

Running head: OCCUPATIONAL THERAPY AND EATING DISORDERS PRACTICE

**Practical Food Groups:
Exploring their contribution towards facilitating cognitive and
behavioural changes that support long-term outcomes for
individuals with eating disorders**

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Author Declaration

I, Rachel Biddiscombe, hereby declare that this submission is my own work and that it contains no material previously published or written by another person except where acknowledged in the text. Nor does it contain material that has been accepted for the award of another degree.

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Abstract

Objective: Relapse and rehospitalisation in individuals with eating disorders is a critical issue, especially considering their high prevalence. Emerging evidence supports practical and activity-based interventions as a potential treatment for long-term recovery. This study aimed to evaluate the contribution of “practical food groups” in facilitating cognitive and behavioural changes that support improved long-term outcomes for individuals with eating disorders.

Method: Individuals with mixed diagnoses attended practical food groups as part of their treatment at an eating disorders day program. Ninety-nine participants completed questionnaires at discharge and three follow-up time points (6, 12 and 24 months). Questionnaires explored participants’ experiences of practical food groups using rating-scale and open-ended questions. Data were collected between January 2010 and December 2014, and analysed using thematic analysis. Descriptive statistics were calculated for responses to rating-scale questions.

Findings: At discharge, participants rated the importance and usefulness of practical food groups highly (4.73 and 4.43 on a 5-point scale, respectively), but tended to rate their enjoyment of the groups lower (3.50 on a 5-point scale).

One core theme emerged: ‘success through participation’. Six subthemes were identified: helpful components of practical food groups; perceived benefit of exposure; impact of applying cognitive and behavioural skills; challenges affecting participation; facilitating adaptation; and influence of eating disorders on challenging feared foods.

Discussion: This study highlighted that practical food groups are considered a useful, challenging and highly valued aspect of day treatment. Results support the potential usefulness of activity-based interventions to facilitate sustained change.

Keywords:

Occupational therapy, exposure, social eating, meal preparation, feared foods and recovery

Word Count:

242

SECTION ONE: LITERATURE REVIEW

Introduction

Relapse and rehospitalisation in individuals with eating disorders is a critical issue, especially considering the high prevalence of eating disorders in contemporary society. Eating disorders are characterised by severe disturbances in eating behaviour and irrational body perceptions (Fairburn & Harrison, 2003). Their long-term prognosis is often poor, with significant physical and psychological complications (Fisher, Hetrick & Rushford, 2010). Regardless of diagnosis, individuals with eating disorders struggle to adopt normal eating behaviours, and may develop over controlled dieting or out of control eating (Lock & Pepin, 2010). Through disordered eating habits, individuals create purpose, meaning and fulfilment, which have a marked influence on quality of life, wellbeing and social functioning. These maladaptive coping mechanisms are exacerbated by limited psychological, social and life skills, which is often experienced in individuals with eating disorders (Cooper, Todd & Wells, 1998; Kloczko & Ikiugu, 2006). The literature suggests that these individuals experience impaired occupational participation (including self-care, leisure and productivity); however, knowledge of effective occupational therapy interventions for eating disorders is limited (Breden, 1992; Giles, 1985; Kloczko & Ikiugu, 2006; Lock, 2000; Lock & Pepin, 2010).

Relapse rates are high, with 30-50% of acute patients requiring rehospitalisation within one year of discharge (Steinglass et al., 2012). Surprisingly, decades of research have led to few advances in treatments; necessitating more research into alternate approaches to support long-term improvement (Nishizono-Maher et al., 2011; Steinglass et al., 2012; Steinhausen, 2002). Some of the factors related to relapse are deeply entrenched maladaptive distortions, difficulty maintaining a normal pattern of eating, fear of weight gain and impaired psychosocial functioning (Fairburn, Cooper & Shafran, 2003; Hay et al., 2013; Lock,

Williams, Bamford & Lacey, 2012). Individuals are often “tortured with self-rejection and emotional difficulties linked to the demands of adult roles and relationships” (Lock & Pepin, 2010 p. 123). It can be argued that eating disorders arise from deeply embedded distorted cognitions that become maladaptive eating and lifestyle habits.

Occupation-based approaches in eating disorder services may yield potential benefits in assisting participants to apply functional skills in experiential environments (Lim & Agnew, 1994; Lock & Pepin, 2010). Lock et al. (2012) recognised the potential importance of practical exposure and skill building for improving individual motivation and ability in eating behaviour. In this pilot study, meal preparation effectively improved motivation and the ability of participants to perform meal competency tasks at one-year follow-up, providing preliminary support for occupation-based interventions, however further research is needed. This review will focus on what evidence is currently available regarding treatment for individuals with eating disorders, the role of occupational therapy for this group, and the proposed benefits of an experiential and activity-based intervention as an alternate approach to challenge and expose individuals to feared foods to support long-term recovery.

Search Strategy

The electronic databases *CINAHL*, *Cochrane Library*, *Google Scholar*, *Medline*, *OT Seeker*, *PsycINFO*, *Scopus* and *Web of Science* were searched from July to October 2015 for this review. Key terms searched included: exposure group*, food group*, food fear*, practical group*, psychological intervention*, occupational therap*, eating disorder*, anorexia nervosa, bulimia nervosa and binge eating disorder. Publication dates were undefined for the purposes of including all potentially relevant literature. Reference lists of accepted articles were examined to identify additional literature.

Theoretical Framework

The Model of Human Occupation (MoHO; Kielhofner, 2008) was chosen to guide this research review, research questions and study aims. This model conceptualises how occupations are chosen, motivated and performed in an individual's environment (Kielhofner, 2008). This model suggests that individuals need motivational, habitual and performance skills to function effectively, with motivation having the highest impact on participation (Lock, 2000). Eating disorders are characterised by persistent maladaptive coping mechanisms and dysfunctional eating behaviours that can become habituated over time. Therefore, changing an individual's attitude and motivation for normal eating is essential for recovery (Wilson & Schlam, 2004). Incorporating a client-centred approach, the MoHO recognises the importance of individual's desires in shaping and creating therapy. As individuals with an eating disorder often lack motivation, especially in social and eating situations, occupational therapists need to address this lack of motivation and provide exposure to required behaviours for participation (Lock, 2000).

Difficulty in self-care tasks such as meal preparation and eating for this group is largely due to fear of weight gain, lack of self-competence, and resistance to change. Dysfunction of volition is brought by beliefs of personal inefficacy and lack of social and leisure experiences (Breden, 1992). Impairment in psychosocial functioning, limited social skills and lack of support contribute to poor performance (Breden, 1992). Based on an open systems theory encompassing individuals and their context, the MoHO seeks to explain how negative stigma and social insensitivity attached to mental illness in the community can further influence volition, habituation and performance capacity in individuals with eating disorders (Kielhofner, 2008). Additionally, as individuals view themselves as worthless and inferior, being less capable of performing occupations, a negative cycle may form (Fairburn, Cooper & Shafran, 2003).

A key contribution of occupational therapy in eating disorder services is to assist participants to apply functional skills in the real world. This aligns with the MoHO, recognising that occupational engagement is determined by the dynamic interaction between the person and his or her environment (Kielhofner, 2008). An individual's environment, inclusive of physical, social, cultural, economic and political environments, can affect motivation, performance and organisation of an individual's occupational life. The MoHO provides a guide for occupational therapists to encourage individuals to participate in meaningful activities via experiential, reality-oriented and educational activities in a supportive environment (Lock et al., 2012). Through the use of activity-based interventions including meal preparation in real environments, it is hoped that individuals will enhance internal motivation and overcome previous anxieties, improve self-controlled eating behaviours and develop positive coping strategies to improve outcomes.

