Placing the Focus on Perfectionism in Female Adolescent Anorexia Nervosa:
Augmented Maudsley Family-based Treatment

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Abstract

Anorexia nervosa (AN) is one of the most difficult and costly eating disorders to treat. Maudsley family-based treatment (FBT) is one widely-used treatment that has been called the gold-standard treatment for adolescents diagnosed with AN. However, FBT does not directly address some of the biased belief patterns that may reduce the likelihood of recovery and increase the risk of relapse. Addressing perfectionism has been proposed as a way to enhance the effectiveness of FBT treatment for AN, given that it has been found to be a correlate of greater chronicity of symptoms and predictive of relapse. Three studies were conducted to consider the efficacy of FBT augmented with cognitive behavioural therapy (CBT) to address perfectionism. In the first study, published meta-analyses on FBT were located and described, supplementing them with a systematic search and review of newer published FBT trials. In the next two studies, the feasibility and outcomes of ‘FBT + CBT’ were investigated. The CBT sessions focused on reducing adolescents’ perfectionistic and other self-related maladaptive cognitions and behaviours that could maintain AN. In both studies, eating disorder pathology and perfectionism were measured at four times during treatment, including pre–FBT + CBT treatment, prior to the start of CBT, after the completion of CBT, and post–FBT + CBT treatment.

In Study One, the systematic review of the literature revealed that FBT (and family therapy variants) is not significantly superior to other psychotherapies when outcomes are compared at the end of treatment. However, FBT was found to be superior to individual therapy at 6- to 12-month follow-up. Three new randomised controlled trials were located, which compared variants of FBT. Thus, they did not meet the inclusion criteria for meta-analysis. All trials were described in detail, and findings suggested that an intervention augmenting FBT with CBT was an important future
direction in AN treatment for adolescents.

Study Two was a case series of three adolescent females with AN who took part in the FBT + CBT intervention. One participant achieved full remission, and the other two participants were very close to achieving the level of expected body weight (approximately 3% below the 95% level) at the end of treatment. Also noteworthy is that all three adolescents reported very high levels of perfectionism at pre-treatment and, on average, experienced a reduction in perfectionism and inflexible and rigid thinking immediately after the CBT component and by the end of treatment, across most measures.

Study Three was a single cohort study of 21 female adolescents who received FBT + CBT, with a treatment length of approximately 12 months (19 completed treatment). Using intent-to-treat analyses, there were significant improvements in ED symptoms, weight and perfectionism by the third assessment (following CBT) and at the end of treatment (FBT+CBT) compared to pre-treatment. Of the 19 completing participants, more than one-half met criteria for reliable improvement on almost all measures, and all participants met criteria for reliable improvement in weight. Results were also optimistic for remission.

The findings suggest that adding a module of CBT for perfectionism to FBT is associated with reduced symptoms and reduced perfectionism in adolescents diagnosed with AN. Most female adolescents treated with FBT + CBT recovered from their AN by treatment completion. Future research should be conducted that directly compares the outcomes of FBT to either FBT+CBT, or CBT-enhanced (CBT-E) and longer-term follow-ups should be conducted to assess the length and rate of disease remittance or time to relapse.
Statement of Originality

This is to certify that, to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or for any other purpose. I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Signature:_______________________ Date: ________________
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<td>Average Body Weight</td>
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<tr>
<td>AN</td>
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<td>ANGI</td>
<td>Anorexia Nervosa Genetics Initiative</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>BN</td>
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Acknowledgements

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Eating disorders (EDs) are complex because of the variety of intrapersonal, interpersonal and societal factors that contribute to their onset and progression (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011) and the many complications involved in treating them (Mitchell & Crow, 2006). EDs are also a significant public health problem because of their negative effect on the individuals suffering from the disorder (Mond, Hay, Rodgers, & Owen, 2007), the families of the sufferers (Treasure et al., 2001) and the broader community (Mathers, Vos, Stevenson, & Begg, 2000). EDs are characterised by a severe and persistent disturbance in eating behaviour that causes psychosocial and sometimes physical impairment (Murphy, Straebler, Cooper, & Fairburn, 2010). The onset of an ED commonly occurs at the most developmentally important time of transition for many individuals—in their teens and early twenties (Steiner et al., 2003). Such an early onset of a difficult to treat disorder makes EDs especially troubling. Overall, the effects of EDs are often chronically debilitating and destructive to cognitive, social and vocational/educational development (Striegel-Moore & Bulik, 2007).

EDs also carry substantial costs across multiple domains, including economic, social and loss of life (Gatt et al., 2014). In 2012, Deloitte Access Economics (http://www2.deloitte.com/au/en/pages/economics/articles/butterfly-report-paying-price-eating-disorders.html) was commissioned to examine the economic and social costs of EDs in Australia. According to this report, there was a notable increase in disordered eating behaviours in Australia between 1995 and 2005. EDs have been listed as the twelfth leading cause of mental health admissions, and the financial cost of EDs in 2014 was AUD$19.8 billion—or AUD$20,970 per person (with a prevalence of over
945,000). The burden of disease costs for EDs is estimated as AUD$52.6 billion, which is comparable to the estimates for anxiety and depression of AUD$41.2 billion, and for obesity of AUD$52.9 billion.

Anorexia nervosa (AN) is one of the most difficult and costly EDs to treat. AN is characterised by extremely low body weight, body image distortion and an obsessive fear of gaining weight (American Psychiatric Association, 2013). Those who suffer from AN are dissatisfied with the perceived shape and size of their body, and engage in an array of behaviours designed to perpetuate extreme weight loss and maintain a very low body weight. It is staggering to note that the cost of treatment for an episode of AN is second only to cardiac artery bypass: "The estimated per person hospital inpatient cost for eating disorders overall is AUD$13,123. Hospital inpatient costs for AN are more than twice as high as for either bulimia or other eating disorders" (Deloitte, 2012, p. 57). AN is a very serious psychological illness with the potential for severe long-term psychiatric and medical problems (Bulik, Reba, Siega-Riz, & Reichborn-Kjennerud, 2005).

