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Plant-based recovery from restrictive eating disorder: A qualitative enquiry

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ABSTRACT

Objectives: Plant-based/vegan diets are growing in popularity. There are growing numbers of individuals adopting plant-based diets and there are legitimate concerns from professionals that this can enable food restriction or mask disordered eating. The aim of this study was to examine the role a plant-based diet can play for those in recovery from restrictive eating disorders (anorexia and bulimia nervosa).
Methods: Interviews conducted with fourteen individuals who identified as having a restrictive eating disorder for which a plant-based diet played/plays an important part in their recovery. Semi-structured interviews explored the individual's lived experiences and motivations of adopting a plant-based diet, and perceptions of the role it played in recovery. Data was transcribed verbatim and analyzed using thematic analysis (Braun & Clarke, 2006).
Results: Three key themes with six contributory subthemes were identified. Key themes were *plant-based as a gateway to recovery*, *the changing value of food*, and *the function of control.* Theme content highlighted an evolving role of identity and community, with a shift in meaning and value of food described, and for some, the development of a new relationship with their body. This facilitated a de-coupling of anxieties about food and promoted positive experiences of eating, esteem and empowerment.
Conclusions: These findings present a unique insight into the role that plant-based eating may play in recovery for some restrictive eating disorders. The data demonstrated that motivations to control food intake may contribute to the decision to eat plant-based. However, for these individuals it provided a "gateway" to a new more meaningful relationship with food. These findings highlight some of the risks and benefits of eating plant-based in recovery and an important role for health professionals in understanding/supporting individuals during recovery. w/c 280

1. Introduction

Plant-based eating, namely vegetarianism (i.e. abstinence from meat, poultry, fish, and seafood) and veganism (i.e. abstinence from meat, poultry, fish, seafood, dairy, eggs, and other animal-based products) have seen a remarkable rise in interest and popularity in the past decade. The number of individuals opting for a plant-based diet quadrupled between 2014 and 2018, with between 1 and 2% of the United Kingdom population identifying as plant-based or vegan (Allès et al., 2017; Bryant, 2019). One commonly cited reason for this increase is the associated health benefits (Craig & Mangels, 2009) including prevention of type 2 diabetes (Barnard, Katcher, Jenkins, Cohen, & Turner-McGrievy, 2009; Klementova et al., 2019), lowering risk for certain types of cancer, including stomach (Key et al., 2009) and colon (Alewaeters, Clarys, Hebbelinck, Deriemaeker, & Clarys, 2005), cardiovascular diseases (Bardone-Cone et al., 2012; Radnitz, Beezhold, & DiMatteo, 2015) and blood pressure (Klementova et al., 2019). Importantly plant-based diets are also associated with an ethical stance and to reduce the huge environmental impact of meat and dairy production (Lindeman & Sirelius, 2001).

Despite the reported beneficial effects of plant-based diets, potential adverse effects of vegetarianism and veganism on wellbeing have attracted attention. It has been postulated that vegetarianism and eating disorders (ED) can be intertwined phenomena, with eating-disordered groups reporting higher rates of vegetarianism (Baş, Karabudak, & Kiziltan, 2005; Lindeman, Stark, & Latvala, 2000) and vegetarian adolescents at greater risk for ED and extreme weight-control behaviours compared to non-vegetarian controls (Robinson-O'Brien et al., 2009). Furthermore, there is a positive association of vegetarianism with disordered eating behaviours (Klopp, Heiss, & Smith, 2003) such as using laxatives or purging for weight control, especially among adolescents (Neumark-Sztainer, Story, French, & Resnick, 1997; Perry,

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Mcguire, Neumark-Sztainer, & Story, 2001). Indeed, motivations for vegetarianism cited by adolescents and young adults include weight control and dietary restraint (Klopp et al., 2003). It has also been suggested that the combination of public health and societal messaging about the increasing prevalence and negative sequalae of obesity (Finkelstein et al., 2012) alongside society's well documented ideals of thinness (So & Kwon, 2023) may mediate a potential link between vegetarianism and weight control. However, evidence to support the hypothesis that vegetarianism is a factor in onset of ED has been inconsistent (Timko, Hormes, & Chubski, 2012).