Eating Disorders

Eating disorders can be divided into four categories: *anorexia nervosa*, is characterised by an over-evaluation of weight and shape, and a relentless desire for thinness or phobic fear of fatness resulting in refusal to maintain a healthy body weight; *bulimia nervosa*, is characterised by recurrent binge eating and compensatory behaviours and; *binge eating disorder*, is defined by regular consumption of excessive amounts of food and no compensatory behaviours (Fairburn & Harrison, 2003). *Eating disorders not otherwise specified* meet recognised characteristics of anorexia nervosa or bulimia nervosa but do not fulfill all the criteria for classification, such as Body Mass Index (BMI) < 17.5 for anorexia nervosa (Eddy et al., 2010; Lock & Peplin, 2010). Lifetime prevalence rates in young women have been estimated at 0.3-0.9% for anorexia nervosa, 1-2% for bulimia nervosa, 3.5% for

binge eating disorder and approximately 10% for eating disorders not otherwise specified (Flament, Bissada & Spettigue, 2012).

Risk Factors for Eating Disorders

Eating disorders present with a myriad of risk factors, which can include: stigma, personality traits, psychological influences and co-morbid mental health issues.

Stigma

Eating disorders are still frequently stigmatised in contemporary society due to the misconception they are self-inflicted (Crisp, 2005). Contrary to societal stereotypes, individuals do not choose this lifestyle driven by vanity and pursuit of thinness (Lock & Pepin, 2010). Individuals often wait an average of eight years before seeking treatment, illustrating serious barriers faced by individuals (Watson, Dreher & Steele, 2010).

Personality Traits

There is much evidence that personality traits affect the psychological development of eating disorders (Anderson-Fye & Becker, 2004; Fairburn, Cooper, Doll & Welch, 1999; Fleitlich-Bilyk & Lock, 2008). Individuals with anorexia nervosa often present with perfectionist and obsessional traits and have low self-esteem. Those with bulimia nervosa are largely self-critical, anxious and impulsive (Fleitlich-Bilyk & Lock, 2008).

Psychological Influences

Eating disorders have been considered disorders of the mind and body where individuals are largely affected by self-rejection and have difficulty forming relationships and life roles (Lock & Pepin, 2010). Individuals will often judge their self-worth on body perceptions and the ability to control eating behaviours. These psychological factors influence an individual's ability and motivation to participate in occupation (Kloczko & Ikiugu, 2006). The MoHO recognises that personal causation, values and interests affect

individual motivation to participate in specific occupations (Kielhofner, 2008). This reduced engagement in activities is exacerbated by the difficulty to tolerate negative emotions, low self-esteem and lack of assertion that often accompany individuals (Lock & Pepin, 2010).

Co-morbid Mental Health Issues

Individuals with eating disorders often experience co-morbid mood disorders, negative self-beliefs and strong dysfunctional thoughts, which can contribute to resistance to change (Cooper et al., 1998; Lock et al., 2012). The co-morbidities of mental illness that arise with eating disorders may impair individual enjoyment and recognition of strengths. For example, individuals will often disengage from meal times, as they cause conflict and stress with family or friends, further exacerbating feelings of low mood and motivation (Clark & Nayar, 2012).

The Concept of Recovery for Individuals with Eating Disorders

The importance of recovering from an eating disorder is well known, yet the meaning of recovery remains poorly understood. In mental health, the concept of recovery is largely centred on improving wellbeing and health, focusing on personal goals, and improving independent participation in meaningful activities (Chang, Heller, Pickett & Chen, 2013). This is in contrast to the traditional clinical definition that focuses on a symptom-based approach (Andresen, Caputi & Oades, 2010). For the purpose of this study, recovery encompasses individuals improving motivation, hope and ability to participate in meaningful activities. It also includes an increase in caloric intake and weight restoration, accompanied by a reduction in maladaptive body perceptions and eating disordered behaviours.

As discussed above, eating disorders result from a complex interplay between psychological, biological, and interpersonal factors (Fisher et al., 2010). Evidence suggests that psychiatric co-morbidities, successive ineffective treatments, long periods of illness and

the importance individuals assign to losing weight have contributed to poorer outcomes (Lock & Pepin, 2010). Individuals typically have limited experience of healthy eating, struggle with portion sizes, harbour dysfunctional eating behaviours and avoid social eating due to anxiety (Lock et al., 2012). Individuals may also experience self-defeating beliefs, feel inferior and have low self-esteem (Cooper et al., 1998). As such, eating disorders arise from deeply entrenched distorted cognitions that manifest into negative coping mechanisms and irrational body perceptions that can alter individuals' social and eating routines and can become habituated over time. Arguably, these factors make the sustainment of normal eating behaviours and reducing maladaptive cognitions challenging. To reduce relapse rates and sustain long-term improvement, treatment methods need to address these characteristics.

One of the most challenging tasks faced by individuals with an eating disorder is the transition to self-directed eating after discharge (Sparnon & Hornyak, 1989). This is still a barrier to recovery due to persistent distorted body perceptions and lack of meal preparation competencies (Fairbun, Cooper & Shafran, 2003; Lock et al., 2012). Therefore, current interventions that focus on reducing the physical problems of eating disorders, such as weight gain and medical consequences, may inadequately evaluate and manage the psychological and social impairments associated with everyday activities including eating.

Treatment guidelines recommend a comprehensive treatment approach to ensure individuals with eating disorders have access to pharmaceutical, nutritional and psychological interventions (Hay et al., 2014; National Institute for Clinical Excellence (NICE), 2004). Hay et al. (2014) recognised the lack of high quality evidence for the treatment of adults with anorexia nervosa. Studies are often small in number and inconclusive, resulting in conflicting results. **Multiple systematic reviews** and RCTs published for the treatment of bulimia nervosa and binge eating disorder discuss cognitive behavioural therapy as first-line

treatment (Fairburn, Agras & Wilson, 1992; Fairburn et al., 2009; Hay et al., 2014). The following information outlines these interventions in greater detail.

Treatment Approaches

Nutritional Counselling

Nutritional counselling is an important component of eating disorder treatment and continuum of care (American Dietetic Association, 2006). In the short-term, nutritional counselling can help with the development of normal eating habits, the reduction of concerns about weight and shape, and improvement in understanding about the food-body relationship. Additionally, treating guidelines recognise the role of dietitians in addressing physiological and psychological effects of starvation and self-induced vomiting, as well as nutritional requirements of a balanced diet (American Dietetic Association, 2006; Golden & Meyer, 2004; Hay et al., 2014).

Loria et al. (2009) conducted a longitudinal prospective study to evaluate the effectiveness of a nutrition education program, to achieve positive eating habits and behaviour in 89 individuals with anorexia nervosa or bulimia nervosa in Spain. The authors reported there was a meaningful reduction in purging and reduced bingeing episodes each week, more individuals were eating four meals per day and there was positive improvement in the consumption of at least three food groups. However, nutrition education programs may not be successful at altering maladaptive cognitions in long-term recovery and should not be the sole treatment for individuals with eating disorders (Hay et al., 2014; Sorrentino, Mucci, Merlotti, Galderisi & Maj, 2005).

Pharmacological Intervention

Medications have traditionally been used to treat co-morbid mental health conditions such as depression and anxiety; though, more recent medications have been trialled targeting

specific eating disorder symptoms (Hay et al., 2014). Hay, Claudino and Kaio (2001) conducted a systematic review of randomised control trials (RCTs), comparing antidepressant medication with psychological interventions in bulimia nervosa. The authors found that remission rates (defined as a complete extinguishment of bingeing/purging) were 20% and 39% for antidepressants and psychotherapy at the end of short-term trials, respectively. Remission rates were the highest for the combination of anti-depressants and psychotherapy, with 42% remission rates. However, antidepressants seem to be beneficial only in the short term for relieving symptoms (approximately eight weeks), thus recovery was not sustained (Hay et al., 2001). Ramacciotti et al. (2013) concluded that antidepressant medication and psychological interventions (including CBT, IPT and Dialectical Behaviour Therapy) are most effective in improving mood, reducing binge frequency and improving eating-related behaviour, such as hunger and restraint. However, studies they reviewed were often limited by small sample sizes, significant dropout rates and placebo responses. Flament et al. (2012) reviewed multiple RCTs for efficacy and safety of pharmacotherapy for individuals with eating disorders, concluding that serotonin reuptake inhibitors and atypical antipsychotics have yielded moderate reductions of bingeing and purging behaviours.

Despite this, evidence for the efficacy of pharmacological interventions is weak to moderate (Flament et al., 2012; Hay & Claudino, 2012). Pharmacotherapy options for anorexia nervosa remain limited (Malina et al., 2003). Reasons that pharmaceuticals alone are not effective in the long-term may be due to the significant psychological impairment and physical needs that should also be addressed in treatment (Watson et al., 2010).