AN has the highest mortality rate of any psychiatric illness, at 10 to 20% of sufferers, due to the combined serious physical and psychological factors associated with the diagnosis (Katzman, 2005). When onset occurs in adolescence, the prognosis is more optimistic because the illness can often be identified and treated before the cognitive and behavioural patterns have become entrenched and chronic. However, when AN becomes protracted in early and middle adulthood, remission and recovery are much more complicated and difficult to achieve (Smink, Van Hoeken, & Hoek, 2013).

Overall, it is possible to recover from AN. However, early diagnosis and intervention quickly following onset, coupled with effective therapy, may be critical to
recovery. Evidence-based treatment and research into new and innovative therapies are contributing to more effective interventions and theoretical understandings, especially when accessed early (such as in adolescence). However, much more research is needed to evaluate treatments that are currently used by clinicians and to investigate the causes of EDs—especially in terms of differentiating AN from other types of EDs—to guide these treatment interventions. However, to date, many risk factors specifically for AN that can be targeted in treatment have been identified, including low self-esteem (Hartmann, Thomas, Greenberg, Matheny, & Wilhelm, 2014), negative emotionality (Keel & Forney, 2013) and perfectionism (Lloyd, Fleming, Schmidt, & Tchanturia, 2014).

Some of these risk factors are addressed in some of the most effective treatments of AN, such as family-based treatment (FBT) (Lock, 2010) and cognitive behavioural therapy (CBT) (Fairburn, 2005). However, unfortunately there is limited empirical support that any of these treatments are effective for AN across all patient populations (Watson & Bulik, 2013). However, there is a gradual accumulation of evidence suggesting that FBT is effective for a younger population of sufferers. FBT aims to generate recovery in the home environment, with the parents taking an active role in all phases of treatment (Lock & Le Grange, 2013).

There have been several randomised controlled trials of FBT for children and adolescents presenting with AN (Lock, Le Grange, Agras, Moye et al., 2010; Madden et al., 2015). This treatment progresses through three distinct phases over the course of a year, including an initial focus on weight restoration and externalisation of the illness (such as to remove blame and guilt), and then family issues and relationships are simultaneously addressed as the focus slowly moves away from weight and food. The final focus is on addressing typical adolescent challenges, such as individuation, and
strengthening a sense of self and identity as a survivor of AN. These studies of FBT have all demonstrated the efficacy of this treatment, and reported that approximately 50 to 90% of participants are weight restored at the end of treatment (Agras, Lock, Brandt et al., 2014; Eisler et al., 2000; Lock et al., 2010). However, the success of FBT still varies across studies, with one study indicating that it is more effective for patients aged below 19 years of age with an illness duration of less than three years (Russell, Szmukler, Dare, & Eisler, 1987).

Although FBT appears to have positive treatment outcomes in terms of weight restoration in most studies and is commonly considered the most efficacious treatment of AN in adolescents, some maintaining psychological factors that have been found important to AN onset, progression or maintenance have largely been overlooked in this treatment approach. One sound approach towards a potentially more successful treatment for AN would be to complement FBT with a therapy that specifically addresses the psychological factors thought to maintain AN symptoms, such as perfectionism. Perfectionism is thought to adversely affect outcomes such as symptom severity, response to treatment and illness duration. Perfectionism becomes problematic when individuals experience the negative consequences of setting such demanding standards, yet continue to strive to meet these standards, despite accruing huge associated costs (Bardone-Cone et al., 2007).

The broad purpose of this research was to implement and evaluate the feasibility of an intervention designed to improve outcomes for female adolescent AN sufferers. This was done by enhancing a widely used treatment, FBT (Lock & Le Grange, 2013), which is currently provided at the Child and Youth Mental Health Service, Queensland Health, Australia. FBT was augmented to concentrate additional intervention content on a critical and important correlate of AN—perfectionism (Bardone-Cone et al., 2007).
The aim of a focus on perfectionism as an added module in FBT was to assist adolescents with AN to set more flexible and achievable standards, and to reduce the negative effect of perfectionism on maintaining AN symptoms. This augmentation of CBT methods has been known to reduce both ED symptoms and perfectionism among adults (Fairburn, Cooper, Doll, & Welch, 1999). Hence, the aim of this project was to test the feasibility of a novel intervention designed to target, and subsequently reduce, levels of perfectionism and AN symptoms in adolescents by assessing the efficacy of augmented FBT. This intervention incorporated FBT with a CBT treatment focused on perfectionism (FBT + CBT).

Three studies were undertaken. Study One extended on two recent meta-analyses on the efficacy of FBT, locating three new published RCTs of FBT (see Chapter Four). Study Two was a comprehensive portrayal of three adolescent females with AN who took part in an intervention that examined the feasibility of augmenting the increasingly popular family therapy approach to adolescent AN treatment with CBT (perfectionism) (FBT + CBT) (Hurst & Zimmer-Gembeck, 2015) (see Chapter Eight). Study Three was a single cohort study of the outcomes of FBT + CBT (see Chapter Nine). The participants were 21 female adolescents diagnosed with AN. Treatment in Study Two and Study Three involved 20 FBT sessions over approximately a 12-month period, in addition to nine adolescent weekly CBT sessions that specifically addressed perfectionism, which were delivered concurrently with phase two of FBT.

