of binary gender). Acceptance of gender identity can be important for healing.

Cusack et al. (2022)	USA	<p>Online survey. A majority of participants were recruited from Reddit (n = 52; 63.42%), followed by Facebook (n = 15; 18.29%), Instagram (n = 2; 2.44%), Tumblr (n = 1; 1.22%), email (n = 1; 1.22%), and by other means (e.g., word of mouth; 13.42%)</p>	<p>N= 82. Age: M= 24.65 (SD= 5.32). Socioeconomic status:</p> <ul style="list-style-type: none"> <li>Working class 64 (32.99%)</li> <li>Lower-middle class 37 (19.07%)</li> <li>Middle class 38 (19.59%)</li> <li>Upper-middle class 18 (9.28%)</li> <li>Upper class 2 (1.03%)</li> <li>Don't know/no answer 15 (7.73%)</li> </ul> <p>Race/ethnicity:</p> <ul style="list-style-type: none"> <li>Asian/Asian American 1 (1.2%)</li> <li>Biracial/Multiracial 3 (3.7%)</li> <li>Hispanic/Latinx 4 (4.9%)</li> <li>White 72 (87.8%)</li> <li>Prefer not to disclose 2 (2.4%)</li> </ul> <p>Gender identities: Transgender woman: 24 (29.3%) Nonbinary: 22 (26.8%) Transgender man: 16 (19.5%) Gender queer/fluid: 7 (8.5%) Woman with a transgender history: 4 (4.9%) Man with a transgender history: 3 (3.7%)</p>	<p>Online survey. Data collected as part of a larger parent study. Participants who reported experience of disordered eating completed the EDE-Q and responded to a qualitative prompt: "How does your eating disorder, disordered eating, or eating and/or body image concerns relate to your gender identity and expression?"</p> <p>Inductive thematic analysis (Braun &amp; Clark)</p>	<ul style="list-style-type: none"> <li>- Onset of ED related to gender dysphoria and managing dysphoria.</li> <li>- Puberty as important: participants engaged in disordered eating to stop puberty, avoid secondary sex characteristics, regain control over body that was betraying them and stunt growth.</li> <li>- Use of disordered eating to manage affect (shame, disgust, guilt), control body, avoid gender, and as self-punishment.</li> <li>- Disordered eating developed as a strategy to manage negative emotions associated with gender and body, shame due to internalised transphobia and homophobia, and to punish body for not being what they want and/or punish self for who they are.</li> <li>- Eating disorder as related to gender expression, and a need to follow beauty standards more strictly so gender isn't questioned.</li> <li>- ED recovery and transition- recovery from ED allowed for more space to consider and explore gender. And feeling "comfier" with gender helped with ED.</li> </ul>
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Agender: 3 (3.7%) Bigender: 1 (1.2%) Other: 2 (2.4%)

50 AFAB, 30 AMAB, 1 intersex, 1 prefer not to say.

Eating disorder diagnoses:  
Community sample recruited via social media. Participants who self-reported experience of an eating disorder, disordered eating, and/or body image concerns included.

Garvis (2021)	USA	Content was extracted from YouTube videos and Reddit posts and comments relating to gender identity and eating disorders, from March 17, 2016, to February 28, 2021.	13 YouTube videos, nineteen reddit posts and comments across five different subreddits.	Content analysis of YouTube and Reddit posts	- Dysphoria vs. dysmorphia: interconnectedness, confusion over which disorder was influencing them.
			Gender identities:  Transfeminine, transmasculine individuals, non-binary, genderfluid individuals. Limited transfeminine content-just 1 video by a transwoman on YouTube.	Content analysis axial coding	- Eating disorder managed gender dysphoria- ED as way of controlling body to better represent gender.
			Eating disorder diagnoses:		- ED as a way of feeling more in control of body/ life.
					- the role of gender-affirming care- Lessens dysphoria and improves ED symptoms, but not a magic fix.
					- Gender-affirming care (GAC) can temporarily cause negative effects for people with ED- e.g. weight gain from hormones.
					- Effects of EDs prevent access to GAC- weight and health requirements for hormone therapy and surgery, food restriction can impact effectiveness of hormones.

The majority of posters self-reported diagnosis of an eating disorder.

- Pressure to maintain beauty standards to be accepted by society and look more like societal expectation of gender as influential for EDs.
- DE aided passing as gender, importance of societal expectations with passing discussed.
- Unique difficulty of passing as a non-binary person- needing to remove all gender.
- Thinness- equated to femininity, androgyny, and masculinity across trans identities.
- Cis-normativity of EDs influencing help-seeking.
- Cis-normativity of treatment unhelpful, invalidating.
- Lack of knowledge of gender diverse experiences and discrimination from healthcare professionals as barriers to ED care.

Gordon et al. USA (2016)

Participants were recruited for a HIV behavioural intervention trial as part of a separate parent study. All participants were low-income, ethnically diverse trans women.

N=21. Age: 18-32 Ethnicity: Black/ African American (n=4), Latina (n=4), White (n=4), Asian/ Asian American (n=1), Multiracial (n=8) Sexual orientation: Straight (n=11), homosexual (n=2), bisexual (n=2), queer (n=2), pansexual (n=1), transgender woman (n=1), don't know (n=1). Participants were all low-income, ethnically diverse transfeminine individuals. 16 reported an annual income in 2013 less than \$6000, about half

Semi-structured interviews, post-interview questionnaire capturing demographics and weight and shape control behaviours.

Template organising style

- Feminine thinness ideals and weight and shape control; ideal female appearance and gender transition goals tied up with weight and shape.
- Influence of dieting behaviours of cisgender female peers, influence of what peers perceived as attractive on disordered eating behaviours.
- Race/ethnicity and alternative femininity ideals: diversity in societal ideals of femininity influencing disordered eating.
- Stress associated with social environments which were discriminatory (transphobia, homophobia and

reported unstable housing in the prior six months (including living in a hotel, group home, on the street, or having no fixed address), and only three reported current full-time employment. All were living with or at risk of HIV.

Gender identities:

Transgender female, MTF, transsexual, genderqueer, demi-girl.

Eating disorder diagnoses: No formal diagnoses, participants self-reported engagement in disordered eating behaviour but this was not a requirement for eligibility.

weight-stigma particularly reported) impacted significantly on weight control behaviours.

- Coping with fear of rejection through disordered eating.

- Having to prove gender through being ultra-feminine, above and beyond expectations of femininity for cis women. "Not fitting the bill" as a woman impacted gender-affirmation.

- Hormone therapy caused changes to weight and appetite; some participants reported positive changes to body satisfaction and wellbeing, others reported struggling with the unwanted weight gain.

- Impact of Western narratives of overweight women impacting weight dissatisfaction.

- Stress of undergoing puberty in wrong gender as related to disordered eating.

- Positive body talk, critical media consumption, gender-affirming support from community, friends, and partners as protective factors.

- Negative impact of internalised transphobia within the trans community and individuals as impacting need to prove gender through ultra-femininity.

- Conforming: pressures from social discrimination.

- Gender presentation and treatment from others would be different if smaller.

Harrop et al. (2023)

USA

Participants recruited from ED treatment centres, online support

N= 9. Ages 18-38 years. 7 white, 1 white and Hispanic, 1 African-American and white. 8 AFAB, 1 AMAB. 6 on public assistance as a

Semi-structured interviews at

groups and snowball recruitment.

child, 3 not. Sexualities: queer, queer/lesbian, homoflexible, bi queer, pansexual, bisexual/ queer. All had completed high school, 3 had a Bachelor's, 2 had a master's and 2 had doctorates.

Gender identities: 7 non-binary/ genderqueer, 1 FTM, 1 MTF

Eating disorder diagnoses: Atypical Anorexia Nervosa, confirmed with DSM-5 criteria.

baseline, 6 months, and 12 months.

Thematic analysis (Braun and Clark, 2006)

- Societal monitoring of bodies increased stress and anxiety.

- Gender norms around body size and shape as major contributors to body dissatisfaction and gender dysphoria.

- Pressure to change bodies due to gendered patterns of fat; validity of gender identity and ability to pass impacted by gendered fat distribution (e.g. curves).

- Pressure to perform gender prior to coming out as NB important to ED experience.

- Weight requirements for gender surgery influencing disordered eating.