Psychological Intervention

Psychological treatments are largely focused on reducing obsessive-compulsive characteristics, addressing perfectionism and improving thoughts regarding body shape and weight (Cohen, Simpson & Bride, 2008). There is no single psychological intervention that

has been applied consistently in the treatment of eating disorders; although, cognitive behavioural therapy (CBT) has the largest empirical support base for the treatment of bulimia nervosa and binge eating disorder (Fairburn, Agras & Wilson, 1992; Fairburn et al., 2009; Hay, Bacaltchuk, Stefano & Kashyap, 2009; Murphy, Straebl, Cooper & Fairburn, 2010; Wilson, 2005). For the purposes of this literature review, interpersonal psychotherapy (IPT), family-based treatment (FBT) and CBT will be investigated. Despite advancements with psychotherapy interventions, many people remain symptomatic post-treatment; suggesting current treatments are ineffective and warrant further investigation (Berg & Wonderlich, 2013).

i) Interpersonal Psychotherapy (IPT)

IPT focuses on changing an individual's interpersonal behaviour by exploring the development of eating disorder behaviours and the benefits or disadvantages of changing that behaviour (Cohen et al., 2008). Wilson, Wilfley, Agras and Bryson (2010) conducted an RCT on 205 individuals with binge eating disorder, to determine whether IPT is more effective than behavioural weight loss treatment or guided self-help based on CBT. Results demonstrated at two-year follow-up, IPT and guided self-help were significantly more effective in eliminating binge eating. Evidence available also suggests IPT yields comparable recovery rates to CBT for long-term recovery in bulimia nervosa (Agras, Walsh, Fairburn, Wilson & Kraemer, 2000; Fairburn et al., 1991). Wilfley et al. (2002) supports similar results in short and long-term treatment of binge eating disorder for IPT and CBT. However, Murphy et al. (2010) found that IPT was less effective than CBT in reducing purging and distorted cognitions. These findings have been consistent with another RCT of 220 individuals (Wilson, Fairburn, Agras, Walsh & Kraemer, 2002), supporting the effectiveness of CBT over IPT in post-treatment improvement of binge eating and vomiting. McIntosh et al. (2005) conducted an RCT in 56 women with anorexia nervosa, supporting clinical

management conditions as a treatment over IPT and CBT, however none were particularly effective.

ii) Family-Based Therapy

FBT uses the family to support recovery and aid positive eating behaviour (Couturier, Kimber & Szatmari, 2013). Family-based approaches are the first line of treatment for adolescents and children with an eating disorder (NICE, 2004). Fisher et al. (2010) concluded that FBT may be more effective in the remission of eating disorders symptoms than non-family therapy based interventions. Lock et al. (2010) conducted an RCT to compare FBT with adolescent-focused individual therapy on 121 individuals with anorexia nervosa. The authors concluded that there were no significant differences at end of treatment, however, FBT yielded significantly better results at 6 and 12-month follow-up. This included $\geq 95\%$ of expected weight reached, and improvement on the mean global Eating Disorder Examination score. Couturier et al. (2013) conducted a meta-analysis on 12 RCTs, similarly concluding that although significant differences at end of treatment were not found between FBT and individual therapy, FBT was superior at 6 and 12-month follow-up. One explanation for this may be that those receiving individual treatment no longer had access to support during follow-up, unlike individuals who had support from their families.

iii) Cognitive Behavioural Therapy

CBT aims to challenge cognitive (over-evaluation of shape and weight, negative self-worth and perfectionism) and behavioural (binging and purging, strict dieting and body avoidance) factors of an eating disorder (Hay et al., 2014). CBT appears to be the treatment of choice in individuals with bulimia nervosa (Fairburn, Agras & Wilson, 1992; Fairburn et al., 2009). Wilson et al. (2002) conducted an RCT on 220 individuals with bulimia nervosa, establishing that after 20 weeks of CBT, vomiting and binge eating behaviours were reduced by 80%. In addition, Hay et al. (2009) reviewed 48 studies to find that CBT achieved a 37%

outcome of binge eating abstinence, which was greater than other interventions. The quality of trials reviewed was variable; studies often had small sample sizes and the absence of follow-up data restricts the durability of outcomes.

A specific form of CBT for bulimia nervosa (CBT-BN) encourages individuals to address dieting, bingeing and weight control behaviours by use of behavioural experiments. Essentially, individuals are encouraged to test whether normal eating leads to feared outcomes predicted, such as unstoppable weight gain, and engage in cognitive techniques to address eating disorder ideation that underpins the behavioural cycle. The literature supports the effectiveness of CBT-BN in reducing bulimic symptoms (Agras et al., 2000; Hay et al., 2009), however, trials consistently had follow-up periods of less than 12 months. Galsworthy-Francis and Allan (2014) conducted a systematic review of the treatment effectiveness of CBT with anorexia nervosa, concluding that CBT is not superior over other treatments.

CBT is a multi-component intervention with varying approaches, including cognitive reconstruction, exposure and response prevention (EXRP) and challenging overvalued cognitions about body perceptions and eating. Therefore, determining what components are effective is difficult to evaluate (McIntosh, Carter, Bulik, Frampton & Joyce, 2011), and larger RCTs are needed to develop further conclusions.

Although current treatments may be effective in short-term remission of eating disordered behaviour, high rates of relapse suggest the need for other interventions to support long-term cognitive and behavioural changes necessary for recovery. Fear of weight gain, resistance to change, identity dilemmas and distorted perceptions of body image and eating behaviours are problems consistent with eating disorders. However, regardless of the recognised importance that distorted cognitions have on eating behaviours, there is limited evidence on the effectiveness of interventions aimed at improving cognitive and behavioural

skills related to portion sizing, purchasing food and meal preparation competencies (Lock et al., 2012). One of the important contributions of occupational therapists in eating disorders is to encourage participants to achieve normal function in psychological, physical and social areas through applying functional skills in the real world (Lim & Agnew, 1994).

Impact of Eating Disorders on Occupational Performance

Eating disorders affect positive engagement in social and leisure activities as a result of dissatisfaction, frustration and lack of confidence (Lock & Pepin, 2010). Individuals with anorexia nervosa often struggle to develop meaningful relationships and find pleasure in social activities. In bulimia nervosa, individuals often perceive work and leisure occupations as stressful, struggle to perform life roles and often experience frustration and dissatisfaction (Kloczko & Ikiugu, 2006). Shared challenges that individuals with eating disorders experience in occupational performance can include: maladaptive eating behaviours; reduced independent living skills, including self-care, and impaired psychosocial functioning; and resistance to change (Lock & Pepin, 2010).

i) Maladaptive Eating Behaviours

Maladaptive food consumption and inadequate meal preparation competencies are typically experienced in individuals with eating disorders. Individuals also report irrational beliefs about the consequences of eating (Steinglass et al., 2014). Social eating is avoided and individuals experience extreme anxiety when eating which contributes to their lack of participation (Lock & Pepin, 2010).

ii) Reduced Independent Living Skills and Impaired Psychosocial Functioning

People with eating disorders may have impaired living skills as their lives are centred on dieting, exercising and obsessive-compulsive routines (Lock & Pepin, 2010). Self-care tasks become increasingly difficult due to negative self-esteem and distorted body image

(Clark & Nayar, 2012). Additionally, poor engagement in work and leisure occupations is exacerbated by impaired memory and poor concentration as a result of self-starvation (Clark & Nayar, 2012). Through obsessive eating disorder thoughts and negative coping mechanisms, individuals often lose interest in vocational and social pursuits (Lock & Pepin, 2010).

iii) Resistance to Change

Resistance to change is a prominent feature, especially in anorexia nervosa, as behaviours are centred on food restriction and exercise (Vitousek, Watson & Wilson, 1998). These behaviours are considered a lifestyle choice rather than a clinical problem (Lock & Pepin, 2010). Individuals show denial of illness, refusal for treatment and non-compliance with interventions due to the fear of weight gain (Flament et al., 2012). A degree of ambivalence is associated with eating disorder recovery as individuals may perceive the strict regimen and unpleasant consequences necessary to encourage positive change as not worth the goal (Vitousek et al., 1998).