The remaining sections of this thesis are divided into seven chapters. The next chapter (Chapter Two) describes the diagnostic criteria and effect of AN, as well as the prevalence, course and aetiology of AN. Chapter Three summarises the literature on therapeutic approaches to AN, with particular attention to the development of models of family therapy and AN. Chapter Four reports the results of Study One. Chapter Five
explores the idea of augmenting FBT with individual treatment. Perfectionism and its many definitions are summarised in Chapter Six, before focusing on what is known about perfectionism and AN, including intervention approaches for reducing perfectionism in AN. Chapter Seven describes in detail the interventions used in this research—namely, FBT and CBT for perfectionism. Chapters Eight and Nine report the results of Studies Two and Three. Finally, Chapter Ten provides a final discussion of the findings, along with the theoretical and clinical implications of this research, and provides suggestions for future directions in research and clinical practice.
Chapter Two

Definition, Prevalence, Course and Aetiology of Anorexia Nervosa (AN)

AN is a condition that involves a pattern of excessive dieting and weight loss, which is accompanied by severe cognitive disturbances. Studies have shown that the cognitive disturbances associated with extreme dieting and weight loss include all-or-nothing thinking, phobic thinking and/or reactions, difficulty concentrating, increased irritability and feelings of guilt, feeling depressed or anxious, and suicidal thoughts or behaviour (Channon, De Silva, Hemsley, & Perkins, 1989; Galsworthy-Francis & Allan, 2014; Garner & Bemis, 1982). Behavioural symptoms often observed in AN include consuming food at an increased rate or eating very slowly, eating only certain types and amounts of food, avoiding social situations that involve food, and obsessive engagement in activities to burn calories and eliminate food (Fairburn, Cooper, & Shafran, 2003).

The effects of both malnutrition and starvation associated with AN can have severe medical complications and even result in death for a significant proportion of sufferers (Mehler & Brown, 2015). These complications include cardiovascular difficulties, dehydration, osteoporosis, lowered body temperature, muscle dystrophy, low blood pressure, and changes in hormone production (Sharp & Freeman, 1993; Westmoreland, Krantz, & Mehler, 2016). Although information regarding the onset and course of AN is available, the number of prognostic studies of AN remain limited. Nevertheless, most available evidence has concluded that AN has the highest mortality rate of any psychiatric illness (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005), with approximately 10 to 20% of sufferers dying within 20 years of onset (Katzman, 2005). It is predicted that approximately half of these deaths are due to suicide and half are due
to secondary physical complications of AN, particularly cardiac failure (Crisp, Callender, Halek, & Hsu, 1992; Herzog et al., 2000).

**Diagnostic Criteria for AN**

Despite this general understanding of the nature and importance of AN, the diagnostic criteria for AN have undergone several updates with the recent release of the fifth *Diagnostic and Statistical Manual* (DSM-5) (American Psychiatric Association, 2013). These updates aim to better represent the behaviours and symptoms associated with ED (Brown, Holland, & Keel, 2014). According to the DSM-5 criteria, to be diagnosed as having AN, a person must display:

- persistent restriction of energy intake, leading to significantly low body weight (in context of what is minimally expected for age, sex, developmental trajectory and physical health)
- either an intense fear of gaining weight or becoming fat, or persistent behaviour that interferes with weight gain (despite having a significantly low weight)
- disturbance in the way one’s body weight or shape is experienced, undue influence of body shape and weight on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.


Specific changes in the diagnostic criteria for AN include a greater focus on behaviours, such as restricting calorie intake, and the removal of the word ‘refusal’ in terms of weight maintenance, as this implied intention on behalf of the patient and was determined to be difficult to assess. In addition, amenorrhea—defined as the absence of at least three menstrual cycles—has been deleted because this criterion could not be
applied to males, premenarchal females, females taking oral contraceptives, and post-menopausal females. In some cases, individuals reported the presence of some menstrual activity and exhibited all other symptoms and signs of AN.

Several minor, yet important, changes have also been made to the physical and cognitive criteria for AN:

- the criteria no longer require the patient’s weight for height to be less than 85% of that expected
- the cognitive criteria—such as fear of weight gain, and shape and weight overvaluation—no longer need to be self-reported and can be inferred by behaviour or by parent reports for young people
- Body Mass Index (BMI) has been used to specify the level of severity, based on BMI for adults and BMI percentile for children and adolescents.

Finally, for each specific ED diagnostic category, a clinician is now required to specify the state of remission if applicable, as follows:

- A person may be considered in partial remission when, after full criteria were previously met, some (yet not all) criteria have been met for a sustained period.
- A person may be considered in full remission if the full criteria were previously met; yet no criteria have been met for a sustained period.

The ‘transdiagnostic’ model of EDs states that, despite symptomatic variation, all forms of ED share the same distinctive psychopathology of over-evaluation of shape, weight, and eating (Fairburn, Cooper, & Shafran, 2003). Specifically, Fairburn et al. (2003) argue that all EDs "share the same distinctive and characteristic clinical features, and that the major difference is the relative balance of under-eating and over-eating and its effect on body weight" (p. 519). Due to shared clinical features, diagnostic migration
between different subtypes of ED also frequently occurs. For example, individuals diagnosed with AN can show increasing symptoms of bulimia nervosa (BN) and vice versa. Moreover, four key maintenance constructs external to core eating psychopathology have been proposed, namely clinical perfectionism, low self-esteem, interpersonal difficulties, and/or mood intolerance (Fairburn et al., 2003).