Transdiagnostic explanations of eating disorders emphasize a central and perpetuating role for control (Fairburn, Cooper, & Shafran, 2003). Historically anorexia nervosa has been described as a syndrome of pathological self-control (Bryant-Waugh & Lask, 1995) and (Garfinkel and Garner, 1984, pp. 27–46) suggested that a decrease in weight leads to and perpetuates a sense of mastery and control through the ED (Young & Ensing, 1999). Plant-based eating has been described as a socially acceptable way to control calorie restriction or justify avoidance of certain food groups (Bardone-Cone et al., 2012), providing valid reasons to both help manage and avoid social situations that involve food, or to eat only "safe" foods (Krizmanic, 1992). It has been argued that some individuals may convert to plant-based eating in an attempt to conceal eating disorder symptomology, using it as a 'smokescreen' for ED (Lindeman et al., 2000). It therefore makes sense that health care professionals have concerns about motivations for eating plant-based and/or vegetarianism in individuals with ED (Bardone-Cone et al., 2012; Craig & Mangels, 2009), especially when the ED predates the adoption of a plant-based diet (O′ Connor et al., 1987). This is despite evidence that "*semi-vegetarianism as opposed to pure vegetarianism or veganism – is the most likely related to disordered eating*" (Timko et al., 2012, p. 982).

The majority of the literature exploring this topic has focused on vegetarianism, and there is a lack of research investigating the experiences of individuals with ED who have adopted a plant-based or vegan diet (Dyett, Sabaté, Haddad, Rajaram, & Shavlik, 2013; Radnitz et al., 2015) despite the rapid increase in uptake (Allès et al., 2017; Galmiche, Déchelotte, Lambert, & Tavolacci, 2019). Even with the concerns of professionals there has been limited study or evidence to suggest that veganism or plant-based eating is associated with a higher risk of disordered eating behaviours (Robinson-O'Brien, Story, & Heim, 2009). While the transition to plant-based eating in ED is most commonly attributed to ethical and moral reasons there has been a reported increase in the number of individuals seeking treatment for ED who are following a plant-based or vegan diet (O'Connor, 2019). It is unclear whether this in part reflects the more global increase in popularity of plant-based diets (Allès et al., 2017; Bryant, 2019) or may in some way serve as a function of ED pathology. Given the complexity and risks of ED there is a need to better understand the role that plant-based diets play for those living with ED and for those providing clinical support and in-patient services (Brown, Fuller, & Simic, 2019). In particular, there is a pressing need to better examine and explore the mechanisms through which adopting a plant-based diet serves to perpetuate, mask or challenge eating disorder pathology and behaviour.

Arguably, there can be benefits for adopting plant-based eating during recovery. Adopting a plant-based diet has been reported to contribute positively to the individual's relationship with food and helped people overcome disordered eating patterns (Costa, Gill, Morda, & Ali, 2019). Indeed, learning about the health benefits of plant-based diets promotes more health-oriented food choices. Plant-based eating and vegan products are typically lower in calorie density and saturated fat than animal-derived products (Najjar & Feresin, 2019) and individuals accustomed to eating very small volumes of food may feel more physically comfortable increasing the frequency or volume of their meals, which can serve as graded desensitization hereby helping people overcome food-related anxieties and/or maladaptive perceptions of satiety (Sharan & Sundar, 2015). The role of ethical motivations may also play an important role in which eating plant-based can contribute to esteem building and sense of identity - for example, viewing food as an extension of their ethical belief system also has the potential to challenge food-related anxiety and enhance self-worth (Costa et al., 2019).

Further study is needed to understand the potential role of plant-based diets in ED. As those with an ED are a group at high-risk of chronic psychological and physical morbidity (Wolff & Treasure, 2008), any masking and maintenance of disordered eating may place individuals at further risk and/or disrupt long term recovery. However, plant-based eating may also provide useful strategies and benefits that could play a potentially useful role in recovery. Evidently understanding more about the motivations and impact of eating plant-based in recovery from ED would be beneficial. In doing so lessons may be learned about what and how best to support individuals with ED in recovery. The current study aimed to examine this novel phenomenon by exploring the experiences and motivations for a plant-based diet in individuals with ED.