Addressing challenges that impact occupational participation should be specifically targeted in intervention. Kielfhofner (2008) identifies that interests are developed through an individual's experience in pleasure and satisfaction; therefore individuals must be engaged in occupations they enjoy. Through experiential or real life environments occupational therapists can involve the client in the treatment process, recognising the attainment of roles, habits and performance skills essential to improve participation (Kloczko & Ikiugu, 2006).

Understanding Activity-Based Interventions

Lock and Pepin (2010) recognised that enabling clients to develop motivation to participate in adaptive occupations is important for recovery. Individuals are encouraged to improve task performance and challenge occupations perceived as risky, replacing them with

healthy routines. Through participation in experiential and occupation-based activities, affected individuals can enhance performance skills, leading to stronger self-identity (Kloczko & Ikiugu, 2006). This rationale aims to transform skills associated with rejection and failure, into skills associated with self-acceptance and improved self-competence (Lim & Agnew, 2004; Lock & Pepin, 2010). As such, in order to warrant positive outcomes, interventions should address eating disordered behaviour and improve self-efficacy and competence in meal preparation tasks. Exposure to feared foods and discouragement of excessive dieting is also encouraged (Sparron & Hornyak, 1989; Giles, 1985; Martin, 1998). To improve self-controlled eating behaviours and develop positive coping strategies applicable outside of treatment, activity-based interventions including meal preparation in real environments may yield potential benefits. Additionally, reintroduction to social eating, which is often avoided due to high anxiety, may be beneficial. The theoretical foundations for these interventions were established in the 1980's (Giles, 1985, Levens & Duncan, 1987; Martin, 1998).

Giles (1985) acknowledged that practical engagement to enable clients to eat effectively has been inadequately stressed in eating disorder services (Giles, 1985). Levens and Duncan (1987) recognised that individuals with eating disorders struggled with decision-making in meal planning. One potential explanation for this was the lack of self-esteem and competence that prevented individuals from engaging in self-care occupations. Exposure to eating situations will challenge irrational perceptions and distorted cognitions aiming to reduce individuals' vulnerability to negative thoughts experienced around food fears (Levens and Duncan, 1987).

Exposure within real life environments allows therapists to accompany individuals in challenging feared foods in order to guide their distressed feelings, thoughts and behaviours (Sparron & Hornyak, 1989). Individuals are encouraged to experiment with alternative

actions or cognitions and note any accompanying reduction in anxieties. Roth (1986) recognised this as a powerful intervention allowing individuals to transfer important skills to the external world, providing a bridge between therapy and self-directed recovery. Exposure and response prevention exposed individuals to feared foods and prevented them from performing weight control behaviours, such as purging, until the urge receded. This was based on the understanding that purging was a response to reduce anxiety after binge eating; thus, purging reinforces binge eating. Although these interventions demonstrated some positive preliminary results (Rosen & Leitenberg, 1982; Leitenberg et al., 1988; Kennedy, Katz, Neitzert, Ralevski & Mendlowitz, 1995), research into these approaches is limited. This lack of research may be related to a current focus on CBT as the preferred treatment modality for eating disorders.

The gap in practical intervention evidence is interesting when one considers the theoretical suggestion that activity-oriented intervention and helping individuals work through food fears in real life environments will improve eating-related behaviour (Giles, 1985; Martin, 1998; Sparnon & Hornyak, 1989). More recently developed therapies, such as a form of EXRP for individuals with anorexia nervosa (AN-EXRP) and meal preparation training, have begun to refocus on the potential importance of practical exposure in the treatment of eating disorders.

i) Exposure and Response Prevention for Anorexia Nervosa (AN-EXRP)

EXRP was originally developed for the treatment of anxiety disorders and OCD. Obsessive and ritualised behaviours are present with these conditions and eating disorders, suggesting a useful overlap in intervention (Steinglass et al., 2012). Steinglass et al. (2012; 2014) recognised that along with disordered eating behaviours, individuals exhibit significant symptoms of anxiety with eating. It was proposed that reducing anxiety levels during eating could improve patient satisfaction and increase caloric intake. To address continuing

difficulties and high relapse rates, Steinglass et al. (2012) reshaped EXRP for recently weight-restored individuals with anorexia nervosa. Participants were exposed to and engaged in feared eating situations, encouraged to experience (not avoid) eating-related anxiety and then witness habituation of thoughts and disconfirmation of these feared situations. After 12 individual sessions, the authors found a significant association between change in anxiety and increased caloric intake. However, the small sample size must be considered and AN-EXRP was given after weight restoration ($BMI > 18.5$), which may impact generalisability of findings. Similarly, Steinglass et al. (2014) conducted a 4-week RCT comparing AN-EXRP against Cognitive-Remediation Therapy. The authors found that individuals in the AN-EXRP group reported lower anxiety and, therefore, had a significantly better increase in food intake.

ii) Meal Preparation Training

In the literature search only one study was identified that looked at meal preparation training for eating disorder services. Lock et al. (2012) designed and evaluated a meal preparation group as part of an eating disorders treatment program. In this intervention, individuals experienced food challenges and were encouraged to take behavioural and cognitive risks in a supportive environment. This allowed individuals to pass through the exploration-competence-achievement continuum (as part of the remotivation process) necessary for recovery (Lock et al., 2012). After a minimum of 10 sessions, individuals improved ability and motivation to perform meal competency tasks. Results were maintained one-year post-treatment, suggesting that individuals had acquired meal preparation and social eating skills suitable for long-term durability (Lock et al., 2012). However, this was a pilot study with less than 30 participants and many individuals were excluded due to the inclusion criteria of $BMI > 20$. The results from these studies again highlight the potential usefulness of practical and activity-based interventions to facilitate cognitive and sustained behavioural change.

Practical food groups

Based on the potential usefulness of activity-based interventions, '*practical food groups*' were introduced as a key component of treatment in a newly developed day program for individuals with eating disorders (Wheatley, Hart, McMaster, Horsfield & Thomas, 2014). The major principles in practical food groups are consistent with EXRP and meal preparation training. It is hypothesised that helping individuals challenge feared foods, initially in a supportive environment, and encouraging behavioural and cognitive change would improve participants' eating behaviours, reduce negative coping mechanisms, and provide a foundation that may support sustained recovery.

Practical food groups involve participants visiting local cafes and restaurants or preparing and cooking meals in order to challenge negative food behaviours. Individuals are encouraged to practice new plans and coping skills to manage distress, improving ability to repeat challenges outside of groups and achieve self-competence in this occupation. A behavioural experiment format was adopted for the groups, where structured, experimental activities took place to allow individuals to test the validity of their beliefs (Bennet-levy et al., 2004). Through the behavioural experiment format, individuals were encouraged to identify their distorted thoughts and beliefs, challenge these beliefs through exposure to feared foods and situations within the groups, observe whether their fears eventuated and then reflect on their experience after the groups. This process of behavioural experimentation is suggested to support the establishment of a powerful environment for cognitive change (Bennet-levy et al., 2004).

Evidence suggests that exposing individuals to their food fears, supporting individuals to avoid the use of compensatory behaviours and excessive dieting through practical food groups could be a useful intervention. However, the current evidence base for this approach to treatment is limited. This study aims to evaluate the contribution of practical food groups

towards facilitating cognitive and behavioural changes that support long-term outcomes for individuals with eating disorders. The research questions include:

- 1) How do participants experience practical food groups and what are their perceptions of the effectiveness and usefulness of practical food groups?
- 2) What skills did participants learn in practical food groups that increased engagement and participation in eating?

This study adopted a mixed methods approach to explore participants' experiences of practical food groups. Questionnaires were completed at admission, discharge and at three follow-up time points (6, 12 and 24 months) using rating-scale and open-ended questions.