- ED behaviours aided coping with distress. EDs helped with gender dysphoria (GD), body dissatisfaction and body disconnection.

- GD worsening with ED recovery- sex characteristics enhanced with weight gain.

- Distress from weight dissatisfaction and gender dysphoria intertwined.

- Coping through body disconnection and avoidance: Cope with body distress through ED and disconnecting from body. ED kept them both separated from and trapped within body.

- ED related to wanting to disappear.

Joy et al. (2021)	Canada	Participants recruited from social media, community organisations and snowballing. Inclusion criteria: gender diverse Canadians accessing treatment for eating disorders and/or disordered eating concerns.	<p>N=7. Ps age 20-40, 7 white, 1 Acadian.</p> <p>Gender identities: 3 non-binary individuals, 1 genderqueer person, 1 non-binary trans woman, 1 trans woman, 1 genderfluid non-binary person.</p> <p>Eating disorder diagnoses: All were accessing treatment for ED or disordered eating. 4 people with restrictive eating, 1 person with restrictive eating/ ARFID, 1 person</p>	<p>Semi-structured interviews.</p> <p>Thematic Analysis (Braun &amp; Clark, 2006)</p>	<ul style="list-style-type: none"> <li>- Recovery as having to reconnect to body- painful at first in relation to gender dysphoria.</li> <li>- ED recovery aided by connection to gender identity, body, and communities of resistance.</li> <li>- Protective nature of NB identity- without categories and societal norms to conform to.</li> <li>- Critique: ED treatment as unwelcoming to gender diverse individuals: non-affirming environments, gender issues unaddressed in ED treatment, feeling out of place in ED treatment.</li> <li>- Interconnected themes.</li> <li>- Cisnormativity of ED treatment, gender experiences not addressed in treatment, which impacts care and recovery.</li> <li>- Influence of gendered ideals on body image important; need to pass and conform associated with ED behaviours.</li> <li>- Gender dysphoria experienced as disconnection from body, self, emotions, others- linked with development of ED.</li> <li>- Desire to exert control over bodies which were "wrong" through ED.</li> </ul>
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			with Anorexia Nervosa, 1 person with Anorexia Nervosa, Bulimia Nervosa and Binge-eating.			<ul style="list-style-type: none"> <li>- Legacy of transphobia and discrimination experiences barriers to ED treatment.</li> <li>- Cisnormativity of EDs preventing help-seeking.</li> <li>- Cisnormative ED treatment didn't address gender issues, such as seeking to align bodies to gender identity. Treatment could also be harmful; with body acceptance narratives often experienced as invalidating of gender identity.</li> <li>- Recommendations for ED treatment: safe spaces for gender diverse clients, specific gender diverse spaces. Take gender dysphoria into account, tailor treatments for gender diverse individuals.</li> </ul>
Mirabella et al. (2020)	Italy	Participants recruited through Unit of Endocrinology of the Policlinico Umberto I Hospital of Rome.	<p>N= 36. Aged 16–30, all at stage T0 of hormonal therapy (waiting to begin it) at the Unit of Endocrinology of the Policlinico Umberto I Hospital of Rome and defined themselves as transgender.</p> <p>Gender identities: 15 AMAB and 21 AFAB- transgender identifying.</p> <p>Eating Disorder diagnoses: No diagnoses, participants were recruited through a gender clinic, eating disorder self-reported or</p>	<p>Clinical Diagnostic Interview (CDI)</p> <p>Consensual Qualitative Research (CQR) methodology</p>	<ul style="list-style-type: none"> <li>- Discomfort with appearance, feelings of non-conformity and distress in the face of pubertal changes (specifically, development of secondary sex characteristics incongruent to felt sense of gender) were related to significant distress.</li> <li>- Shame and repulsion towards bodies felt by many since childhood.</li> <li>- Self-harm, suicidal ideation and disordered eating emerged within this context.</li> <li>- Difficulties with sex and sexuality in relation to gender and gender dysphoria discussed.</li> <li>- Conscious engagement in disordered eating behaviours reported- awareness of underlying causes.</li> </ul>	

diagnosed was not a requirement for the study. Participants all described difficulty with disordered eating.

- Differences observed between those assigned male at birth (AMAB) and assigned female (AFAB): AMAB showed more desire to appear slender and exert control over body, AFAB individuals- restriction was less common, but participants still reported concern about their body and showed desire to control food intake.

Motivation behind DE included:

- Altering body and appearance to better align with gender identity.
- Motivation to attack and/or exert control over body.
- Restriction as a result of distress, low self-esteem, and as a way of harming selves.
- Overeating/ bingeing as a way of coping with emotions and distress.

Pham et al. (2023)

USA

Participants recruited from the Seattle Children’s Gender Clinic- as part of a wider qualitative study on mental health- this paper focused on eating and exercise themes from this study.

N= 23. Most participants identified as white (83%) and were enrolled in school (83%). Ages 13 to 19 years with an average of 16.9 years.

Gender identities: 44% of participants identified as having a transfeminine gender identity, 39% as transmasculine, and 17% as nonbinary or gender fluid.

Semi-structured interviews

Thematic analysis (Braun & Clark, 2006)

- Relationship to food and exercise reported as connected to gender dysphoria.
- Pressure to pass as gender identity associated with increased focus on body image ideals and poorer relationship with food in comparison to cisgender individuals.
- Modified eating habits to feel control over body.
- Societal beauty expectations of gender as influential in disordered eating (binary gender identities only reported this).

			Eating disorder diagnoses: No formal diagnoses, paper focused on themes from the wider study focused on eating and exercise behaviours.			<ul style="list-style-type: none"> <li>- Impact of other mental health difficulties on eating and exercise discussed.</li> <li>- Changes to relationship with food and exercise with hormone therapy (HT)- for some, hormone therapy improved relationship with food, partly as body changed to align more with gender identity (less dissatisfied with weight when fat distributions better reflected gender), some due to improved mental wellbeing from HT, and for some HT provided new motivation to take care of their bodies. For others, HT increased awareness of the body and while gender dysphoria improved, eating and body image concerns worsened.</li> </ul>
Pinelli (2019)	Canada	Participants were recruited via email through a Toronto based support group for transgender and nonbinary individuals experiencing an eating disorder.	N=7. Three participants range between the ages of 21 to 30, three between the ages of 31 to 45 and one identified as being over the age of 50. 57% identified their ethnicity as white or Caucasian. Of the remaining 43% the race and ethnicity were evenly spread between Chinese, white and indigenous and mixed race.	Semi-structured interviews	Thematic analysis (Braun & Clark, 2006)	<ul style="list-style-type: none"> <li>- Connection between gender identity and eating disorder- in the development and experience of ED, and recovery journey.</li> <li>- Adapting body to aid passing as gender identity.</li> <li>- Impact of LGBTQ+ beauty standards on ED.</li> <li>- Appearance ideals within LGBTQ+ community shaped by expectations of society and transphobia within society, meaning those who appeared closer to cisgender were more accepted and respected.</li> <li>- Discrimination experiences in healthcare settings and within ED services as impacting on ED recovery. Feeling unsafe, being outed, misgendered, discriminated against and experiencing harmful treatments reported.</li> </ul>
			Gender identities: two participants identified as transgender males, one identified as non-binary trans masculine, one identified as a trans female, two identified as non-			

binary and one identified as genderqueer.

Eating disorder diagnoses: All had ED diagnosis (past or present) specific diagnosis not collected.

- Lack of understanding of gender diversity and EDs in healthcare professionals, onus on them to educate professionals.

- Cisnormativity of ED programmes reported as harmful and impacting on ED recovery.

- Benefits and challenges of use of the internet discussed. Participants reported seeking community and connection online, including in pro-anorexia and bulimia sites. Benefits of connecting with other gender diverse individuals experiencing EDs, seeking connection and advice. - Gender diverse online spaces not always helpful- experiences of exclusion within LGBTQ+ community as trans person, and within trans communities as deemed not “trans enough”.

- Community and connection, not feeling alone in experiences, finding spaces where they are accepted for who they are as important in ED recovery.