A qualitative research design was adopted, as the data being collected and interpreted are not easily reduced to numbers, ensuring to consider social factors (Anderson, 2010) and to encourage a broader insight into the lived experience. Moreover, the flexibility of a qualitative design allowed for a more exploratory rather than confirmatory analysis of data; appropriate for such a novel topic. The study employed a thematic analysis (Braun & Clarke, 2006, 2012) of data collected through semi-structured interviews. Building on early research (Barthels, Meyer, & Pietrowsky, 2018; Costa et al., 2019; Fuller, Brown, Rowley, & Elliott-Archer, 2022; Stanescu & Stanescu, 2019) this qualitative study aims to provide a rich and insightful account of the motivations, impact and experiences of individuals with ED who have chosen to adopt a plant-based diet during recovery from ED. The inductive qualitative approach adopted enables the exploration of this novel and evolving life experience independent of theoretical positioning. In keeping with the aims of our study, we adopted an interpretivist approach (Lincoln, Lynham, & Guba, 2011) to ensure emphasis on understanding individuals' 'lived experiences'. This approach ensures that meaning is developed and derived through language and shared understanding (Gratton & Jones, 2004; Schwandt, 2000). Consistent with the interpretivist approach, we used a qualitative method to obtain insight into participants' experiences/thoughts and employed interviews to allow participants to describe and interpret their own experiences of the phenomena being studied.

2. Methods

2.1. Participants

The study consisted of 14 female participants (see Table 1) aged 18-31y (mean 22.75y) who responded to a recruitment advert for a study

Table 1
Participant information.

Pt no	Pseudonym	Age	h/o ED
1	Holly	18	AN
2	Sarah	18	AN
3	Kerry	19	B
4	Sophie	22	B
5	Tyla	23	B
6	Kathryn	24	B
7	Rachael	25	AN
8	Addison	22	AN
9	Francesca	30	AN
10	Cate	18	AN
11	Monica	31	AN
12	Robin	23	AN
13	Victoria	27	AN
14	Piper	22	AN

AN – Anorexia Nervosa; BN – Bulimia Nervosa; h/o ED – history of eating disorder.

examining how plant-based diets are helping individuals in recovery from anorexia or bulimia nervosa. Participants were recruited using an opportunity sampling method (Langdridge & Butt, 2004), namely through the dissemination of advertisements on social networking websites, including Facebook, Instagram, and Twitter - a valuable tool in recruiting targeted groups of individuals such as the demographic being studied (Amon, Campbell, Hawke, & Steinbeck, 2014). The first 14 participants to meet the study criteria were recruited and no participants were excluded. Notably although the study was open to both genders the sample comprised only women. Participants were encouraged to contact the research team via e-mail to express interest in taking part in the study or request further information. To maintain confidentiality, participants data was anonymized, cross-referenced, and identified using pseudonyms. As this is qualitative research the matter of sample size was considered (Boddy, 2016) and in doing so 'data saturation' was adhered to. Data saturation is the point at which there are diminishing returns to the qualitative sample, meaning that more data will not necessarily lead to more information (Mason, 2010).

2.2. Procedure

The current study was approved by the Departmental University Ethics Committee and comprised two postgraduate study projects (Ethics Approval Code: 3819 and 0343). Participants were recruited via public online platforms between May 2019 and July 2020. Once written consent from participants who met the study criteria had been obtained, the participants were invited to an online interview at a time convenient to them. A semi-structured interview schedule (see Fig. 1) comprised nine open-ended questions and follow-up probes, was employed in order to allow for thorough exploration of each individual's experiences. Interviews were recorded using a digital voice recorder and transcribed verbatim. The topics addressed in the interviews included the participants' experiences of seeking treatment and recovering from an ED, any changes to their view of themselves and their relationship to food that occurred as a consequence of the adoption of a plant-based diet, and their thoughts on whether a plant-based diet could aid recovery. Interviews lasted between 20 and 60 min, took place over video conferencing software.