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SECTION TWO: JOURNAL MANUSCRIPT

**Practical Food Groups:
Exploring their contribution towards facilitating cognitive and
behavioural changes that support long-term outcomes for
individuals with eating disorders**

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PRACTICAL FOOD GROUPS FOR EATING DISORDERS

Abstract

Objective: Relapse and rehospitalisation in individuals with eating disorders is a critical issue, especially considering their high prevalence. Emerging evidence supports practical and activity-based interventions as a potential treatment for long-term recovery. This study aimed to evaluate the contribution of “practical food groups” in facilitating cognitive and behavioural changes that support improved long-term outcomes for individuals with eating disorders. **Method:** Individuals with mixed diagnoses attended practical food groups as part of their treatment at an eating disorders day program. Ninety-nine participants completed questionnaires at discharge and three follow-up time points (6, 12 and 24 months). Questionnaires explored participants’ experiences of practical food groups using rating-scale and open-ended questions. Data were collected between January 2010 and December 2014, and analysed using thematic analysis. Descriptive statistics were calculated for responses to rating-scale questions. **Findings:** At discharge, participants rated the importance and usefulness of practical food groups highly (4.73 and 4.43 on a 5-point scale, respectively), but tended to rate their enjoyment of the groups lower (3.50 on a 5-point scale). One core theme emerged: ‘success through participation’. Six subthemes were identified: helpful components of practical food groups; perceived benefit of exposure; impact of applying cognitive and behavioural skills; challenges affecting participation; facilitating adaptation; and influence of eating disorders on challenging feared foods. **Discussion:** This study highlighted that practical food groups are considered a useful, challenging and highly valued aspect of day treatment. Results support the potential usefulness of activity-based interventions to facilitate sustained change.

Keywords:

Occupational therapy, exposure, social eating, meal preparation, feared foods and recovery

Word Count: 242

Practical Food Groups: Exploring their contribution to behavioural and cognitive changes to support long-term improvements for individuals with eating disorders

Relapse and rehospitalisation in individuals with eating disorders is a critical issue, especially considering their high prevalence. Eating disorders are characterised by severe disturbances in eating behaviour and irrational thoughts regarding body shape and weight.^{1,2} Diagnoses include anorexia nervosa, bulimia nervosa, binge eating disorder, and eating disorders not otherwise specified.¹ Regardless of diagnosis, individuals with eating disorders struggle to adopt normal eating behaviours and maintain normal body weight.³

Relapse rates are high, with 30-50% of acute patients requiring rehospitalisation within one year of discharge.⁴ Some of the factors related to relapse are deeply embedded cognitive distortions, difficulty maintaining a normal pattern of eating, fear of weight gain and impaired psychosocial functioning.^{2,5,6} Individuals typically have limited experience of eating healthy meals, struggle with portion sizes and harbour dysfunctional eating behaviours.⁶

Eating disorders result from a complex interplay between psychological, biological, and interpersonal factors.⁷ Individuals may have self-defeating beliefs, feel inferior and have low self-esteem.⁸ As such, eating disorders arise from entrenched maladaptive cognitions that lead to negative coping mechanisms and irrational body perceptions that can alter individuals social and eating routines and can become habituated over time. Arguably, these factors make sustained normal eating behaviours and reduced maladaptive cognitions challenging. To reduce relapse rates and facilitate long-term improvement, interventions need to address the interplay of these factors.

One of the most challenging tasks faced by individuals with eating disorders is the transition to self-directed eating after discharge.⁹ This is still a barrier to recovery due to persistent distorted body perceptions and lack of meal preparation competencies.⁶ Therefore, current interventions that focus on reducing the physical problems of eating disorders, such as weight gain and medical complications, may inadequately evaluate and manage the psychological and social impairments associated with everyday activities including eating. In the short-term, nutritional counselling can help with the restoration of body weight, normalising food intake and reducing the effects of self-starvation and purging.^{10,11} However, these approaches may not be successful at altering maladaptive cognitions in long-term recovery.¹² Medications have traditionally been used to treat co-morbid mental health conditions such as depression and anxiety; though, more recent medications have been trialled targeting specific eating disorder symptoms. For example, serotonin reuptake inhibitors and atypical antipsychotics have yielded moderate reductions in bingeing and purging behaviours.¹³ Despite this, evidence for the efficacy of pharmacological interventions is weak to moderate.^{13,14}

No single psychological intervention has been applied consistently in the treatment of eating disorders; although cognitive behavioural therapy (CBT) has the largest empirical support base for bulimia nervosa and binge eating disorder.¹⁵⁻¹⁹ A form of CBT for bulimia nervosa (CBT-BN) aims to address dieting, bingeing and purging through behavioural experiments. Individuals are encouraged to test whether normal eating leads to predicted feared outcomes, such as unstoppable weight gain. Participants use cognitive techniques to address eating disorder ideation that underpins the behavioural cycle. Literature supports the effectiveness of CBT-BN in reducing bulimic symptoms^{17,20}. However, trials consistently had follow-up periods of less than 12-months. Galsworthy-Francis and Allan²¹ conducted a systematic review investigating the effectiveness of CBT for anorexia nervosa, concluding

that CBT is not superior over other treatments. Although current treatments may be effective in the short-term, high rates of relapse suggest the need for other interventions to support long-term cognitive and behavioural changes necessary for recovery.

Interventions should address eating disordered behaviour and improve self-efficacy and competence in meal preparation tasks. Exposure to feared foods and discouragement of excessive dieting is also encouraged.^{6,9,22,23} The theoretical foundations for these interventions were established in the 1980's. To improve self-controlled eating behaviours and develop positive coping strategies outside of treatment, activity-based interventions including meal preparation in real environments are suggested.²²⁻²⁴ Additionally, reintroduction to social eating, which is often avoided due to high anxiety, may be beneficial.

Therapist can accompany individuals within real life environments when they are being challenged with feared foods. This allows them to guide the individual through real life experiences, helping them address distressed feelings, thoughts and behaviours. Individuals are encouraged to experiment with alternative actions or cognitions and note any accompanying reduction in anxieties.⁹ Exposure and response prevention (EXRP) exposes individuals to feared foods and prevents them from performing weight control behaviours, such as purging, until the urge recedes. Although these interventions have some positive outcomes²⁵⁻²⁷ research into these approaches has been limited. This lack of research may be related to a current focus on CBT as the preferred treatment modality for eating disorders.

More recently developed therapies, such as a form of exposure and response prevention for individuals with anorexia nervosa (AN-EXRP) and meal preparation training, have begun to refocus on the potential importance of practical exposure in the treatment of eating disorders. Steinglass et al.^{4,28} recognised that along with disordered eating behaviours, individuals experience significant anxiety when eating. To address continuing difficulties and high relapse rates, Steinglass et al.⁴ adapted EXRP for recently weight-restored individuals

with anorexia nervosa. After 12 individual sessions, the authors found a significant association between change in anxiety and increased caloric intake. Lock et al.⁶ also recognised the potential importance of practical exposure and skill building for improving motivation and ability in eating behaviour. In this intervention, individuals experienced food challenges and were encouraged to take behavioural and cognitive risks in a supportive environment. It is asserted that meal preparation and training is an essential focus for individuals with eating disorders pursuing full recovery, as this allows individuals to pass through the exploration-competence-achievement continuum (as part of the remotivation process to improve motivation and volition) necessary for recovery.⁶ In this pilot study, the meal preparation group effectively enabled individuals to take cognitive and behavioural risks in an experiential and supportive environment, improving motivation and ability of participants to perform meal competency tasks at one-year follow-up. These studies highlight the usefulness of practical and activity based interventions in supporting individuals with eating disorders. Individuals are able to overcome maladaptive cognitions and create sustainable behavioural changes.

Based on the potential usefulness of activity-based interventions, “practical food groups” were introduced as a key component of treatment in a newly developed eating disorders day program.²⁹ The major principles in practical food groups are consistent with EXRP and meal preparation training. It is hypothesised that helping individuals challenge feared foods, initially in a supportive environment, and encouraging behavioural and cognitive change would improve participants’ eating behaviours, reduce negative coping mechanisms, and provide a foundation that may support sustained recovery. Practical food groups involves a small group of individuals with eating disorders visiting local cafes and restaurants or preparing and cooking meals under the guidance of an occupational therapist and dietician in order to challenge negative food behaviours. Individuals are encouraged to

practice new plans and coping skills to manage distress, aiming to improve ability to repeat challenges outside of groups.