Romito et al. (2021)	USA	Participants were recruited from advertisements through listservs associated with community groups and providers as well as from other completed studies of gender minority youth in the Pittsburgh region.	N=9. Ages 14–20 years old. The majority of participants identified as White (n = 7), and all participants under age 18 were attending high school (n =8). Female at birth (n = 7) and male at birth (n = 2).  Gender identities: transfemale, transmale, agender, non-binary, genderqueer. All participants had previously disclosed their gender identity to another person and reported using a name or pronouns congruent with their current gender identity.  Eating disorder diagnoses: No formal or self-reported diagnoses.	Semi-structured interviews  A holistic multiple-case study design, cross-case analysis (Creswell, 2013)	<ul style="list-style-type: none"> <li>- Results included case summaries and case synthesis.</li> <li>- Disordered eating as a way of aligning body to gender identity mentioned by all participants- with variations between gender identities.</li> <li>- Motivations included: muscle building, creating a feminine waistline, minimising secondary sex characteristics, halting pubertal development, removing any gendered aspects of body to appear androgynous.</li> <li>- Disordered eating in relation to other mental health difficulties discussed, both associated and not associated with gender. Anxiety, depression, apathy as impacting on disordered eating, as well as use of food to relieve unhappiness and feel sense of control.</li> <li>- Influence of developmental and social context- Impact of parental acceptance/ non-acceptance of gender identity on access to gender-affirming care, and on mental wellbeing. Influence too of peers- how peers engaged in DE, how they perceived them and their gender, social comparison and beauty ideals as influential of DE.</li> </ul>
Zamantakis and Lackey (2022)	USA	Content of online vlogs and blogs were collected. The vlogs were all published on YouTube, and the blogs were published on a mix of personal sites,	13 bloggers and four vloggers. Thirteen of the sources were made by white content creators, one by a Southeast Asian American creator, and one by a mixed race, Asian-American creator. Two identified	Content analysis of blogs and vlogs	<ul style="list-style-type: none"> <li>- Interconnectedness of gender dysphoria and body dysmorphia, and the social shaping of both based on gendered appearance ideals. Disordered eating manifested for many as a way of coping with the two disorders.</li> </ul>

as well as online magazines.

as disabled, and five identified as queer.

Grounded theory methodology (Charmaz 2006),

Gender identities: Seven content creators were nonbinary individuals assigned female at birth (AFAB), one a nonbinary individual assigned male at birth, five trans men, and two trans women.

All content creators self-reported experiencing eating disorders, including anorexia, bulimia, and eating disorders not otherwise specified.

- Eating disorder developing with the need for control during tumultuous puberty. Distress of body changes in puberty heightened when one was confused about where distress was coming from and hadn't yet understood their gender identity.

- ED masking gender dysphoria.

- Body discomfort about gender and about size, shape, and control reported. ED as a way of aligning body to gender identity.

- Pressure to pass influencing need for ED to alter body, in particular when unable to access GAC.

- Shame related to internalised transphobia as important. ED informed by need to take up less space in oppressive world, physically and metaphorically.

- Lack of representation of gender identity (especially NB identity) created a feeling in some participants that they were not human, deviant. Internalising sense of own deviance was reported as influential in ED.

- Cisnormativity of EDs increased shame and made it harder to seek help.

- Barriers to healthcare, including social disadvantage influencing access to insurance, lack of access to trans-inclusive providers, providers ill-equipped to work with ED and gender dysphoria, whiteness and cisness of ED discourse and cisnormativity of ED treatment as barriers to effective care.

**Appendix E: Distribution of themes table**

Theme	Subtheme	Papers represented
Interconnectedness of gender dysphoria and eating disorders		Bowman (2018) Chung (2020) Cusack et al. (2022) Garvis (2021) Harrop et al. (2023) Joy et al. (2022) Pinelli (2019) Zamantakis & Lackey (2022)
Gender expression	Managing gender	Algars et al. (2012) Bowman (2018) Brewer et al. (2022) Chung (2020) Cusack et al. (2022) Garvis (2021) Gordon et al. (2016) Harrop et al. (2023) Joy et al. (2022) Mirabella et al. (2021) Pham et al. (2023) Pinelli (2019) Romito et al. (2020) Zamantakis & Lackey (2022)
	Societal ideals	Algars et al. (2012) Bowman (2018) Brewer et al. (2022) Chung (2020) Cusack et al. (2022) Garvis (2021) Gordon et al. (2016) Harrop et al. (2023) Mirabella et al. (2021) Pham et al. (2023) Pinelli (2019) Romito et al. (2020) Zamantakis & Lackey (2022)
Coping psychologically	Coping with gender dysphoria	Brewer et al. (2022) Chung (2020) Cusack et al. (2022) Garvis (2021) Gordon et al. (2016) Harrop et al. (2023) Joy et al. (2022) Mirabella et al. (2021) Pham et al. (2023) Romito et al. (2020) Zamantakis et al. (2022)
	Control	Algars et al. (2012) Bowman (2018) Brewer et al. (2022)

		<p>Chung (2020)  Cusack et al. (2022)  Garvis (2021)  Gordon et al. (2016)  Joy et al. (2022)  Mirabella et al. (2021)  Pham et al. (2023)  Pinelli (2019)  Romito et al. (2020)  Zamantakis &amp; Lackey (2022)</p>
Surviving in the context of marginalisation	Safety	<p>Bowman (2018)  Chung (2020)  Garvis (2021)  Gordon et al. (2016)  Harrop et al. (2023)  Pinelli (2019)</p>
	Psychological impact	<p>Algars et al. (2012)  Bowman (2018)  Brewer et al. (2022)  Chung (2020)  Cusack et al. (2022)  Garvis (2021)  Gordon et al. (2016)  Harrop et al. (2023)  Mirabella et al. (2021)  Pinelli (2019)  Romito et al. (2020)  Zamantakis &amp; Lackey (2022)</p>
Healthcare	Gender-affirming care and eating disorder recovery	<p>Algars et al. (2012)  Bowman (2018)  Brewer et al. (2022)  Garvis (2021)  Gordon et al. (2016)  Harrop et al. (2023)  Pham et al. (2023)  Pinelli (2019)</p>
	Gender and ED treatment	<p>Bowman (2018)  Chung (2020)  Garvis (2021)  Harrop et al. (2023)  Joy et al. (2022)  Pinelli (2019)  Zamantakis &amp; Lackey (2022)</p>
Recovery and protective factors	Recovery and transition	<p>Bowman (2018)  Cusack et al. (2022)  Harrop et al. (2023)  Zamantakis et al. (2022)</p>
	Connection	<p>Bowman (2018)  Chung (2020)  Cusack et al. (2022)  Gordon et al. (2016)</p>

	Harrop et al. (2023)
	Pham et al. (2023)
	Pinelli (2019)
	Zamantakis & Lackey (2022)
Resistant narratives	Chung (2020)
	Gordon et al. (2016)
	Harrop et al. (2023)
	Pham et al. (2023)
	Pinelli (2019)
The protective nature of the non-binary identity	Bowman (2018)
	Chung (2020)
	Harrop et al. (2023)

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## Appendix F: Journal of Eating Disorders submission guidelines

### Preparing figures

When preparing figures, please follow the formatting instructions below.

- Figures should be numbered in the order they are first mentioned in the text, and uploaded in this order. Multi-panel figures (those with parts a, b, c, d etc.) should be submitted as a single composite file that contains all parts of the figure.
- Figures should be uploaded in the correct orientation.
- Figure titles (max 15 words) and legends (max 300 words) should be provided in the main manuscript, not in the graphic file.
- Figure keys should be incorporated into the graphic, not into the legend of the figure.
- Each figure should be closely cropped to minimize the amount of white space surrounding the illustration. Cropping figures improves accuracy when placing the figure in combination with other elements when the accepted manuscript is prepared for publication on our site. For more information on individual figure file formats, see our detailed instructions.
- Individual figure files should not exceed 10 MB. If a suitable format is chosen, this file size is adequate for extremely high quality figures.
- **Please note that it is the responsibility of the author(s) to obtain permission from the copyright holder to reproduce figures (or tables) that have previously been published elsewhere.** In order for all figures to be open access, authors must have permission from the rights holder if they wish to include images that have been published elsewhere in non open access journals. Permission should be indicated in the figure legend, and the original source included in the reference list.