**Prevalence and Course of AN**

Although EDs include AN and multiple other forms of ED, such as BN, the prevalence of ED may generally be on the rise. A 2008 Australian study observed a two-fold increase in the prevalence of disordered eating behaviours in the community over a 10-year period (Hay, Mond, Buttner, & Darby, 2008). However, it is thought that the reported prevalence of ED—which is often based on hospital admissions or outpatient clinic attendance—significantly underestimates the actual prevalence of most forms of ED (Deloitte, 2005). A reported reason for the scarcity of prevalence data is that ED can have a tendency to be a hidden problem. A systematic review of the literature (Hart, Granillo, Jorm, & Paxton, 2011) found that, on average, only 23% of people with an ED seek treatment for their disorder, with around half seeking treatment for weight management instead.

Typically, the onset of AN begins in early to mid-adolescence, although it can emerge at any age (Herpertz-Dahlmann, 2015). Moreover, it is a disease that is more prominent among females than males, with lifetime prevalence rates of AN reported to be around 1% in women and less than 0.5% in men (Smink, van Hoeken, & Hoek, 2012). Approximately one in every 100 adolescent females will develop AN and, in Australia, it is the third most common chronic illness for adolescent females, after obesity and asthma (Deloitte, 2005).
AN is considered a chronic illness because the average duration of the illness is five to seven years (Beumont & Touyz, 2003). Outcomes differ across age groups, with higher rates of full recovery and lower mortality in adolescents than adults (mortality of about 2% in adolescents versus 5% in adults) (Steinhausen, 2002). The illness can be protracted, with nearly 30% of patients relapsing prior to attaining clinical recovery (Strober, 2005; Strober, Freeman, & Morrell, 1997). Moreover, it can leave harmful after-effects; studies have reported how psychiatric and social impairments may persist even when AN symptoms abate (Crisp et al., 1992). Steinhausen (2002) reported 13.7% chronicity and 9.4% mortality after a 10-year follow-up of 119 patients with AN. Other studies have indicated that, if onset occurs during adolescence, the outcomes tend to portray a more hopeful picture (Lock, Couturier, & Agras, 2006; Strober et al., 1997).

**Aetiology of AN**

Zipfel, Giel, Bulik, Hay, and Schmidt (2015) argued that, to successfully treat AN, there must be an enhanced understanding of the underlying biological, psychosocial and specific disease mechanisms in order to improve strategies for prevention, early intervention and treatment. Fortunately, there has been much research seeking to identify the causes of AN. This research has revealed many correlates of both the onset and course of AN; however, many questions about these issues remain. As is the case for most complex and life-threatening mental health disorders, Steinhausen (2002) theorised AN to be of ‘multifactorial origin coupled with multiple determinants and risk factors and their interactions within the developmental framework’ (p. 1284). This statement reveals that there are many known correlates and determinants of AN.

In particular, researchers have shown that the onset and course of AN are associated with biological, psychological, social and developmental factors (Colliere & Treasure, 2004; Hsu, 1983). Biological factors refer primarily to genetics,
neurotransmitters and medication, whereas psychological factors comprise emotions, behaviours and cognitive functions. Social influences consist of relationships, gender roles and culture, and developmental factors encompass changes that occur in human beings over the course of their life span. In addition to these four broad areas, external environmental factors and stressors may also play roles in AN.

**Pathogenesis/genetic factors.** Research exploring the biological influences on ED through family and twin studies has suggested that AN is strongly familial (Klump, Miller, Keel, McGue, & Lacono, 2001; Walters & Kendler, 1995), and heritability estimates range from 28 to 74% (Yilmaz, Hardaway, & Bulik, 2015). Strober and Humphrey (1987) reported that the prevalence of ED among sisters of anorexics ranged from 3 to 10%, and the lifetime risk of developing AN in the relatives of patients was approximately six times greater than in the matched controls. Although these data are interesting, they warrant further rigorous exploration because it is not yet possible to draw firm conclusions regarding the precise contribution of genetic factors for AN (Bulik, Sullivan, Wade, & Kendler, 2000). Some research is underway that will provide more information regarding genetics and AN. For example, the Anorexia Nervosa Genetics Initiative (ANGI) is the world’s largest and arguably most rigorous genetic investigation of AN currently being undertaken (Kennedy et al., 2015). The ANGI study aims to recruit 2,200 Australian (aged 12 years and above) and 300 New Zealand (14+) males and females with lifetime AN in order to locate genes that might enhance risk. Each participant completes an online survey that collects phenotypic information and provides a blood sample. It is hoped that the results will identify and develop better understandings of the cause of AN in order to eliminate the associated stigma and find a cure.
The neurotransmitter serotonin has been linked to AN (Kaye et al., 2005), with studies suggesting that significant disturbances occur in the serotonin system of those diagnosed with AN (Brewerton, 1995). In particular, the levels of 5HT receptors may be high in those with AN (Bailer et al., 2007; Hurley & Taber, 2008). It is thought that this neurochemical alteration may perpetuate AN eating behaviours and may explain the symptoms of depression and anxiety often experienced by these patients, as these receptors are linked to mood, anxiety and impulse control (Kaye et al., 2005). The perplexing question in relation to neurobiological functions and AN is whether alteration of the neurochemical system occurs prior to AN, is an outcome of AN, or is both. Some of these abnormalities could exist as a direct result of starvation, rather than being a cause of AN, although they may contribute to maintenance once the ED is established. Hypotheses that connect AN and the serotonin system are important; however, studies have not yet provided a complete understanding of the disease process, and further research is required.