From the existing evidence exposing individuals to their food fears, supporting individuals to avoid the use of compensatory behaviours and excessive dieting through practical food groups appears to be a potentially useful intervention. However, the current evidence base for this approach to treatment is limited. This study aims to evaluate the contribution of practical food groups towards facilitating cognitive and behavioural changes that support long-term outcomes for individuals with eating disorders. The research questions include:

- 1) How do participants experience practical food groups and what are their perceptions of the effectiveness and usefulness of practical food groups?
- 2) What skills did participants learn in practical food groups that increased engagement and participation in eating?

METHOD

This study adopted a mixed methods approach to explore participants' experiences of practical food groups as part of their comprehensive eating disorders day program. It forms one component of a larger research project established to evaluate the overall outcomes of the day program.

The day program was associated with a large metropolitan hospital in Sydney. Individuals admitted to the program were adults who had an existing diagnosis of anorexia nervosa, bulimia nervosa, binge eating disorder or eating disorder not otherwise specified consistent with DSM-IV-TR³⁰ and a Body Mass Index (BMI) >16. Upon admission to the program, individuals were provided with project information, individual confidentially and that participation would not affect their treatment.

The overall research project was approved by the hospital's Human Research Ethics Committee. Participants who provided written, informed consent completed questionnaires at admission, discharge and three follow-up time points (6, 12 and 24 months). Questions related to participants' perceptions of practical food groups that form the basis of this study were included in the discharge and follow-up questionnaires.

Study Intervention

Practical Food Groups

The eating disorder day program was run from 10am to 4pm, four days per week. A key aspect of the program was the delivery of "practical food groups". These were held once to twice weekly and consisted of outings to local cafes and restaurants or meal preparation activities. These groups were facilitated by two staff (typically an occupational therapist and dietitian) and included up to eight participants with mixed diagnoses. A behavioural experiment format was adopted for the groups, where structured, experimental activities took place to allow individuals to test the validity of their beliefs.³¹ Individuals were encouraged to identify their distorted thoughts and beliefs, challenge these beliefs through exposure to feared foods and situations within the groups, observe whether their fears eventuated and reflect on their experience. This process of behavioural experimentation is suggested to support the establishment of a powerful environment for cognitive change.³¹

Sessions began with briefing (45 minutes) that allowed individuals to identify and reflect on distorted thoughts and beliefs to be challenged during the practical food group. Participants discussed what coping skills they could use to manage distress during the activities: the practical food group lasted approximately one hour. During the groups, participants were encouraged to implement skills learnt in other aspects of the program such as: focusing on the bigger picture/intent, acceptance of eating disorder thoughts and feelings, relaxation and distraction to manage distress. Several "rules" or structures were implemented:

participation was not optional; individuals were required to finish their entire serving and manage any resultant anxiety after the challenge. Each session concluded with a de-briefing (45 minutes). As a homework activity, individuals reflected upon the outcome of the group, revisited their target beliefs and recorded what they learnt and whether they considered the group to have been a success.

Data Collection

Surveys

The discharge questionnaire included a total of 12 questions related to practical food groups. Six questions were rated on a 5-point Likert-type scale. An example question is “How important do you think it was to have food groups as part of day program treatment?” An additional six open-ended questions allowed participants to provide free-text responses. Example questions are “What skills did you learn that you were not able to do prior to day program treatment and which factors have helped you challenge fear foods outside of day program?” The follow-up questionnaire included seven questions related to practical food groups: four rated on the 5-point Likert-type scale and three open-ended questions. See Figure 1.

<Insert Figure 1 here>

Data Analysis

Subjective Scores

Descriptive statistics were calculated for participants’ responses to rating scale questions using the analysis program IBM SPSS Statistics (Version 22).

Perceptions of Practical Food Groups

Due to the nature of open-ended questions, data gathered at discharge identified factors related to practical food groups that helped challenge feared foods and information

collected at follow-up focused on the integration of skills learnt from the program into daily life. Due to the differences in the information provided, these were analysed separately.

An inductive thematic analysis approach was used to analyse responses to open-ended questions, following closely procedures suggested by Braun and Clarke³². After reviewing the data and noting down initial ideas to gain an overall understanding of participant experiences, raw data were coded line-by-line into preliminary codes by the first author. This was done systematically across the entire data set developing an initial coding framework. Initial codes were compared for conceptual overlap and grouped into potential themes. Once all extracts for each theme had been gathered, themes were reviewed. Themes were refined and examined to ensure they best described coded extracts and the entire data set. Further review involved sorting and identifying related themes that represented an overarching theme. Data saturation was achieved as participants who provided feedback later in the course of the study raised information already identified earlier. The qualitative software QSR Nvivo was used to assist in the organisation and analysis of data.³³

To support interpretative rigour, analyses were regularly monitored and ratified by all authors at each stage; emerging themes were discussed and reanalysed where disagreements occurred until consensus was reached. Rigour and trustworthiness of findings was improved through consensus coding by the first and second author to verify codes and main themes during data analysis and a clear audit trail was kept detailing reflections on and decisions about codes, emerging themes and their relationships. Additionally a degree of data triangulation was possible with the availability of both qualitative and quantitative data.

FINDINGS

Participants

Of the 115 participants who were enrolled in the study during the data collection period, 99 provided feedback about practical food groups. The ages of the participants ranged from 17 to 41 years (average age was 26), mean BMI at admission was 21 (ranging from 16 to 38) and average length of stay in the program was five weeks. Summary data are provided in Table 1.

<Insert Table 1 here>

Body Mass Index

Over the course of the program, there was an improvement ($t=7.39$; $P<0.001$) in BMI between admission and discharge. However, at follow-up, BMI scores tended to decrease. Summary of BMI results are provided in Table 2.

<Insert Table 2 here>

Participant Perceptions of Practical Food Groups

Table 3 shows at discharge, participants generally rated the importance and usefulness of practical food groups highly (4.73 and 4.43 on a five-point scale, respectively); and they tended to rate their enjoyment of the groups lower (3.50 on a five-point scale).

<Insert Table 3 here>

Participant responses centred around one core theme: success through participation. Four themes were attributed to participant experiences in practical food groups, including experiences shaped by internal and external factors. Two themes explored the transferability of skills to the real world. The dynamic relationship between individual's participation in practical food groups and skill transferability in real environments is depicted in Figure 2.

<Insert Figure 2 here>

Theme 1: Helpful components of practical food groups

Participants revealed practical food groups offered a unique structure, shared experience and supportive environment. *Unique structural elements* that groups followed were identified as essential to address resistance to feared foods. Examples include: ordering within one-minute, non-optional participation and individual accountability.

Non-negotiables and level of accountability...helped me tremendously...when the eating disorder was loud and attempting to seduce me away from committing...100% (Participant #73).

Participants discussed the benefit of behavioural experimentation in disproving many pre-conceptions held about food.

It was...useful to find out..my fears were not completely founded and my beliefs were often disproved (Participant #69).

The *shared experience* that practical food groups followed, enabled mutual support and facilitated discussion of experiences in a friendly and non-judgmental environment.

Group sessions...are very beneficial...to openly discuss our previous day, without the fear of judgement. [They] are also great for learning about nutrition, exercise and coping skills (Participant #97).

Participants fostered greater confidence during challenges knowing that others shared similar fears. Supportive networks can aid positive distractions, enable assertive communication and instil motivation.

Distraction through talking helps to prevent mulling over the situation...Also, the fact that everyone is eating the fear foods...makes my own challenge less world-shattering (Participant #93).

Lastly, practical food groups created a *safe and supportive environment*; participants spoke positively about their experiences. Initial support within groups appeared most important; without which they would have not challenged their food fears.

I would not have done it with out them and the support (Participant #83).

Feedback such as validation of fears and anxieties, empathetic support and monitoring of food behaviours was reported as beneficial. Staff participation was pivotal in role-modelling normal eating behaviour.

The most helpful part was just seeing them [staff] order sometimes the "scarier" option and...eating a big portion like it was nothing (Participant #49).

Theme 2: Perceived benefit of exposure

The benefits of *previous experience* are noted where individuals described the sense of relief, satisfaction and increased confidence from challenging feared foods. Addressing previous resistance to food challenges encouraged the transformation of negative experiences into more positive behaviours, illustrating ‘success through participation’.