### Figure file types

We accept the following file formats for figures:

- EPS (suitable for diagrams and/or images)
- PDF (suitable for diagrams and/or images)
- Microsoft Word (suitable for diagrams and/or images, figures must be a single page)
- PowerPoint (suitable for diagrams and/or images, figures must be a single page)
- TIFF (suitable for images)
- JPEG (suitable for photographic images, less suitable for graphical images)
- PNG (suitable for images)
- BMP (suitable for images)
- CDX (ChemDraw - suitable for molecular structures)

For information and suggestions of suitable file formats for specific figure types, please see our [author academy](#).

### Figure size and resolution

Figures are resized during publication of the final full text and PDF versions to conform to the BioMed Central standard dimensions, which are detailed below.

Figures on the web:

- width of 600 pixels (standard), 1200 pixels (high resolution).

Figures in the final PDF version:

- width of 85 mm for half page width figure
- width of 170 mm for full page width figure
- maximum height of 225 mm for figure and legend
- image resolution of approximately 300 dpi (dots per inch) at the final size

Figures should be designed such that all information, including text, is legible at these dimensions. All lines should be wider than 0.25 pt when constrained to standard figure widths. All fonts must be embedded.

Figure file compression

- Vector figures should if possible be submitted as PDF files, which are usually more compact than EPS files.
- TIFF files should be saved with LZW compression, which is lossless (decreases file size without decreasing quality) in order to minimize upload time.
- JPEG files should be saved at maximum quality.
- Conversion of images between file types (especially lossy formats such as JPEG) should be kept to a minimum to avoid degradation of quality.

If you have any questions or are experiencing a problem with figures, please contact the customer service team at [info@biomedcentral.com](mailto:info@biomedcentral.com).

Preparing main manuscript text

Quick points:

- Use double line spacing
- Include line and page numbering
- Use SI units: Please ensure that all special characters used are embedded in the text, otherwise they will be lost during conversion to PDF
- Do not use page breaks in your manuscript

File formats

The following word processor file formats are acceptable for the main manuscript document:

- Microsoft word (DOC, DOCX)
- Rich text format (RTF)

- TeX/LaTeX

**Please note:** editable files are required for processing in production. If your manuscript contains any non-editable files (such as PDFs) you will be required to re-submit an editable file when you submit your revised manuscript, or after editorial acceptance in case no revision is necessary.

[Additional information for TeX/LaTeX users](#)

You are encouraged to use the [Springer Nature LaTeX template](#) when preparing a submission. A PDF of your manuscript files will be compiled during submission using pdfLaTeX and TexLive 2021.

All relevant editable source files must be uploaded during the submission process. Failing to submit these source files will cause unnecessary delays in the production process.

## Style and language

### Improving your written English

Presenting your work in well-written English gives it its best chance for editors and reviewers to understand it and evaluate it fairly.

We have some editing services that can help you to get your writing ready for submission.

### Language quality checker

You can upload your manuscript and get a free language check from our partner AJE. The software uses AI to make suggestions that can improve writing quality. Trained on 300,000+ research manuscripts from more than 400+ areas of study and over 2000 field-specific topics the tool will deliver fast, highly accurate English language improvements. Your paper will be digitally edited and returned to you within approximately 10 minutes.

## Data and materials

For all journals, BioMed Central strongly encourages all datasets on which the conclusions of the manuscript rely to be either deposited in publicly available repositories (where available and appropriate) or presented in the main paper or additional supporting files, in machine-readable format (such as spread sheets rather than PDFs) whenever possible. Please see the list of [recommended repositories](#) in our editorial policies.

For some journals, deposition of the data on which the conclusions of the manuscript rely is an absolute requirement. Please check the Instructions for Authors for the relevant journal and article type for journal specific policies.

For all manuscripts, information about data availability should be detailed in an 'Availability of data and materials' section. For more information on the content of this section, please see the Declarations section of the relevant journal's Instruction for Authors. For more information on BioMed Centrals policies on data availability, please see our [editorial policies](#).

#### Formatting the 'Availability of data and materials' section of your manuscript

The following format for the 'Availability of data and materials' section of your manuscript should be used:

"The dataset(s) supporting the conclusions of this article is(are) available in the [repository name] repository, [unique persistent identifier and hyperlink to dataset(s) in http:// format]."

The following format is required when data are included as additional files:

"The dataset(s) supporting the conclusions of this article is(are) included within the article (and its additional file(s))."

BioMed Central endorses the Force 11 Data Citation Principles and requires that all publicly available datasets be fully referenced in the reference list with an accession number or unique identifier such as a DOI.

For databases, this section should state the web/ftp address at which the database is available and any restrictions to its use by non-academics.

For software, this section should include:

- Project name: e.g. My bioinformatics project
- Project home page: e.g. <http://sourceforge.net/projects/mged>
- Archived version: DOI or unique identifier of archived software or code in repository (e.g. enodo)
- Operating system(s): e.g. Platform independent
- Programming language: e.g. Java
- Other requirements: e.g. Java 1.3.1 or higher, Tomcat 4.0 or higher
- License: e.g. GNU GPL, FreeBSD etc.
- Any restrictions to use by non-academics: e.g. licence needed

Information on available repositories for other types of scientific data, including clinical data, can be found in our [editorial policies](#).

## References

See our [editorial policies](#) for author guidance on good citation practice. Please check the submission guidelines for the relevant journal and article type.

### What should be cited?

Only articles, clinical trial registration records and abstracts that have been published or are in press, or are available through public e-print/preprint servers, may be cited.

Unpublished abstracts, unpublished data and personal communications should not be included in the reference list, but may be included in the text and referred to as "unpublished observations" or "personal communications" giving the names of the involved researchers. Obtaining permission to quote personal communications and unpublished data from the cited colleagues is the responsibility of the author. Only footnotes are permitted. Journal abbreviations follow Index Medicus/MEDLINE.

Any in press articles cited within the references and necessary for the reviewers' assessment of the manuscript should be made available if requested by the editorial office.

### How to format your references

Please check the Instructions for Authors for the relevant journal and article type for examples of the relevant reference style.

**Web links and URLs:** All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript. They should be provided in full, including both the title of the site and the URL, as well as the date the site was accessed, in the following format: The Mouse Tumor Biology Database. <http://tumor.informatics.jax.org/mtbwi/index.do>. Accessed 20 May 2013. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference. Authors may wish to make use of reference management software to ensure that reference lists are correctly formatted.

### Preparing tables

When preparing tables, please follow the formatting instructions below.

- Tables should be numbered and cited in the text in sequence using Arabic numerals (i.e. Table 1, Table 2 etc.).
- Tables less than one A4 or Letter page in length can be placed in the appropriate location within the manuscript.

- Tables larger than one A4 or Letter page in length can be placed at the end of the document text file. Please cite and indicate where the table should appear at the relevant location in the text file so that the table can be added in the correct place during production.
- Larger datasets, or tables too wide for A4 or Letter landscape page can be uploaded as additional files. Please see [below] for more information.
- Tabular data provided as additional files can be uploaded as an Excel spreadsheet (.xls ) or comma separated values (.csv). Please use the standard file extensions.
- Table titles (max 15 words) should be included above the table, and legends (max 300 words) should be included underneath the table.
- Tables should not be embedded as figures or spreadsheet files, but should be formatted using 'Table object' function in your word processing program.
- Color and shading may not be used. Parts of the table can be highlighted using superscript, numbering, lettering, symbols or bold text, the meaning of which should be explained in a table legend.
- Commas should not be used to indicate numerical values.

If you have any questions or are experiencing a problem with tables, please contact the customer service team at [info@biomedcentral.com](mailto:info@biomedcentral.com).

### Preparing additional files

As the length and quantity of data is not restricted for many article types, authors can provide datasets, tables, movies, or other information as additional files.

All Additional files will be published along with the accepted article. Do not include files such as patient consent forms, certificates of language editing, or revised versions of the main manuscript document with tracked changes. Such files, if requested, should be sent by email to the journal's editorial email address, quoting the manuscript reference number. Please do not send completed patient consent forms unless requested.

Results that would otherwise be indicated as "data not shown" should be included as additional files. Since many web links and URLs rapidly become broken, BioMed Central requires that supporting data are included as additional files, or deposited in a recognized repository. Please do not link to data on a personal/departmental website. Do not include any individual participant details. The maximum file size for additional files is 20 MB each, and files will be virus-scanned on submission. Each additional file should be cited in sequence within the main body of text.