The participants were informed that they could withdraw or request a break at any time without needing to provide the researcher with a reason, and verbal consent was clarified. Although no significant risks were associated with taking part in this study, the possibility that participants may experience emotional distress during the interview remained and so following interview the participants were provided with a debrief information sheet, which included details about the study and contact details of the principal investigator (an experienced clinical psychologist) and appropriate sources of support specific to ED. It is worth noting however, that no participants took up the option to contact

Interview Questions	*Prompts*
Set One	Potential prompts available when necessary;
Q1: What sort of eating disorder were you diagnosed with and how long have you had this disorder?	➢ You just mentioned (….) Could you tell me a little more about that?
Q2: Whilst seeking treatment what options did you explore and what impact do you feel they made?	➢ Could you elaborate further on that?
Q3: What were your thoughts and feelings before you went plant-based surrounding yourself, how you viewed food and your food intake?	➢ Please can you explain your reasons for arriving at that decision?
	➢ How did you feel about that?
Set Two	
Q4: Q4. Could you tell me how long you have been eating plant-based?	
Q5: How did you become interested in adopting a plant-based diet and what would you say made this lifestyle so appealing?	
Q6. What would you say your main motivations were to eat plant-based?	
Q7. In what way do you think eating a plant-based diet had an effect on your recovery process?	
Q8. How long have you been in recovery or have you recovered? And if so are you still eating vegan?	
Q9. From your experience do you believe that adopting a vegan diet could be used to aid eating disorder recovery?	

Fig. 1. Interview schedule.

for support.

2.3. Data analysis

Interviews were transcribed verbatim and analyzed using thematic analysis (Braun & Clarke, 2006, 2012) using manual coding Thematic analysis is an iterative process which enables the systematic identification, organization, and obtaining of insight into patterns of meaning throughout a data set allowing the researcher to make sense of information given (Braun & Clarke, 2012). The thematic approach is open, exploratory, flexible, and iterative. The approach is not focused on classifying participants' responses according to any pre-existing framework or theoretical assumptions (Braun & Clarke, 2006). Furthermore, it has been well established that thematic analysis is considered a useful tool for exploring individuals' experiences in the field of health and wellbeing (Braun & Clarke, 2014) and effectively used in similar explorations of ED phenomenon (e.g. Hunter & Gibson, 2021; Zeiler et al., 2021).

Braun and Clarke's (2006) six-phase approach to analysis was employed, with the first phase being familiarization with the data. Audio recordings were listened to repeatedly to ensure familiarity with content, accuracy and 'data immersion' (Braun & Clarke, 2006). Initial thoughts and ideas were noted and each transcript systematically reviewed to promote a deep understanding of each transcript. Initial patterns and codes were identified and labelled, eventually generating broader themes that were apparent across the collection of interviews. Manual coding identified themes that were apparent across the collection of interviews and that seemed to say something specific about this research question. The next step involved returning to the raw data associated with each theme and considered whether the data supported it and whether the themes work in the context of the entire data set. Three major themes with six contributory subthemes were ultimately identified. In striving for validity, reliability and rigor themes extracted were discussed and checked back to the raw data to ensure consistency and refinement. *Nb. For the purpose of this paper the term plant-based will be used to describe both vegan and plant-based diets, though in* verbatim *quotes participants used the terms interchangeably.*

3. Results

Thematic analysis of interview transcripts identified three major themes and six contributory subthemes (see Fig. 2). Supporting verbatim quotes are presented for the theme with the participant number and the page/line number where the quote may be found in the raw data presented after each quote

4. Theme: plant-based as a gateway to recovery

Participants described how eating a plant-based diet served as a 'gateway' towards a healthier way of eating. Motivations around food became about something 'other' than disordered eating though did reflect ongoing control over food choices. Barriers to adopting plant-based eating during treatment were regarded as stressful, distressing, and disruptive to recovery.

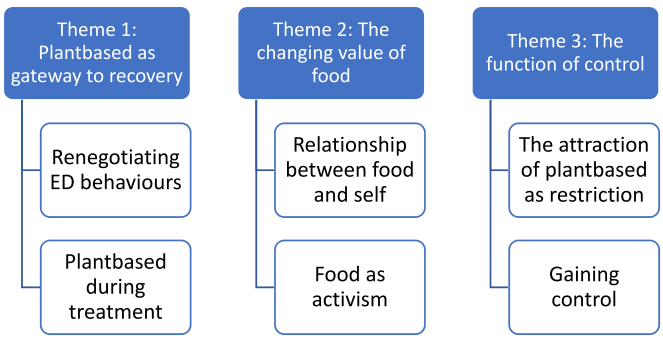

Fig. 2. Themes and subtheme.