**Neurocognition and social cognition.** Prospective longitudinal studies of children with a high familial risk of ED have suggested that some neurocognitive and social cognitive vulnerabilities may be present in early childhood (Kothari, Solmi, Treasure, & Micali, 2013). These include set-shifting difficulties (such as difficulties switching between different tasks or task demands) and poor central coherence (such as preference for detail-focused over bigger-picture processing) (Tchanturia & Lock, 2011). Set-shifting inefficiencies in adults with AN have also been found, suggesting that both illness stage or duration and severity can affect performance. Yet it is unclear whether these inefficiencies are the only correlates of AN, as these impairments have also been noted in unaffected sisters of those with AN (Kanakam & Treasure, 2013). The neurocognitive profile of children and adolescents with AN is less clear when
compared to the findings for adults. A meta-analysis by Lang, Stahl, Espie, Treasure, and Tchanturia (2014) of seven studies that used either the Trail Making Task or Wisconsin Card Sorting Task to measure set-shifting revealed that the inadequacies apparent in the adult AN literature did not appear to be as pronounced in children. The Wisconsin Card Sorting Task studies revealed a non-significant pooled effect size ($d = 0.2$) when comparing children and adolescents with AN to non-affected children and adolescents. This may suggest that set-shifting difficulties in adult AN are the result of starvation or indicative of a longer duration of illness.

Much more research has concentrated on ED and social processing. To summarise these findings, one study conducted meta-analyses of 154 studies (Caglar-Nazali et al., 2014). The results showed that individuals with an ED had significant problems with social understanding, when compared to the controls. Specifically, individuals with ED had deficits in attachment insecurity ($d = 1.31$) and perceived low parental care ($d = 0.51$). They also reported more parental overprotection ($d = 0.29$), had impaired facial emotion recognition ($d = 0.44$) and facial communication ($d = 2.10$), had increased facial avoidance ($d = 0.52$), reported reduced agency ($d = 0.39$), had more negative self-evaluation ($d = 2.27$), reported more alexithymia ($d = 0.66$) and poor understanding of mental states ($d = 1.07$), and felt more sensitive to social dominance ($d = 1.08$). These difficulties were observable both during the illness and in a muted form after recovery.

**Psychological and individual factors.** A significant amount of work has focused on the psychological and individual factors that contribute to the emergence of AN. These may be some of the most important correlates of AN because they are likely to be the most easily addressed during treatment and could potentially be a focus of prevention strategies. Anorexic eating behaviour is thought to originate from feelings of
inadequacy and unattractiveness, and seems to be maintained by various cognitive biases that alter how the affected individual evaluates and thinks about her or his body, food and eating. AN sufferers become preoccupied with food and weight, and some argue that this preoccupation is a way of distracting the self from emotional difficulties and low self-esteem (Lobera, Estébanez, Fernández, Bautista, & Garrido, 2009).

Characteristics that have been found to increase the risk of AN onset include low self-esteem (Baird & Sights, 1986; Keel & Forney, 2013), feelings of ineffectiveness (McLaughlin, Karp, & Herzog, 1985; Wagner, Halmi, & Maguire, 1987) and body image dissatisfaction (Rohde, Stice, & Marti, 2015).

Kearney-Cooke and Striegel-Moore (1997) proposed a body dissatisfaction model that assumes that AN may be perceived by the sufferer as a behaviourally coping skill that develops out of attempts to deal with stressful life events or significant change. This suggests that a sufferer may be struggling to manage her or his emotions, so she or he ‘uses’ focus on the body to cope with stress and change by applying strategies such as dieting or restricting food intake. This strategy may contribute to the relief of distressing emotions in the short term, but is maladaptive in the long term.

The physical changes associated with puberty and their potential consequences for ED development and psychosocial effects (such as increased body dissatisfaction) have also been the focus of several studies (Fornari & Dancyger, 2003). In a 10-year longitudinal, population-based study, Bucchianeri, Arikian, Hannan, Eisenberg, and Neumark-Sztainer (2013) examined changes in body dissatisfaction from adolescence to young adulthood (N = 1,902) from diverse ethnic/racial and socioeconomic backgrounds in the United States. The results revealed that both the female and male participants’ body dissatisfaction increased between middle and high school, and continued to increase during the transition to young adulthood.
Historically, puberty has been one of the most frequently discussed risk periods for the development of EDs and their symptoms (such as body dissatisfaction, weight concerns and dieting). Studies have indirectly examined the influence of puberty by exploring rates of ED in children versus adolescents. These studies have consistently indicated a significantly increased prevalence of all forms of ED in individuals in mid-to late adolescence, as compared to pre-adolescence, and have also indicated that pre-pubertal onset of ED is rare (Bulik, 2002). Other theories have examined the timing of puberty—that is, early maturers are thought to be at particular risk because they experience physical changes earlier than their peers and may subsequently experience even more body dissatisfaction than their developmentally on-time counterparts, thereby affecting self-esteem and mood (Bulik, 2002; Fornari & Dancyger, 2003). These theories emphasise the role of body dissatisfaction in causing increased dieting that leads to AN and/or BN.

**Sociocultural factors.** Sociocultural studies have highlighted several aetiological factors relating to AN, including the role of cultural factors (Szmukler & Patton, 1995). Most prominent among the sociocultural studies in this research has been the role of the media in ED. Studies have focused on the promotion of thinness as the ideal female form in Westernised nations (Garner, Garfinkel, Schwartz, & Thompson, 1980; Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999), books and magazines that provide tips on calorie counting and diets (Andersen & DiDomenico, 1992), television and movies promoting the idea that skinniness is associated with sexual appeal (Moe, 1999), and the fashion industry promoting slimness (Rabak-Wagener, Eickhoff-Shemek, & Kelly-Vance, 1998). This role of the media can create increased unease and unhappiness with bodily appearance.
According to these theories and associated research, the development of AN appears to be precipitated and perpetuated by the discrepancy between actual weight and socially acceptable weight ideals, which generates a susceptibility to body dissatisfaction, loss of control and self-loathing (Hsu, 1997). However, it is also possible that these Western influences could simply increase the number of individuals who engage in behaviours such as strict dieting or excessive exercise, which can then trigger an ED in genetically susceptible individuals.