If additional material is provided, please list the following information in a separate section of the manuscript text:

- File name (e.g. Additional file 1)
- File format including the correct file extension for example .pdf, .xls, .txt, .pptx (including name and a URL of an appropriate viewer if format is unusual)

- Title of data
- Description of data

Additional files should be named "Additional file 1" and so on and should be referenced explicitly by file name within the body of the article, e.g. 'An additional movie file shows this in more detail [see Additional file 1]'.

For further guidance on how to use Additional files or recommendations on how to present particular types of data or information, please see [How to use additional files](#).

## Review

### Criteria

Reviews are summaries of recent insights in specific research areas within the scope of *Journal of Eating Disorders*.

Key aims of reviews are to provide systematic and substantial coverage of mature subjects, evaluations of progress in specified areas, and/or critical assessments of emerging technologies.

### Plain English summary

All articles in *Journal of Eating Disorders* require a **Plain English summary** of between 100 and 200 words, in addition to the Abstract. This should be a summary of the article written in language suitable for people with lived experience of illness and the wider public to easily understand. It should not contain technical terminology or complicated statistics. It should convey the key messages of your paper.

Please include this within the main body of your manuscript file. Please do not include the plain English summary as part of the official scientific abstract that is requested separately by the journal submission system. The plain English summary should be inserted immediately after the official scientific abstract within the manuscript file under the heading "Plain English summary".

By adding a plain English summary, we hope to broaden the reach of the article and bring it to the attention of a more general audience. Researchers are trained to be highly focused, specific, and conservative with extrapolation and speculation. These attributes are useful for scientific publications, but not for wider public understanding. Many non-scientists have difficulty understanding technical terms and jargon, and the public requires more context-setting by way of introduction and more help drawing a conclusion.

The following resources provide further information: INVOLVE [Plain English summaries resource](#); The Plain English Campaign [guide on medical writing](#); [Cochrane Library](#).

## Preparing your manuscript

The information below details the section headings that you should include in your manuscript and what information should be within each section.

Please note that your manuscript must include a 'Declarations' section including all of the subheadings (please see below for more information).

### Title page

The title page should:

- present a title that includes, if appropriate, the study design e.g.:
  - "A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"
  - or for non-clinical or non-research studies: a description of what the article reports
- list the full names and institutional addresses for all authors
  - if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable through their individual PubMed records, please include this information in the "Acknowledgements" section in accordance with the instructions below
  - Large Language Models (LLMs), such as [ChatGPT](#), do not currently satisfy our [authorship criteria](#). Notably an attribution of authorship carries with it accountability for the work, which cannot be effectively applied to LLMs. Use of an LLM should be properly documented in the Methods section (and if a Methods section is not available, in a suitable alternative part) of the manuscript
- indicate the corresponding author

### Abstract

The Abstract should not exceed 350 words and should be structured with a background, main body of the abstract and short conclusion. Please minimize the use of abbreviations and do not cite references in the abstract.

### Keywords

Three to ten keywords representing the main content of the article.

## Background

The Background section should explain the background to the article, its aims, a summary of a search of the existing literature and the issue under discussion.

## Main text

This should contain the body of the article, and may also be broken into subsections with short, informative headings.

## Conclusions

This should state clearly the main conclusions and include an explanation of their relevance or importance to the field.

## List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.

## Declarations

All manuscripts must contain the following sections under the heading 'Declarations':

- Ethics approval and consent to participate
- Consent for publication
- Availability of data and materials
- Competing interests
- Funding
- Authors' contributions
- Acknowledgements
- Authors' information (optional)

Please see below for details on the information to be included in these sections.

If any of the sections are not relevant to your manuscript, please include the heading and write 'Not applicable' for that section.

### Ethics approval and consent to participate

Manuscripts reporting studies involving human participants, human data or human tissue must:

- include a statement on ethics approval and consent (even where the need for approval was waived)
- include the name of the ethics committee that approved the study and the committee's reference number if appropriate

Studies involving animals must include a statement on ethics approval and for experimental studies involving client-owned animals, authors must also include a statement on informed consent from the client or owner.

See our [editorial policies](#) for more information.

If your manuscript does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.

### Consent for publication

If your manuscript contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.

You can use your institutional consent form or our [consent form](#) if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).

See our [editorial policies](#) for more information on consent for publication.

If your manuscript does not contain data from any individual person, please state "Not applicable" in this section.

### Availability of data and materials

All manuscripts must include an 'Availability of data and materials' statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the manuscript along with any conditions for access.

Authors are also encouraged to preserve search strings on searchRxiv <https://searchrxiv.org/>, an archive to support researchers to report, store and share their searches consistently and to enable them to review and re-use existing searches. searchRxiv enables researchers to obtain a digital object identifier (DOI) for their search, allowing it to be cited.

Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

- The datasets generated and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]
- The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.
- All data generated or analysed during this study are included in this published article [and its supplementary information files].
- The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.
- Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.
- The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [third party name].
- Not applicable. If your manuscript does not contain any data, please state 'Not applicable' in this section.

More examples of template data availability statements, which include examples of openly available and restricted access datasets, are available [here](#).

BioMed Central strongly encourages the citation of any publicly available data on which the conclusions of the paper rely in the manuscript. Data citations should include a persistent identifier (such as a DOI) and should ideally be included in the reference list. Citations of datasets, when they appear in the reference list, should include the minimum information recommended by DataCite and follow journal style. Dataset identifiers including DOIs should be expressed as full URLs. For example:

Hao Z, AghaKouchak A, Nakhjiri N, Farahmand A. Global integrated drought monitoring and prediction system (GIDMaPS) data sets. figshare. 2014.

<http://dx.doi.org/10.6084/m9.figshare.853801>

With the corresponding text in the Availability of data and materials statement:

The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].<sup>[Reference number]</sup>

If you wish to co-submit a data note describing your data to be published in [BMC Research Notes](#), you can do so by visiting our [submission portal](#). Data notes support [open data](#) and help authors to comply with funder policies on data sharing.

Co-published data notes will be linked to the research article the data support ([example](#)).

### Competing interests

All financial and non-financial competing interests must be declared in this section.

See our [editorial policies](#) for a full explanation of competing interests. If you are unsure whether you or any of your co-authors have a competing interest please contact the editorial office.

Please use the authors initials to refer to each authors' competing interests in this section.

If you do not have any competing interests, please state "The authors declare that they have no competing interests" in this section.

### Funding

All sources of funding for the research reported should be declared. If the funder has a specific role in the conceptualization, design, data collection, analysis, decision to publish, or preparation of the manuscript, this should be declared.

### Authors' contributions

The individual contributions of authors to the manuscript should be specified in this section. Guidance and criteria for authorship can be found in our [editorial policies](#). Please use initials to refer to each author's contribution in this section, for example: "FC analyzed and interpreted the patient data regarding the hematological disease and the transplant. RH performed the histological examination of the kidney, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript."

### Acknowledgements

Please acknowledge anyone who contributed towards the article who does not meet the criteria for authorship including anyone who provided professional writing services or materials.

Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements section.

See our [editorial policies](#) for a full explanation of acknowledgements and authorship criteria.

If you do not have anyone to acknowledge, please write "Not applicable" in this section.

Group authorship (for manuscripts involving a collaboration group): if you would like the names of the individual members of a collaboration Group to be searchable through their individual PubMed records, please ensure that the title of the collaboration Group is included on the title page and in the submission system and also include collaborating author names as the last paragraph of the "Acknowledgements" section. Please add authors in the format First Name, Middle initial(s) (optional), Last Name. You can add institution or country information for each author if you wish, but this should be consistent across all authors.

Please note that individual names may not be present in the PubMed record at the time a published article is initially included in PubMed as it takes PubMed additional time to code this information.

#### Authors' information

This section is optional.

You may choose to use this section to include any relevant information about the author(s) that may aid the reader's interpretation of the article, and understand the standpoint of the author(s). This may include details about the authors' qualifications, current positions they hold at institutions or societies, or any other relevant background information. Please refer to authors using their initials. Note this section should not be used to describe any competing interests.

#### Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.

## Participants needed for research exploring the eating disorder voice

Take part in a trainee Clinical Psychologist's study, exploring how the eating disorder voice (often experienced as an internal commentary which focuses on weight, shape, and diet and how these relate to self-worth) develops, and how past experiences and emotions affect its development.