4.1. Renegotiating ED behaviours

Participants reported a number of ED behaviours as being transformed through adoption of a plant-based diet. Eating plant-based was described as introducing a more gradual, and therefore more appealing, recovery process:

> *"I think veganism made recovery more gradual instead of just so jarring … If people become vegan for ethical, moral and personal reasons, then I think it can help them recover." (Piper, 3, 68 … 97–98).*

> *"I eventually tapered off into eating regularly again. Veganism was almost like a gateway drug, it sort of opened the door to more regular eating habits" (Monica, 4, 107–111).*

Participants described that eating larger amounts of food was easier when plant-based and highlighted that this contributed to reduced urges to purge (in response to sensations of bloating or fullness).

The implicit rules which exist within a plant-based diet began to replace ED 'rules'. For example, the habitual behavior of checking labels for caloric value shifted to check for plant-based content or ingredients:

> *"… and having to read ingredients a lot because I liked looking at the ingredients and then I had an excuse to do that and I focused on ingredients not calories" (Kerry, 3, 116–118)*

Plant-based meals were less anxiety provoking for participants, contributing to improve the whole experience of eating and participants could begin to enjoy meals:

> *"It made it a lot better, like what I was saying I don't really have any fear foods" (Kathryn, 6, 154–155).*

> *"So yeah, when I go to his [father] I put effort into my meals so he is like, 'you know what that's properly nice'. It's weird - it sort of takes any anxiety off eating at his … and like puts the focus on making him like vegan stuff." (Holly, 1, 198–201).*

> *"… my meal times were a time of stress and like how can I hide some of this food away so I don't have to eat it, I used to try and take my meals to my bedroom and then I would just throw everything in the bin' … Now I don't. Like for example if I make a stir fry and there were loads of vegetables left I would just throw everything that was left in and just enjoy it and not abide by the recipe because I don't care" (Tyla, 5, 105–112).*

4.2. Plant-based in treatment

Some participants described barriers to eating plant-based during inpatient treatment. For some, eating animal products became a condition of treatment, with vegan and vegetarianism not permitted. This felt disempowering and impacted negatively:

> *"… we had to finish the food, and if not, we were, so it wasn't willing … we finished it because we didn't want to get tubed. And there weren't any vegan options which made me feel even worse and not want to eat." (Cate, 1, 16–20)*

> *"… when I was in that PHP treatment, I ended up switching to a pescatarian diet, because my doctors said I couldn't eat vegetarian or vegan while I was in treatment." (Francesca, 4, 128–131)*

Participants felt assumptions made about motivations to be plant-based were unhelpful and distressing. Participants gave examples of decision making that was motivated by something other than simply calorific intake, although this was frequently dismissed during treatment which led to distress:

"I remember crying about it and stuff, and I said, you know, if you give me something that's vegan and it's 500 calories more, I will eat it over what you're offering." (Addison, 3, 66–67)

Being able to take control of the recovery process through choices about food acted as a protective factor and enhanced confidence. This empowerment came *through* the ability to assume control and contributed to autonomy and resilience against disordered thoughts:

"I think that's really important to show that it's an option and give people a choice to be in charge of their own recovery. I can't compare what it is like to have a professional team there striving to help you recover but I feel that being able to steer my own recovery was one of the single biggest things that gives me confidence now, like heck I've overcome that! I can do anything" (Sarah, 2, 244–250).

4.3. Theme: the changing value of food

Participants described how eating plant-based facilitated the evolution of a new and healthier relationship with food and for some, their body. Essential to this was the promotion of a sense of compassion for others and in turn, for themselves. Plant-based eating was seen as a lifestyle which connected them to meaningful values, purpose, and community – all of which contributed to a sense of new identity. Food began to take on a different meaning; with choices regarded as political activism that came with health benefits.