In addition to the media’s portrayal of appearance norms and ideals as influences on ED prevalence in Western cultures, family factors have also been a focus in studies of early influences on the development of AN. A number of authors (Harris, Brown, & Bifulco, 1986; Schmidt, Tiller, & Treasure, 1993; Selvini-Palazzoli, 1974) have described differences in background environment (such as the quality of parental care) between people with and without an ED, suggesting that AN is associated with the controlling and authoritative nature of the mother–daughter relationship.

Another study of 28 sister pairs—in which one sister had AN and the other did not—identified that environmental factors (including sibling interaction, parental care, peer group characteristics and other events unique to the individual) are likely to be antecedents of AN. Maternal control, antagonism and jealousy towards siblings, and limited intimate relationships or friendships appeared to characterise the young women susceptible to AN, in contrast to their unaffected sisters (Murphy, Troop, & Treasure, 2000).

**Summary**

Although the causes contributing to ED are complex and remain poorly understood, despite research spanning several decades (Steinhausen, Jakobsen, Helenius, Munk-Jørgensen, & Strober, 2015; Stice, 2002), genetic predisposition,
environmental factors and sociocultural contributors have all been implicated. As with many other mental health disorders, such as depression and anxiety (Cummings, Caporino, & Kendall, 2014), the adolescent years are viewed as the greatest risk period for the development of ED—partly or completely because of the convergence of physical and psychological challenges at this time. The demands of meeting the tasks of adolescence may be difficult for some and may have a significant effect on confidence and self-esteem. The socioemotional markers in individuals with AN show they also have difficulties in processing and indicate attentional biases; impaired emotion recognition, regulation and expressivity; and poor theory of mind. Given these deficits, individuals who struggle to meet the challenges of adolescence may feel a sense of being out of control. As dietary restraint and control of eating are valued in our society, weight consciousness may be a non-specific response to the overwhelming demands of puberty (Gowers & Shore, 2001).

It has been highlighted that weight and shape concerns are extremely prevalent and commonly lead to dieting, yet only a minority of dieters go on to develop EDs. However, it is probable that most factors in the aetiology of ED are mediated through weight and shape concern or need for restraint. It is suggested that these cognitions lead to dieting behaviour, and subsequently to an ED.

Although there is still some way to go, understanding the specific aspects and risk factors associated with AN has facilitated the exploration of interventions aimed at modifying the course, duration and devastating long-term consequences of a protracted ED illness. The next chapter (Chapter Three) describes the changing landscape of AN treatment, with particular reference to the contribution that models of family therapy have made to adolescent AN intervention.
Chapter Three

Family-based Treatment as a Therapeutic Approach to

Adolescent Anorexia Nervosa (AN)

Much of the research on the aetiology of AN has been conducted in order to inform and shape psychotherapeutic treatment approaches. To date, these approaches have been significantly influenced by four models and associated empirical evidence:

1. psychoanalytic models (Garner, Garfinkel, & Bemis, 1982; Johnson, 1991)
2. cognitive behavioural models (Channon et al., 1989; Fairburn, 2005)
3. humanistic models (Dittmar & Bates, 1987)
4. family therapy models (Le Grange, Eisler, Dare, & Russell, 1992; Russell et al., 1987).

When AN is present in adolescents, one of the most common therapeutic approaches is to use the family as a key resource to help confront, change and ultimately move beyond the problem that AN is causing for the adolescent and other members of the family. Given that the focus of the current thesis was on the understanding and evaluation of the effectiveness of family-based treatment (FBT) for adolescent females with AN, family-based therapy will be described in detail here.

Family-based Treatment and AN

Discussion of, and research on, FBTs for AN in adolescents began about 30 years ago. Although results across trials vary (see Couturier, Kimber, & Szatmari, 2013), FBT has been described as the leading evidence-based treatment for adolescent AN (Hay, 2013). FBT for adolescent AN is unique from many other AN treatments, because it integrates theoretical ideas from a number of established family therapies (Lock & Le Grange, 2012). In particular, the seminal work of Minuchin et al. (1975) paved the way for family treatment when one child in the family has been diagnosed
with AN. Minuchin et al. employed structural family therapy, which addresses problems in functioning within a family. In this approach to treatment, the family is helped to change their dysfunctional relationship patterns to promote better communication, resolve conflicts and support appropriate independence for the adolescent with AN. As described below in more detail, the overarching principle of the FBT model is to use the family as a resource in the treatment of adolescent AN. This is viewed by the authors of the FBT treatment manual as the most important theoretical position that "sets this approach apart from other family and individual therapies of AN" (Lock, Le Grange, Agras, & Dare, 2001, p. 2).

AN has long been a focus in the domain of family therapy. The main four family therapy models that have contributed to FBT for AN are the structural, strategic, Milan systemic, and narrative models (Lock et al., 2001). Traditional family therapy models conceptualise the symptom or problem as belonging to the entire family (Nichols & Schwartz, 2006). Minuchin et al. (1975) and Selvini-Palazzoli (1974) both observed similar familial characteristics in families with children diagnosed with AN: "overly close nature of family relationships, the blurring of intergenerational boundaries, and tendencies to avoid overt conflict" (Lock et al., 2001, p. 13).

In structural family therapy (Minuchin et al., 1975), the child with AN is described as physiologically vulnerable in the context of the family, whose transactional patterns include enmeshment, overprotectiveness, rigidity and a pattern of conflict avoidance. The model purports that the child has a crucial role in perpetuating the family's avoidance of conflict, which reinforces AN symptoms. The intent of therapy is to alter family organisation by challenging alliances between parents and children that disrupt parental effectiveness. This is achieved by encouraging more open communication both within the family and with the larger social world. Minuchin et al.
(1975) added a specific practical intervention to the therapy, whereby the therapist observes a family meal in which the parents are encouraged to take control of the child’s eating. This has been incorporated into FBT. The aim of this intervention is to reinforce the parental dyad and encourage the parents to work together around the difficult issue of the child’s food refusal (Lock et al., 2001).