You do *not* need to have a diagnosis of an eating disorder to take part- you only need to be over the age of 18 years old and have had experience of something like the above-described phenomenon (past or present) to participate.

The study involves completing a series of questionnaires, which shouldn't take you more than 30-45 minutes in total. This project has received full ethical approval, and all information you provide will be kept entirely anonymous.

Your contribution will help us to understand this yet little understood but common experience better. You can also enter a prize draw to win £50 worth of shopping vouchers.

Click the link below if you are interested in participating! And email me at [matthewsk2@cardiff.ac.uk](mailto:matthewsk2@cardiff.ac.uk) if you have any questions.



## What is the study about?

We want to find out about how childhood trauma can impact the development of a specific aspect of eating disorders called the 'eating disorder voice'. This is an experience many people with eating disorders describe. It is an internal commentary which focuses on weight, shape, and diet and how these relate to self-worth. It can be a companion and helpful guide at first to some people, but over time can become degrading and punitive, and can make recovering from eating disorders difficult.

## Why is it important?

We don't know much about the Eating Disorder Voice; why and how it develops, and why people experience the voice differently. Some research has found that up to 90% of individuals with symptoms of an eating disorder experience a voice, however, and so it is likely important! If we can understand the voice and why people experience it, this may be useful in helping improve treatment for eating disorders.

## What would it involve for you?

All we ask you to do is follow the link to the study (see below), give our information sheet a read (which explains the project and the ethical considerations in more detail), along with our consent form, and then complete a series of questionnaires. In total, it should take around 30-45 minutes of your time. You will be asked about topics such as experiences of trauma, eating disorder symptoms, and emotion regulation and beliefs about emotions. These may be difficult things to think about for you, so we've included after the questionnaires a debrief page with some support lines and websites you could access if you need to.

Images of updated version shared to social media (text is the same)



**Participants needed for research exploring the eating disorder voice**

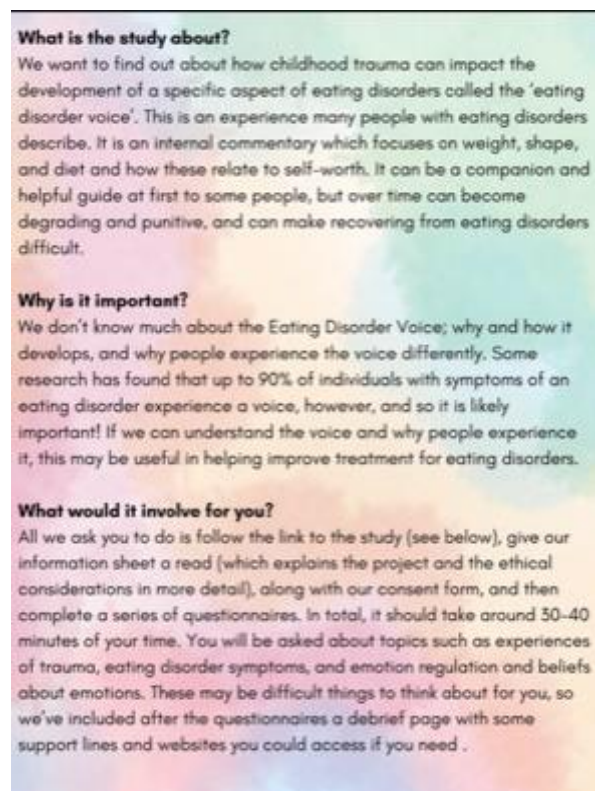
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Your contribution will help us to understand this yet little understood but common experience better. You can also enter a prize draw to win £50 worth of shopping vouchers.

Click the link below if you are interested in participating! And email me at [matthewsk2@cardiff.ac.uk](mailto:matthewsk2@cardiff.ac.uk) if you have any questions.



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We don't know much about the Eating Disorder Voice; why and how it develops, and why people experience the voice differently. Some research has found that up to 90% of individuals with symptoms of an eating disorder experience a voice, however, and so it is likely important! If we can understand the voice and why people experience it, this may be useful in helping improve treatment for eating disorders.

**What would it involve for you?**

All we ask you to do is follow the link to the study (see below), give our information sheet a read (which explains the project and the ethical considerations in more detail), along with our consent form, and then complete a series of questionnaires. In total, it should take around 30-40 minutes of your time. You will be asked about topics such as experiences of trauma, eating disorder symptoms, and emotion regulation and beliefs about emotions. These may be difficult things to think about for you, so we've included after the questionnaires a debrief page with some support lines and websites you could access if you need .

## **Appendix H: Ethical approval confirmation**

Dear Kirsty,

The Ethics Committee has considered your revised PG project proposal: Childhood Trauma and the Eating Disorder Voice: The Role of Emotions (EC.23.04.25.6786R).

Your revised project proposal has received a **Favourable Opinion** based on the information described in the proforma and supporting documentation.

### **Additional approvals**

This letter provides an ethical opinion only. You must not start your research project until all appropriate approvals are in place.

### **Conditions of the favourable opinion**

The favourable opinion is subject to the following conditions being met:

- You must retain a copy of this decision letter with your Research records.
- Please note that if any changes are made to the above project then you must notify the Ethics Committee.
- Please use the EC reference number on all future correspondence.
- The Committee must be informed of any unexpected ethical issues or unexpected adverse events that arise during the research project.
- The Committee must be informed when your research project has ended. This notification should be made to [psychethics@cardiff.ac.uk](mailto:psychethics@cardiff.ac.uk) within three months of research project completion.
- All data will be retained/processed/destroyed in line with University policy.

### **Amendments**

Any substantial amendments to proposal previously reviewed by the Committee must be submitted to the Committee via [psychethics@cardiff.ac.uk](mailto:psychethics@cardiff.ac.uk) for consideration using the PSYCH amendment form and cannot be implemented until the Committee has confirmed it is satisfied with the proposed amendments.

### **Complaints/Appeals**

If you are dissatisfied with the decision made by the Committee, please contact [psychethics@cardiff.ac.uk](mailto:psychethics@cardiff.ac.uk) in the first instance to discuss your complaint. If this discussion does not resolve the issue, you are entitled to refer the matter to the Head of School for further consideration.

The Head of School may refer the matter to the Open Research Integrity and Ethics Committee (ORIEC), where this is appropriate. Please be advised that ORIEC will not normally interfere with a decision of the Committee and is concerned only with the general principles of natural justice, reasonableness and fairness of the decision.

**The Committee reminds you that it is your responsibility to conduct your research project to the highest ethical standards and to keep all ethical issues arising from your research project under regular review.**

**You are expected to comply with Cardiff University's policies, procedures and guidance at all times, including, but not limited to, its [Policy on the Ethical Conduct of Research involving Human Participants, Human Material or Human Data](#) and our [Research Integrity and Governance Code of Practice](#).**

Kind regards,  
Deborah

School of Psychology Research Ethics Committee  
The 2022/3 list of Full proposal deadlines and Ethics - [Home \(sharepoint.com\)](#)

## Childhood Trauma and the Eating Disorder Voice

### Participant Information Sheet

We'd like to invite you to take part in our research study. Before you decide, it is important that you understand why the research is being done and what it would involve for you. Please take time to read this information and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, please ask us. Our contact information is at the end of this page.

#### **What is the purpose of the study?**

We are interested in exploring the Eating Disorder Voice (EDV), a phenomenon often reported by individuals who have experience with eating disorders, but one which is not well understood due to limited research. The EDV has been described as an internal commentary (which falls somewhere on the spectrum from internal thoughts to an external, separate voice, and differs from person to person) which focuses on weight, shape and eating and how they relate to self-worth. The voice can be experienced as supportive, helpful, guiding, but can also be experienced as hostile, aggressive, and cruel. (Often, people report the voice experience changes depending on, for example, how long the EDV has been around- as it can get more hostile over time- or how well they follow the EDV's instructions).

Specifically, we are interested in how and why the eating disorder voice develops, and the roles previous trauma, emotion regulation and beliefs about emotion play. If we have a better understanding of how these factors work together, this might help us to improve treatment for eating disorders. This would be beneficial, as currently treatment for eating disorders only has a limited benefit for lots of people, according to research, and this could in part be due to the fact that we don't fully understand or give enough attention to the eating disorder voice in treatment currently.