4.4. Relationship between food and self

All participants reported that adopting a plant-based lifestyle had a positive effect on the way they viewed food. Food was regarded more positively and linked to positive attributes of health and wellbeing; hereby facilitating a new, more connected, relationship between food and the body to begin.

"If I'm loving my body why wouldn't I want to nourish it with, you know, food? because food is medicine ultimately, that does not harm anyone else" (Sarah, 2, 118–120)

"I'm now really into connecting with myself again, because, being ill for so long, you kind of lose that sense of self." (Addison, 7, 142–143)

Being plant-based promoted more compassion for the self, others, and the planet and this in turn enhanced esteem and promoted recovery:

"you have to first learn to love yourself and in the process of learning to love yourself you are going to gradually understand what it is you need what it is that makes your body feel good how you can nourish yourself and be at peace with your body" (Sarah, 2, 287–297)

Some participants described being plant-based as a lifestyle choice rather than a food choice - and they felt this lifestyle became part of their identity. For many these values were internalised and beliefs - once dominated by the ED – began to be replaced with related moral and ethical beliefs surrounding animal welfare/environment, which participants felt supported recovery.

"Veganism has definitely affected me in a positive way, because I see it as aligning myself more with my values" (Cate, 2 ,41–42)

"I was looking at my vegan clothes and I was just so happy with myself … I think veganism can help you feel a lot better about yourself" (Robin, 4, 136–137 … 156)

Health benefits experienced were further reinforced by the wider ethical and environmental benefits, contributing to a positive experience of wider wellbeing and integrity:

"It also kind of helped me to say like I'm helping more animals by doing this as well as helping myself so, kind of mentally thinking about those things it helped me in that way and physically I felt better, and mentally" (Kathryn, 6, 118–192).

"… you know not eating meat and dairy is so much better in general for your body and I just feel so much better and full of energy and really more positive mentally too from being vegan" (Kerry, 3, 158–161)

4.5. Food as activism

Individuals expressed how food, once associated with negative emotions, took on a different purpose and activated the participants to advocate for environmental and animal rights. Participants re-evaluated food in terms of an ethical value over and above the self and this contributed positively, empowering them in their recovery:

"Um, I think it really helped me see food as a kind of less of an individual selfish choice and seeing it more of really a global choice, contributing an ethical value to the food I was eating made it easier to eat, because it's like I'm not eating just because I need to fuel myself but I'm also eating as part of an activism standpoint" (Kerry, 3, 164–169).

"It's empowering to know that what I am eating doesn't directly contribute to unnecessary deaths." (Victoria, 7, 243–244).

For many this altruism was compounded by a sense of belonging to the plant-based community which for many, became a positive part of a new post-ED identity:

"I identify as a vegan you know - I'm a person and I'm Irish, but I'm also a vegan and with me - I hold so much pride when I say that because I'm putting the needs of the environment and of animal welfare" (Tyla, 5, 236–240)

5. Theme: the function of control

Participants felt eating plant-based helped to free them from many of the anxieties and maladaptive behaviours associated with ED but were simultaneously cognizant of the risks of restriction and rules associated with eating plant-based. Participants experienced ethically informed shifts in motivations for controlling food.

5.1. The attraction of restriction

Participants acknowledged the risks of plant-based eating in the context of ED:

"There was a brief time when I was 15 and I tried to be vegan specifically because of my eating disorder, when really, I was just following a plant-based diet. I didn't actually care about any of the other vegan stuff." (Victoria, 6, 193, 195)

"Every time I've tried to do it before, it's been really difficult, I saw the patterns coming back from when I used to restrict before. And when I actually was ill, I was trying to follow a vegan diet." (Robin, 2, 64–67)

Participants were reflective about how being plant-based tapped into a restriction mindset and that this could be regarded by others as an attempt to maintain control and mask disordered eating habits. However, for these participants eating plant-based still served as an important "gateway" to recovery where the restrictions and rules imposed appealed to the control implicit in eating disorder pathology. For some this was comforting and familiar, but also presented a gradual step away from ED motivations towards a healthier and more ethically motivated way of eating:

"I would definitely say that they [rules] were a comfort to me, and I will say these rules were better rules than before, you know! Before I had to weigh and restrict but becoming vegan meant that I just had to avoid certain foods, and really I wasn't avoiding them due to their fat content I

was avoiding them because you know they involved cruelty and I think that's a pretty great reason to avoid something you know." (Kerry, 3, 124–130).