[Previous experience] showed me I could survive and cope with situations I didn't think I could deal with. [It] helped me to see that anxiety will eventually lessen [and] gave me confidence to try...on my own (Participant #107).

Individuals recognised that although participation in real life experiences were challenging, they discussed the importance and relevance of these challenges. Many participants stated challenges were beneficial to participation in everyday life, opening up more opportunities, such as attending social gatherings.

As a result of *repeated exposure*, individuals reported increased social confidence, positive behavioural skills, reduced anxiety and more positive thoughts towards feared foods.

Discovering that once you challenge a fear food for the first time, it can only get easier...to challenge...again. Practice makes perfect! (Participant #72).

Repeated exposure allowed individuals to realise the pervasive negative impact that food fears held, and begin to develop a positive rationale around re-introducing feared foods into their lives.

When you look at social gatherings...and how much you miss out on when you're unable to participate...the cost not to is just too high (Participant #73).

Theme 3: Impact of applying cognitive and behavioural skills

Applying cognitive and behavioural skills to real environments is a key feature of practical food groups. Participants discussed using *coping strategies*, such as ‘mindfulness’, ‘intuitive eating’, ‘chain analysis’, ‘urge surfing’, and ‘thought-challenging’ behaviours to manage distress. Many participants reported becoming more equipped to challenge the disorder in a positive way.

I learnt about becoming more aware of what thoughts and emotions are driving my behaviours and using skills of thought challenging or distractions that work for me (Participant #81).

Increasing self-awareness throughout the program allowed individuals to be more accepting of personal values and less self-critical. This improved participants’ realisation they were their own drivers of recovery. Learning to accept and sit with uncomfortable thoughts (using emotion-based skills and radical acceptance) and better understand distorted cognitions were discussed as aids to cognitive change.

The skills and awareness I have developed...has given me a new found sense of hope and strength. Channelling that...and focussing on my intent has allowed a huge shift in my thinking and behaviours (Participant #52).

In addition to cognitive skills, groups provided a consistent and repetitive schedule, enforcing planned meals and *routine*. This was identified to help individuals set “short-term, specific goals.” To avoid making decisions during periods of high emotion, individuals planned meal challenges in advance; prioritising meal plans was also described to be helpful.

Assertive communication and emotional expression is necessary to improve psychosocial functioning. Individuals recognised through improved communication and accessing support, they were less likely to resort to negative behaviours, and experience positive relationships.

Practising mindfulness...and expressing my needs...instead of going straight to binging and purging...[has resulted in] better communication and relationships with [others] (Participant #86).

Theme 4: Challenges affecting participation

Within practical food groups, individuals identified internal and external barriers that hindered food challenges. Individuals described *flooding anxieties* as a result of exposure. Social anxiety relating to feeling exposed in public was mentioned. Participants showed resistance to change, ‘continuing to fall into the binge/purge cycle’, and discussed the effect of persistent eating disorder thoughts.

I have had an eating disorder for around 20 years...so four weeks of treatment are a start...[but not] enough to change...my mind sets (Participant #69).

Unsurprisingly, individuals reported the *lack of control* within groups was not always enjoyed. Ambiguity of location, pressure to talk about distorted perceptions and having to finish their entire serving were mentioned. Individuals discussed not knowing how the food was cooked or how big the portion was increased anxiety.

Many participants struggled to independently complete these activities outside of the program. The *lack of access to personal supports and resources* was one contributory factor. Many individuals discussed the lack of structure and reliance on internal motivation hindered challenges. Additionally, unhelpful environments outside groups hindered sustained change. Participant #86 exemplified:

At [name of program] I found it easy...everyone was eating the same foods...At home it was harder...I find myself being triggered by my partner who is recovering from anorexia.

Theme 5: Facilitating adaptation

Practical food groups were identified as a key step in sustaining positive change once participants left the program. Improving psychological skills in the program was associated with *increased knowledge and self-awareness*, addressing irrational perceptions and coping with emotional distress. Individuals spoke of developing realistic expectations.

You can have everything in moderation (which...I always knew, but never...trusted).
(Participant #38)

Individuals mentioned improved understanding of a balanced diet and exposure to healthy meals and portion sizing. Participants discussed improved self-identity, focussing on a meaningful life separate from eating disorders.

Falling pregnant, therefore having something more powerful than my eating disorder for motivation (Participant #63).

To *re-create challenges*, participants used behavioural and practical skills learnt within the program. Individuals discussed the use of ‘positive talk statements’, ‘portioning’, ‘using the one-minute rule’, and ‘trusting intuition’ to focus and persist with food challenges. Positive behaviour changes, including integrating meal challenges into daily life and repeating behavioural experiments were valued.

I...do it regularly...out of the program so it just seem[s] normal (i.e. I would go out for a challenging meal twice a week for the first few months, after that there were not really any red zone foods) (Participant #38).

Finally, the *availability of personal and professional supports* was important in encouraging sustained change. Professional supports were necessary to provide validated feedback, informed decisions and routine management. Social support was reported as having a profound effect in recovery.

Having health professionals and family/friends encourage you to eat and help to see it as a good thing...not...something to feel guilty about (Participant #47).

Theme 6: Influence of eating disorders on challenging feared foods

Self-defeating beliefs and negative eating disorder thoughts were arguably the strongest factors affecting participant’s ability to sustain positive changes made in the program. Unhelpful cognitions such as ‘continued and unpredictable rumination’, ‘very low mood’, ‘lack of confidence’ and a continuing desire to lose weight were reported as hindrances to recovery. Moreover, negative coping mechanisms such as purging and excessive exercise commonly arose. Individuals showed *resistance to change*, saying old

behavioural patterns were easier to fall back on than applying new coping strategies and facilitating behavioural changes.

I still cannot manage eating certain foods without restricting other food groups...I had...gelato on Sunday: I allocated it as my lunch (Participant #69).

Individuals commented that their time in the program was insufficient to effectively challenge distorted cognitions and develop emotional coping strategies.

I should have stayed...longer to try to normalise the feared/challenging foods (Participant #64).

The *loss of structure and support*, consistent with results at discharge made challenging feared foods difficult. 'Lack of psychological support', 'being alone/isolated', and having individuals ignorant to eating-related anxieties illustrate the loss of support many individuals experienced following discharge. Participants described individuals talking about their diet and 'eating with others who are weight conscious' as hindrances to recovery. Further, "*the lack of accountability...[and thoughts of] it's up to me to make the decision to do something scary*" (Participant #29) was identified.

DISCUSSION

This study investigated the contribution of practical food groups to support long-term behavioural and cognitive changes for individuals with eating disorders. It was hypothesised that, through practical food groups, participants would improve eating behaviours, reduce negative coping mechanisms and provide a foundation that may support sustained recovery. The analysis suggested that participation gave individuals the opportunity to practice behavioural and cognitive skills with eating to improve skill transferability however, eating disorders are an enduring illness with many factors hindering recovery. The findings identified factors within practical food groups that aided skill transferability and supported recovery, and additionally provided insight into what was not helpful and reasons why.

Individual perceptions of practical food groups

These data expand the current understanding of activity-based intervention and exposure to feared foods, supporting the more recent emphasis on these interventions in improving recovery.^{4,6,28} Participant responses enabled the authors to explore why “real world” experiences might be necessary. Feedback from participants clearly indicated that while practical food groups were challenging, they were considered extremely important in improving eating behaviour. For instance, participants rated enjoyment of the program relatively low, and ratings for importance and usefulness were the highest. Factors that increased the level of challenge were potentially attributed to high anxieties, and the limited control in groups and non-optional participation that were enforced. Individuals reported going back to old behaviours as a barrier to recovery; confirming the notion that changing maladaptive behaviours is difficult. This is consistent with literature that highlights the challenges associated with relinquishing harmful social and eating routines, and eating disordered ways of coping.^{5,34,35}

Subsequently, findings indicated that individuals appeared to recognise the importance of active engagement to challenge feared foods and engage in social eating. Participant perceptions of acquiring new skills are an important outcome as many individuals lack confidence, self-efficacy and perceived ability^{1,3} This finding also confirmed recent research³⁶ that identified the value of meal preparation in experiential environments to allow individuals to experience the trauma they associate with food. With deeper exploration, addressing real life experiences and providing initial support needed to challenge resistance may develop a platform to recovery and skill transferability.