#### **Why have I been invited to participate?**

You are invited to participate in this study if you are **over 18 years of age** and **have personal experience of an Eating Disorder Voice**, and so can give us the best insight into the voice and emotions and the role they play in the development of eating disorders. If you are under 18 years old, or do not have experience of an Eating Disorder Voice, we ask that you do not complete these questionnaires.

#### **Do I have to take part?**

- You do not have to take part in this study.
- You may choose to withdraw from the study at any point. At the bottom of each questionnaire page there is a question asking if you wish to withdraw. If you wish to withdraw (that is, no longer complete the survey) you can simply select the "I wish to withdraw" option to this question, and click the 'next' button in the bottom right-hand corner. This will automatically take you to the debrief page (a page with support lines and helpful links and websites) and the end of the study. You can also withdraw by simply

closing the survey window on your computer or phone. None of your responses will be saved if you do so. You do not have to give a reason for withdrawing.

- As your questionnaires are completed entirely anonymously, we will not be able to remove your data once you have submitted your responses; so once you have submitted your responses (which will happen when you click the "next" button on the debrief page) you can no longer withdraw from the study.
- Your decision to participate will have no impact on your care and support currently or in the future, nor will it affect your ability to participate in any future research projects.

#### **What will happen to me if I do take part?**

- If you choose to continue with the study, when you proceed to the next page you will be presented with a consent form to complete, followed by a series of questionnaires (if you agree to all points of the consent form). The survey should take approximately 30 minutes to complete in total.
- You will be asked to complete questionnaires relating to disordered eating symptoms, experience of the eating disorder voice, childhood experiences of trauma and/or abuse, emotion regulation strengths and areas of difficulty, understanding of and ability to communicate your emotional experiences, and beliefs about your emotional experiences.
- You will also be asked your age, ethnicity, gender and sexual orientation, as well as any specific mental health diagnoses you've received and whether you have received or are currently receiving treatment for your mental health.
- We kindly ask you try to complete all of the questionnaires, however, if there are any questions you do not feel comfortable answering, it is fine to leave these blank.
- When you finish the questionnaire, you will be presented with a page of resources and ways of accessing support should any of the questions bring up anything difficult for you.
- You are able to withdraw at any time, by selecting the "I wish to withdraw" option at the bottom of each page, and then clicking the 'next' button; you will be taken automatically to the debrief page at the end of the survey if you do this.
- Once you have submitted your questionnaires, we won't ask anything else of you. We will analyse your scores alongside those of the other participants' and will use these in our analysis and write-up of the study.

#### **Are there any possible disadvantages or risks from taking part?**

- The questionnaires will cover some emotive and personal topics about your eating disorder, difficult childhood experiences, and your ability to understand and regulate your emotions as well as beliefs about emotions you may hold. The questionnaires may bring up difficult thoughts, feelings or memories which could potentially cause you some distress, however you do not have to answer any questions that you are not comfortable with and can stop taking part at any time.
- There will be a page at the end of the questionnaires with some resources you can access to support you, if you feel the questionnaires have caused you distress; websites, support call and text lines, and a relaxation video you can watch if this would be of use. We also recommend you get in touch with a member of your support network (Friends, family and/or any professionals involved in supporting you) should you feel this would be helpful.

#### **What should I consider?**

- Before you start the questionnaires, consider if you have the time and head space to do so. It will take you some time, and you will be asked questions which may bring up difficult memories or emotions; make sure you allow yourself time to complete the questionnaires, choose a day, place and time where you can feel calm, and won't be interrupted too much.

- Consider whether the above questionnaire topics are likely to cause you any distress, and whether you might need someone around to offer you support should you require it.
- Please also ensure you meet our study's criteria; that is, you're over 18 years of age and have experience of an Eating Disorder Voice.

#### **What are the possible benefits of taking part?**

- While we are unsure of potential outcomes of the investigation, it is likely that your feedback could help us to build understanding of eating disorder experiences and the eating disorder voice. This could be very beneficial in shaping and designing therapeutic interventions which better meet the needs of and produce better long-term outcomes for individuals experiencing an eating disorder.
- The questionnaires may also be a useful exercise in reflection for you and could possibly help you to identify experiences which it would be beneficial to address in your recovery process.

#### **Will there be any compensation for my time?**

If you choose to, you can enter into a prize draw to win £50 one4all shopping voucher to spend at a shop of your choice (limited to stores accepting this kind of voucher). You do not have to enter the prize draw, but if you do want to, you can follow a link at the end of the questionnaires which will take you to another questionnaire form in which you will be asked to enter your email address. This information will only be used for the prize draw and will not be connected with your responses on the questionnaires. Your email address will be stored securely and separately from the responses you provided in the questionnaires you have completed, to maintain your confidentiality.

#### **Will my General Practitioner/family doctor (GP) be informed of my participation?**

No, your GP will not be informed.

#### **How will my data be stored?**

- All data will be handled in accordance with the Data Protection Act (2018), the General Data Protection Regulation (2018) and Cardiff University data handling and management policies.
- Your data will be stored as password protected files on secure Cardiff University servers, accessed via password protected Cardiff University computers.
- Any data that may include identifiable information, i.e. your email address if you wish to enter the prize draw, will be stored securely and separately from the rest of your research data. We will not ask you for any other personal identifiable information (that is, your name, address, or occupation).
- Your email address, should you choose to enter the prize draw, will be deleted as soon as the prize draw has been completed. Your email address will not be linked at all with your questionnaire responses.
- Only the research team will have access to your data. If required, limited individuals from the relevant regulatory authorities may also have access to your data for monitoring and auditing purposes.
- We will keep your questionnaire responses for 15 years after the study has finished, in line with Cardiff University data retention policy.

#### **What are your choices about how your information is used?**

- You can stop being part of the study at any time, without giving a reason. However, once you have submitted your responses to the survey (which happens at the end, when you click the "next" button on the debrief page), you are no longer able to withdraw.

- We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

### **Where can you find out more about how your information is used?**

You can find out more about how we use your information

- By asking one of the research team (contact details at the bottom of this page).
- By viewing the Cardiff University Data Protection Policy and Privacy Notices: <https://www.cardiff.ac.uk/public-information/policies-and-procedures/data-protection>
- By contacting the Cardiff University Data Protection Officer by email: [inforequest@cardiff.ac.uk](mailto:inforequest@cardiff.ac.uk) or in writing to: Assurance Services, Cardiff University, Friary House, Greyfriars Road, Cardiff CF10 3AE

### **What happens at the end of the study?**

- We will produce a report of the findings, which we hope will be published in a psychological journal. No information which could identify you as a participant will be included.
- This piece of research is also being undertaken as part of a doctoral thesis project, and so will contribute to fulfilment of an educational requirement (Within the Clinical Psychology doctorate programme). Thus, the study (when completed) will be assessed by external markers as part of this process.
- It is possible the key findings of the study may be presented at conferences or meetings with other professionals.
- We will share the project findings on our website <https://www.adfer.co.uk/> and will also share a summary of the research with the NHS and charity services who have been involved, to disseminate to their service-users.

### **What if there is a problem?**

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact the Cardiff University School of Psychology Research Ethics Committee secretary ([psychethics@cardiff.ac.uk](mailto:psychethics@cardiff.ac.uk)), or the project lead: Dr Marc Williams ([williamsm93@cardiff.ac.uk](mailto:williamsm93@cardiff.ac.uk))

### **How have patients and the public been involved in this study?**

Several service users who work with Cardiff University have been consulted with regards to the design of the study, the questionnaires included, and this information sheet and the consent form, and debrief page after the questionnaires. This helped us to consider accessibility of information, as well as feasibility and acceptability of the questionnaires.

### **What if there is a problem?**

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact the Cardiff University School of Psychology Research Ethics Committee secretary ([psychethics@cardiff.ac.uk](mailto:psychethics@cardiff.ac.uk)), or the project lead: Dr Marc Williams ([williamsm93@cardiff.ac.uk](mailto:williamsm93@cardiff.ac.uk))

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and debrief page after the questionnaires. This helped us to consider accessibility of information, as well as feasibility and acceptability of the questionnaires.