Participants felt the restrictions of being plant-based provided a useful structure but importantly these restrictions were less maladaptive and more morally motivated:

"well I know everyone thinks that it would be the other way around but with plant based the only rule is not to eat animal derivatives, but before I restricted … well, everything (brief laughter) … so I can live with that" (Rachael, 7, 101–105).

Notably, participants described how it was important that people with ED "examine the reasons behind why you want to be vegan, whether it's ethical, or restricted-related." (Francesca, 5, 182–183) demonstrating the potential for plant-based diets being a smokescreen for ED:

"If they want to be vegan for weight reasons, I'd say no, full stop, because there's that restrictive mindset." (Piper, 3, 95–96).

5.2. Gaining control of the disorder

All participants reference ongoing eating disordered thoughts and 'voices' with the majority of individuals stating that they expect thoughts to remain with them indefinitely, perhaps calling into consideration the construct of 'recovery' itself. However, participants reported that eating plant-based enabled them to feel more in control of their recovery process:

"From my experience, having an eating disorder is about control, but I think veganism can help because you are in control of what you put into your body, you're just making sure it's not animals." (Cate, 2, 46–48)

"… I have to say that it gave me an excuse when I went for meals, and you know even just for a coffee I could say oh I can't have that cake because I'm vegan and there aren't any vegan options' …. 'I mean that really appealed to me because I was aware that I could take control and I could say no I am vegan I can't do this and I can't do that" (Tyla, 5, 178–181, 184–186).

Being plant-based had facilitated a new relationship with food and self that promoted empowerment, autonomy, and recovery:

"It's hard like you get those thoughts but now I'm … like, I'm like bigger than those voices sort of. And I don't want them to like ruin my relationship with food" (Sophie, 192–195).

6. Discussion

This study examined the experiences of eating a plant-based or 'vegan' diet as part of recovery from ED (anorexia or bulimia nervosa). The findings support those of earlier studies that suggest initial motivations for adopting a plant-based diet can reflect a desire for control, dietary restraint and rules (Baş et al., 2005; Klopp et al., 2003; Lindeman et al., 2000). However, participants in this study went on to experience a plant-based diet as a "gateway" to recovery, facilitated by a lifestyle informed by ethical motivations and beliefs. Themes reported here reflect the changing value of food for the individual in which concern shifted from the impact of food on the body, to concern for the way food choices impact the environment and animals (Costa et al., 2019). This led to a new, and more meaningful relationship with food - described elsewhere as "healing" (Briones, 2015; Holland, 2016; Ribar, 2016). This new relationship reflected new knowledge (Cherry, 2015; Greenebaum, 2012), became meaningful and connected the individuals with morals and ethics. Participants in this study suggested this contributed to their motivation through altruism, and facilitated an important de-coupling of anxieties and fears about food (Rozin, 2005).

One healthcare system related factor worthy of discussion was participants experiences of the barriers to eating plant-based while in treatment, and these findings provide valuable insights into the potentially negative impact. Participants described additional stress and distress caused by being unable to eat in alignment with their morals – barriers that have the potential to disrupt engagement and promote disengagement, similar to that seen in enforced treatment such as nasogastric tube feeding (Bezance & Holliday, 2013; Fox & Diab, 2015). Removing morally driven food choices during treatment is arguably unethical and dehumanising. Paradoxically, it removes autonomy and contributes to stress *and* distress around food at a time when individuals should be working towards building a healthier and more positive relationship. Considering systemic hypotheses which speculate that ED may occur as a manifestation of the individuals' difficulties in developing autonomy, individuation and sense of self (Minuchin, Rosman, Baker, & Minuchin, 2009) the role of autonomy in recovery seems of central importance. Services could usefully consider how best to support individuals in treatment to explore their motivations for eating plant-based and provide support. Herein may lie opportunities for individuals to move away form disordered thinking towards an ethically motivated way of eating that provides purpose, enhances esteem, and facilitates a new post ED identity.