Strategic family therapy employs an agnostic view regarding the aetiology of the AN disorder (Haley, 1973). The core responsibility for AN is placed outside the individual and family—not to suggest an external origin or location of cause, but rather to express a lack of interest in and speculation around the causes or origin of disease, or the factors that produce or predispose the individual towards a certain disorder (Madanes, 1981). In this manner, the AN intervention is not overly focused on uncovering the reasons why the disorder has occurred, but rather refocuses the family on finding solutions and making changes to alleviate the affected child from the grips of the disorder (Lock et al., 2001).

The main departure from the strategic group came via the Milan systemic systems group. This group contended that the therapist needs to maintain a neutral stance in relation to the family and to whether change should occur (Selvini-Palazzoli, 1974). The model takes the view of the family as a homeostatic system in which direct pressure for change is likely to be met with counter pressure to maintain the system in an unchanged balanced state (Boscolo, Cecchin, Hoffman, & Penn, 1987; Selvini-Palazzoli, 1974). Instead of directly intervening, the therapist focuses on questioning the various family members’ beliefs and perceptions regarding relationships and issues (Boscolo et al., 1987). Each family member is then invited to comment and reflect on the answers given by the other family members. The feedback is believed to create changes in the family’s interactions, and subsequently change the problem. Systemic
family therapy takes a non-blaming approach—the actions of all family members are not viewed as negative, but rather the family is seen as operating as well as they can under the circumstances (Boscolo et al., 1987).

White and Epston (1990) fostered a specific approach to narrative family therapy by employing externalisation. Externalising locates problems not within the individual, but as products of culture and history. In essence, a space is created between the person and whatever is troubling them. The therapist is then able to assist the individual to understand how personal beliefs, views or stories shape personal perceptions and, in some cases, impede change and success (Walsh & Keenan, 1997). Once this separation occurs, the individual can begin to perceive the problem in a different way, and commence solving the problem without feeling self-blame and judgement of the self or others. The patient is then encouraged to recreate his or her own narratives to facilitate more adaptive views of the self (White & Epston, 1990).

The FBT model states that parents’ involvement in their children’s therapy is vitally important for the ultimate success of the treatment. It takes the position that the child with AN is not functioning at her or his appropriate developmental level ('regressed'). Normal adolescent behaviour is seen as having been arrested by the presence of AN. Further, the child is not viewed as being in control of his or her own behaviour—instead, AN controls the child. The core tenants of FBT are:

- An agnostic view of AN aetiology—the causes of the illness or factors that produce or predispose an individual to AN (Madanes, 1981) are not considered a focus of treatment. The FBT intervention is not caught up in uncovering the reasons why AN has occurred, but rather refocuses the family on finding solutions to liberate the affected child from the illness.
• Weight restoration and normalising eating take precedence over all other issues, and the parents are temporarily placed in charge of all food and eating-related aspects, with the aim of reducing the hold AN has over their child’s life.

• Hospitalisation is viewed as a temporary solution to reduce the immediate consequences of medical risk, while full recovery from AN occurs in the home with the family’s support.

• Externalisation is employed to separate the client from the anorexia. Through this separation, the family can begin to perceive the AN in a different way, and commence solving it without blame and judgement of the young person for their behaviour.

• Structural change in the family is made to defeat the AN. Specifically, FBT encourages clear boundaries between the parent and sibling subsystems, with the parents having executive control of the family (Minuchin et al., 1975). FBT views the family as resourceful and able to generate solutions to fight the AN; thus, the therapist resists an ‘expert’ stance and instead defers to the parents’ expertise (Lock et al., 2001).

Summary

Family therapy has become an important and widely used treatment approach for adolescents with AN. A significant change arose from the family being seen not as the cause of the problem but rather as a resource that could take an active part in treatment. Parents were then expected to facilitate the recovery of their child from the ED. This shift resulted in major changes in the treatment of ED’s that the field has witnessed in the past few decades and has been supported by growing empirical evidence. The next chapter (Chapter Four) focuses on the empirical evidence for the effectiveness of FBT for AN.
among adolescents, describing two recent meta-analyses that have been published before conducting a systematic search of the research literature for all RCTs of FBT for adolescents and presents a consolidation of what is known to date about the efficacy of FBT.
Chapter Four

Randomised Controlled Trials of Family-based Treatment for Adolescents:
Summary of Meta-analyses and Research Consolidation

The Maudsley model of family-based treatment (FBT) for adolescents with anorexia nervosa (AN) was developed in the 1980s by Christopher Dare and colleagues at the Maudsley Hospital in London, manualised in 2001 (Lock et al., 2001), and later revised in 2012 (Lock & Le Grange, 2012). This FBT approach draws from an integration of multiple family therapy theories and the specifics of this particular intervention underwent several randomised control trials at the Maudsley Hospital (London) before being disseminated. Further investigations of FBT for AN occurred at Stanford University, Lucile Salter Packard Children’s Hospital and other sites (Eisler et al., 1997; Le Grange, Binford, & Loeb, 2005; Wallis, Rhodes, Kohn, & Madden, 2007).