### **Who is organising the study?**

This study forms part of a Trainee Clinical Psychologist's (Kirsty Matthews) training. The study is organised by Kirsty Matthews and her supervisors, Dr Marc Williams and Dr Falguni Nathwani, with support from Dr John Fox. Kirsty Matthews, Dr Marc Williams and Dr Falguni Nathwani are NHS employees affiliated with the Cardiff University Clinical Psychology Doctoral Programme, Dr John Fox is an NHS employee affiliated with the Liverpool University Clinical Psychology Doctoral Programme.

### **Who has reviewed the study?**

- The proposal of the study has been peer-reviewed by staff within the Cardiff University Clinical Psychology Doctoral Programme.
- Cardiff University approval have been obtained for the study. The project has been reviewed by an ethics committee, made up of individuals who are uninvolved in the present project, to protect participants' interests. This has occurred through the Cardiff University ethics committee and been given favourable opinion from both.

### **Further information and contact details**

Kirsty Matthews (Trainee Clinical Psychologist)

Email: matthewsk2@cardiff.ac.uk

Telephone: 02929870582

Address: Clinical Psychology doctorate, 11th floor Tower Building, 70 Park Place, Cardiff, CF10 3AT.

Dr Marc Williams (Clinical Psychologist, project supervisor)

Email: williamsm93@cardiff.ac.uk

Telephone: 02929870582

Address: Clinical Psychology doctorate, 11th floor Tower Building, 70 Park Place, Cardiff, CF10 3AT.

Dr Falguni Nathwani (Clinical Psychologist, project supervisor)

Email: nathwanif@cardiff.ac.uk

Telephone: 02929870582

Address: Clinical Psychology doctorate, 11th floor Tower Building, 70 Park Place, Cardiff, CF10 3AT.

Participant Information Sheet v0.2 [24/03/2023]

**Appendix J: Consent form**

**Childhood Trauma and the Eating Disorder Voice**

**Consent form**

Chief Investigator: Dr Marc Williams  
Researcher: Kirsty Matthews

*Please check box  
if you agree with  
the statement*

I confirm that I have read the information sheet (version 2, dated 24/03/2023) for this study. I have had time to think about the information and ask questions and have had these questions answered satisfactorily and I know how to contact the research team at any stage.	
I agree to take part and complete a series of questionnaires, which should take approximately 30 minutes total.	
I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected. I understand that if I withdraw once my questionnaire responses have already been submitted, the study team will be unable to re-identify and destroy my data.	
I am aware that some personal information (age, ethnicity, gender, sexual orientation and mental health diagnosis/ diagnoses) will be requested for this study. My information will remain anonymous, and my questionnaire responses will be identifiable only by a unique code, not my name.	
I understand that, should I choose to enter into a prize draw to win a £50 one4all shopping voucher, I will be asked to provide my email address in a second, separate questionnaire page upon completion of the questionnaires. My email address will not be linked with my responses to the previous questionnaires and will be deleted as soon as the prize draw has been completed. I understand I do not have to enter the prize draw if I do not want to.	
I understand that my data will be handled and stored in accordance with the Data Protection Act (2018) and General Data Protection Regulation (2018). I understand that (with the exception of my email address), my data will be stored anonymously for 15 years after the end of the study, in line with Cardiff University data retention policies; it will remain password protected and will be stored on Cardiff University servers.	
I understand that data collected during the study will be stored and analysed by the research team at Cardiff University and may be reviewed by limited individuals from the UK regulatory authorities or the NHS Health Board, where it is relevant to my	

taking part in this research. I give permission for these individuals to have access to my information on the understanding that all information will remain confidential.	
I understand that the information I provide will be utilised within a research project that is a part of an academic thesis and will likely be published in a journal and available to the general public, and that no identifiable information will be included in the write up of this report.	
<b>I consent to participation in this study.</b>	

## Debrief form

Project title: Childhood Trauma and the Eating Disorder Voice: The Role of Emotions.

Thank you for taking the time to complete the questionnaires for this study, we are hugely grateful for your participation.

**To ensure your responses to the survey are recorded, you need to click the "next" button at the bottom of this page.**

As a thank you for your time, we would like to offer you the chance to enter a prize draw, to win £50 worth of shopping vouchers to spend at a shop of your choice (limited to stores accepting this kind of voucher). You do not have to enter the prize draw, but if you do want to, you can follow the link below, which will take you to another questionnaire form in which you will be asked to enter your email address. This information will only be used for the prize draw and will not be connected with the responses you provided in the questionnaires you have completed, to maintain your confidentiality.

**This link opens a new window separate to this one. Please ensure you click the next button at the bottom of this page in addition to completing the below survey to enter the prize draw.**

[https://cardiffunipsych.eu.qualtrics.com/jfe/form/SV\\_2o9tsdj4vMJH542](https://cardiffunipsych.eu.qualtrics.com/jfe/form/SV_2o9tsdj4vMJH542)

You have completed questionnaires as part of a study exploring the association between childhood trauma, differences in emotion regulation and beliefs about emotion, and the development of an Eating Disorder Voice (EDV). Your feedback will be helpful in furthering our understanding of the EDV, a very commonly reported but so far under-researched phenomenon; and could help in guiding psychological interventions for eating disorders, which at present show only limited effectiveness and have largely been neglectful of the EDV.

The questionnaires have covered some difficult topics, which may bring up difficult memories or emotions. If you feel you need additional support due to any impact this study has had on your mental health or wellbeing, we encourage you to seek support from a professional you feel comfortable with, such as a nurse or psychologist, or a friend or family member. Additionally, there are several services available to provide support, we have included below the links and numbers for your use if needed.

- **BEAT:** <https://www.beateatingdisorders.org.uk/>
- **BEAT support lines** (open from 9am-midnight weekdays, 4pm-midnight weekends and bank holidays): **WALES:** 0808 801 0433. **ENGLAND:** 0808 801 0677. **SCOTLAND:** 0808 801 0432. **N. IRELAND:** 0808 801 0434
- **Samaritans support line** (open 24/7): 116 123 Website: <https://www.samaritans.org/>
- **The Mix** (for under 25s): <https://www.themix.org.uk/>
- **The Mix support line** (open 4pm-11pm Monday-Saturday): 0808 808 4994
- **SHOUT text support (available 24/7):** 85258

### **Relaxation video**

We have also included below a link to a relaxation video, which you are able to view should you feel it would be beneficial. (it lasts 5 minutes.)

[Leaves on a stream: Manage negative thoughts with this meditation exercise - Flow \(youtube.com\)](#)

Or, if you'd prefer, here's a link to a video of happy music and clips of dogs having fun! It's 3 hours, watch for as long as you want!

[Cute 4K Dogs and Puppy Mood Booster TV Background, Happy Ambient Music Ambience - Upbeat \(youtube.com\)](#)

If you have any questions about the study, please get in contact with the researchers; see below for our contact details.

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact the Cardiff University School of Psychology Research Ethics Committee secretary ([psychethics@cardiff.ac.uk](mailto:psychethics@cardiff.ac.uk)), or the project lead: Dr. Marc Williams ([williamsm93@cardiff.ac.uk](mailto:williamsm93@cardiff.ac.uk))

Again, we are so grateful for your time and effort in completing our study. Thank you!

Kirsty Matthews (Trainee Clinical Psychologist)

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Debrief Form v0.2 [24/03/2023]

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Cardiff University has advice and support, which can be accessed here:

- For **self-help resources**, follow this link: [Self-help resources - Student intranet - Cardiff University](#)
- For **information on counselling and wellbeing support** and drop ins, follow this link: [Counselling and wellbeing appointments - Student intranet - Cardiff University](#)
- For access to the free app, which brings students facing similar struggles together, to talk (anonymously, and in a professionally-moderated online space): [TalkCampus - Student intranet - Cardiff University](#)

- TalkCampus also has a **crisis line**, which you can call to speak to a trained professional if you are struggling and need support: **0800 031 8813**.

Other resources available:

- **BEAT:** <https://www.beateatingdisorders.org.uk/>
- **BEAT support lines** (open from 9am-midnight weekdays, 4pm-midnight weekends and bank holidays): **WALES:** 0808 801 0433. **ENGLAND:** 0808 801 0677. **SCOTLAND:** 0808 801 0432. **N. IRELAND:** 0808 801 0434
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