Findings indicated the structure that practical food groups followed was successful for this population. Namely, individuals commented on the benefit of a collegial environment, access to professional supports, and routine that was followed. The collegial environment

allowed for peer based feedback and individuals could more effectively explore their illness. These findings are consistent with previous literature^{34,37}, reporting that expressing thoughts and feelings to peers and receiving validation of fears and anxieties can aid recovery. From the current study, we can draw the conclusion that mutual support was perceived to be pivotal in challenging feared foods. Perhaps a greater attention should be placed on these supportive environments and not on one-to-one therapy sessions (e.g., as described by Steinglass et al.^{4,28}). This importance of professional supports are consistent with earlier literature^{6,34}, indicating that help with decision-making, positive modelling behaviours and taking supportive risks improved normalisation of eating behaviours. Additionally, the importance of assertive communication is well established as these individuals often withdraw from social eating and lack interpersonal skills^{1,2,9}. Results showed this was beneficial in reducing eating disordered behaviour and negative coping mechanisms. Furthermore, consistent with previous research^{34,38} routine was demonstrated to be important to recovery. Those individuals who were able to integrate meal challenges into daily routines appeared more likely to be able to sustain the behaviour changes developed within the program.

Practical food groups as an avenue for increasing skill transferability

Participant responses to the rate of skill transferability at discharge were relatively high (3.92 on the 5-point scale), suggesting that practical food groups facilitated the development of cognitive and behavioural skills helpful for independent challenges. This finding is important due to lack of self-competence and resistance to change often seen in these individuals.^{2,6,39} Key findings suggested that repeated exposure and applied cognitive techniques to overcome distress allowed individuals to pass through the exploration-competence-achievement continuum, in line with previous literature⁶. Consistent with findings from Lock et al.⁶, the process of behavioural experimentation allowed participants to

effectively challenge distorted cognitions. The realisation that normal eating did not eventuate in feared outcomes was a powerful avenue for cognitive change.

Based on these data, the ability to challenge distorted perceptions improved individuals' understanding of their eating disorder. Helping individuals understand real life stressors involved with eating and working through coping mechanisms to improve abilities in food challenges, sets up an appropriate base for addressing challenges long-term. In line with other authors³⁴, fostering growth of self-awareness, tolerance of negative emotions and facilitation of strategies to improve eating disordered behaviour improved the likelihood of recovery.

Although many participants benefited from practical food groups, some participants were less confident to repeat challenges and reported lower skill transferability. Findings suggested participants who found it more difficult to integrate skills learnt tended to report three things. Strict dieting and excessive exercise are in line with goals of thinness and self-control; therefore encouraging individuals to gain weight and eat 'normal' meals was not easily accepted.⁴⁰ Secondly, loss of support, feelings of judgement and eating with others who failed to understand associated anxieties were labelled as hindrances to recovery. Where mutual understand and peer support was not present it was more challenging for participants to address maladaptive eating behaviours.^{34,37} Finally, findings suggested rigid thoughts, irrational body perceptions, and extreme fear of weight gain affected participation outside the program. Results also showed that some individuals struggled to maintain weight post-treatment, generally reducing BMI scores over time. However, most individuals described positive cognitive skills learnt and showed increases in confidence to challenge feared foods, implying activity-based interventions make a positive contribution to recovery.

Limitations

The major limitation is the use of non-standardised report measures. Questionnaires were developed for the purpose of service evaluation and not piloted to test validity. Other concurrent treatments within day programs may have influenced progress; therefore findings should be carefully interpreted. The sample of participants had attended an eating disorders program four days a week, so may not be representative of all individuals with eating disorders. Further, gender representation is limited as there was only one male participant, and the small number of participants with binge eating disorder means the findings of this study may not be as applicable to these populations. It must be considered that individuals who provided the longitudinal information are more likely to represent individuals who have been more successful in challenging feared foods. Interviews may have provided more in-depth data related to participant experiences.

Conclusion

Despite limitations, this study had a relatively large participant sample and contributes to the emerging evidence for the usefulness of practical food groups. This study highlights that practical food groups are considered useful, challenging and highly valued as part of day treatment. The majority of participants increased confidence to challenge feared foods, noticed reductions in anxiety after repeated exposure and accepted new, healthier, ways of eating as a result of participation. Further research is needed to improve the generalisability of findings, and build upon the limited evidence base regarding the potential benefit of experiential activities for individuals sustaining long-term recovery.

Acknowledgements/Disclosure of Conflicts

No conflicts of interest are declared

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TABLES AND FIGURES

Table 1: Demographics of study participants

Participant Characteristics	Measures
Age mean (SD)	26 (5.96)
LOS mean (range)	5.23 weeks (1 day – 27 weeks)
<i>Gender</i>	
Female	98
Male	1
<i>Diagnoses (DSM-IV-TR)</i>	
Anorexia nervosa <i>n (%)</i>	11 (11.1)
Bulimia nervosa <i>n (%)</i>	30 (30.3)
Binge eating disorder <i>n (%)</i>	3 (3.0)
Eating disorder not otherwise specified <i>n (%)</i>	45 (45.5)
Missing	10 (10.1)

LOS = Length of stay, SD = Standard Deviation

Table 2: Means and standard deviations for BMI scores across time points

Time Point	BMI Score	SD
Admission (n=99)	20.97	4.18
Discharge (n=99)	21.81	3.89
6-month follow-up (n=48)	20.35	2.65
12-month follow-up (n=28)	19.25	2.64
24-month follow-up (n=12)	19.98	1.43

n = Number of participants, BMI = Body Mass Index, SD = Standard Deviation

Table 3: Means and standard deviations for measured variables at discharge

Variables	Mean Scores*	Min	Max	SD
(n= 74)				
Enjoyment	3.50	1	5	0.98
Difficulty	3.96	1	5	0.85
Confidence	3.77	2	5	0.85
Usefulness	4.43	2	5	0.74
Importance	4.73	3	5	0.53
Skill transferability	3.92	1	5	0.90

*1 – 5 Likert-type Scale, n = Number of participants, SD= Standard Deviation

Figure 1: Open ended questions used in discharge and follow-up qualitative questionnaires

Discharge
<ol style="list-style-type: none">1. What aspects of practical food groups did you like/dislike?2. What skills did you learn that you were not able to do prior to day program treatment?3. Please comment on the support of staff during these groups. Do you have any suggestions how they could have supported your needs in any other way?4. Which factors have helped you challenge fear foods outside of day program?5. What factors have not helped you challenge fear foods outside of day program?6. Can you suggest any other ways these food groups can be improved? Do you have any further comments?
Follow-up
<ol style="list-style-type: none">1. Can you identify things that have helped you challenge feared foods since leaving day program?2. Can you identify things that have not helped you challenge feared foods since leaving day program?3. Are there any previously feared foods you still struggle to eat?

Figure 2: Illustration of Themes



APPENDICES

Appendix 1: International Journal of Eating Disorders Guidelines

ORIGINALITY

The journal accepts for review manuscripts that have not been published or are not currently elsewhere under review.

CONTENT TYPES

Manuscripts published by IJED include: (1) Original Articles; (2) Brief Reports; (3) Critical analysis and Synthesis (systematic reviews and meta-analyses); (4) Commentaries; (5) Clinical Case Reports; (6) and “An Idea Worth Researching”. All word limits relate to the body of the text (i.e., not including abstract, references, tables or figures). These are maximum lengths, and authors are encouraged to keep their reports as short as possible while communicating clearly. The review criteria will include appropriateness of length.

When uploading their manuscripts, authors will be asked to complete a brief checklist indicating that the authors have followed the author guidelines pertaining to the article type.

To summarize, the article types are:

(1) Original Articles reporting substantive research that is novel, definitive or complex enough to require a longer communication. Note that only a subset of research papers are expected to warrant full length format

- Word Limit: 7,000 words, excluding abstract, references, tables and figures
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