These findings highlight how plant-based eating and lifestyle contributed to the individual's sense of identity through belonging to a wider community (Costa et al., 2019) that was aligned with a wider purpose. While recovery in ED is ill-defined and remains poorly understood (Higbed & Fox, 2010) the rejection of the ED as part of the individual's new identity seems to play a central role (Duncan, Sebar, & Lee, 2015). It seems that the plant-based identity and lifestyle may contribute to recovery by replacing the strong identity and community associated with ED. Indeed, recovery is argued to be a "profoundly social process" (Jacobson & Greenley, 2001, p. 484).

Notably, the notion of 'control', often cited as a reason to prevent individuals recovering from ED from adopting plant-based diet (Baş et al., 2005; Lindeman et al., 2000) is described here as an essential mechanism for recovery. Participants depicted a gradual 'gateway' away from disordered eating towards a new understanding and value of food. Connecting food to a purpose bigger than themselves provided a new sense of purpose, esteem, as well as a community beyond that of ED (Liu & Huang, 2018).

This study is not without its limitations and provides only a snapshot of the experiences of one group of individuals. Studies of this kind are at risk of participation bias although this study intentionally sought out the experiences and views of individuals for whom plant-based eating played a role in ED recovery in order to explore these motivations and perceptions. Even so, we cannot be certain that the participants in this study did not reflect reduced levels of severity in relation to ED pathology. Nor can we be sure that individuals who responded to recruitment were not more morally motivated to discuss the benefits of plant-based diets or represent a minority for whom plant-based eating was helpful. Exploring the experiences of individuals for whom plant-based eating was not a helpful experience in recovery would inevitably increase our understanding of the risks and this warrants further qualitative enquiry. Secondly, participants in this study self-reported their ED diagnosis and this could not be corroborated with medical records. Finally, all participants in this study were female and experiences of male participants would undoubtedly yield different findings given socio-cultural influences and differences in ED presentations (Crisp et al., 2006). Despite these limitations the findings described here are consistent with those reported elsewhere (Briones, 2015; Costa et al., 2019; Ribar, 2016; Rozin, 2005).

There is a lack of data regarding outcomes of people in recovery who choose to adopt a plant-based diet. Future research could usefully explore and evaluate the physical and psychological outcomes through qualitative and quantitative methods with attention to the role of gender and stage of recovery. In particular, longitudinal studies are needed to understand and examine long-term outcomes, physical and

psychological, for those who adopt plant-based diets during recovery. Further qualitative exploration could also enhance understanding of the mechanisms, risks and opportunities, and provide much needed information to inform mainstream clinical services and in turn, optimize outcomes for people with ED. Studies could evaluate the effectiveness of treatments that focus less exclusively on cognitive behavioural aspects (Eddy & Kim, 2016) and explore the role of psycho-social factors in more detail - this seems of growing importance given the increase in the number of individuals seeking treatment for ED who are following a plant-based diet (O'Connor, 2019).

In summary, this study highlights the potential benefits of a plant-based diet for some individuals in recovery from ED. Arguably the findings reported here subvert the narrative that plant-based diets can only be negative or lead to other forms of disorders eating such as orthorexia. The plant-based lifestyle and the ethical underpinning motivations seem to contribute by influencing "*multiple levels of the self (identity, cognition, emotion, behaviour*)" (Costa et al., 2019). While control and restriction may be a motivating factor for some, the development of a plant-based lifestyle can connect individuals recovering from ED with a wider sense of purpose, identity, and community that may be protective. Making ethical choices around plant-based eating can change the individual's relationship with food, and in doing so can change their relationship with their body and themself – with focus taken away from how food impacts the body, and instead focusing on how food impacts the world (Costa et al., 2019; Liu & Huang, 2018).

Ethical statement

The current study was approved by UK Academic Departmental University Ethics Committee and comprised two postgraduate study projects (Ethics Approval Code: 3819 and 0343).

Declaration of competing interest

We, the authors, declare no conflict of interest. No funding was received for this research.

Data availability

Qualitative research. Raw data is available on reasonable request but confidential as per ethical approval.

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