Several studies of the efficacy of FBT for adolescent AN have been published over the years (e.g., Lock et al., 2005; Lock, Le Grange, Agras, Moye et al., 2010) (see Table 4.1). While the results of the studies assessing the efficacy or effectiveness of FBT are promising (results are described below), a significant number of individuals diagnosed with AN do not have a favourable outcome after FBT. Lock and Le Grange (2001) reported that approximately 20% of participants in FBT did not attain 95% of the ideal body weight or begin to menstruate. Other studies (Lock et al., 2005; Lock, Le Grange, Agras, Moye et al., 2010) identified that, at the end of treatment, a substantial portion of participants remained in the clinical range for low weight, continued ED cognitions or both. In the assessment of efficacy of FBT, it is important to consider how varying definitions of remission and recovery may complicate studies of FBT.
### Table 4.1

Studies included in Previous Meta-analyses of Couturier et al. (2013) that Evaluated the Efficacy of Family Therapy Treatment (including FBT) Compared with Individual Treatment among Adolescents with Eating Disorders (e.g. AN, BN or EDNOS) at End of Treatment (EOT) and 6- to 12-month Follow-up (f/up).

<table>
<thead>
<tr>
<th>Study</th>
<th>Outcome Measure</th>
<th>Definition of Remission</th>
<th>Conclusions</th>
<th>Odds Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lock et al., 2010</td>
<td>Eating Disorders Examination (EDE) Weight (IBW)</td>
<td>Full remission weight greater than 95% IBW and scores within 1 SD on the global mean EDE.</td>
<td>21/61 FBT vs. 12/60 AFT in remission EOT. 22/61 FBT vs. 11/60 AFT at 1 year f/up.</td>
</tr>
<tr>
<td>2</td>
<td>Schmidt et al., 2007</td>
<td>Eating Disorders Examination (EDE) Abstinence from binge/purge</td>
<td>No binge episodes or compensatory behaviour for the previous 4 weeks.</td>
<td>4/41 FBT vs. 6/44 CBT in remission EOT. 12/41 FBT vs. 9/44 CBT in remission at 6 months.</td>
</tr>
<tr>
<td>3</td>
<td>Le Grange et al, 2007</td>
<td>Eating Disorder Examination (EDE) Abstinence from binge/purge behaviours</td>
<td>No binge episodes or compensatory behaviour for the previous 4 weeks.</td>
<td>16/41 FBT vs. 7/39 SPT in remission EOT. 12/41 vs. 4/39 at 6-month f/up.</td>
</tr>
</tbody>
</table>
Table 4.1, continued

| Studies that compared family therapy to individual treatment, but inclusion criteria in Couturier et al., 2013 ("inclusive approach") |
|---|---|---|---|
| 4 | Russell et al., 1987 | Morgan-Russell Assessment Schedule | Good/intermediate outcome on Morgan Russell (weight greater than 85%). | 9/10 FBT vs. 2/11 in IT were in remission at end of treatment (EOT). |
| 5 | Robin et al., 1999 | BMI Eating Attitude Test | Weight goal target. | 13/19 in BFST vs. 12/18 in Ego orientated therapy in remission EOT. 15/19 in BFBT vs. 12/18 in remission at 1yr f/up. |
| 6 | Ball & Mitchell., 2004 | Morgan-Russell Assessment Schedule | Good/intermediate outcome on Morgan Russell (weight greater than 85%). | 7/12 BFT vs. 7/13 in individual CBT at EOT and 6-mth f/up. |

*The first three studies met inclusion criteria. The next three studies (#4-6) were analysed along with #1 to #3 in a second meta-analysis. 

**Note.** See text for information on method/design, description of participants, and key findings.
Measuring Remission and Recovery from AN

There is currently no universal benchmark for remission and recovery from AN. The use of a particular diagnostic criteria is the most common measure of whether a patient fulfils or no longer meets the diagnostic criteria and is in remission or has recovered. Symptom-based remission definitions for AN take into account weight, binge/purge behaviours, body-image disturbance and other disordered eating symptoms (Björk, Clinton, Norring, Örebro, & Hälsoakademin, 2011). As discussed earlier, the diagnostic criteria for AN has recently undergone changes, which has implications on how earlier studies may have reported outcomes relating to remission and recovery (e.g., return of menstrual state).

The initial FBT trials (e.g. Russell et al., 1987) used the categorical indices of the Morgan-Russell Outcome Assessment Schedule. In this measure, a good prognosis is based on five scales of eating difficulties, menstrual state, mental state, psychosexual state, and socioeconomic state. A major limitation of this instrument is that individuals can be categorised as achieving a good outcome based on weight restoration and return of menstrual functioning, but also continue to display substantial psychological symptoms of AN. This can be problematic. For example, Pike (1989) wrote, “even for individuals who achieve a complete remission of the core symptoms of the ED, continuing psychological and biological impairment may exist as a result of the devastation of AN” (p. 464). She went on to suggest that, “remission should represent a greater degree of functional improvement compared to initial response” (p. 464).

Others disagree with this notion. Couturier and Lock (2006) argued that, “by setting the bar for recovery at a complete and comprehensive recovery, factors unrelated or not specific to AN may artificially decrease recovery rates and negatively characterise outcome” (p. 550). A transdiagnostic definition of recovery was proposed
by Bardone-Cone et al. (2010) that focused on ED sufferers being indistinguishable from healthy controls on indices reflecting behavioural and psychological aspects of ED. Another view was that the maintenance of remission for a significantly longer period of time is one practical way to define recovery (Couturier and Lock, 2006).

As more RCT’s on FBT were published there was a shift towards a combination of physical (including cut off points for weight recovery) and psychological variables (e.g. Eating Disorder Examination (EDE)) that became a measure of remission (e.g. Lock et al., 2010). Couturier and Lock (2006) determined that maintenance of recovery at 4-year follow-up in a sample of adolescents treated for AN was best predicted by a combination of attaining a post-treatment weight greater than 90% Expected Body Weight (EBW) and an EDE restraint sub-scale within one standard deviation of normal.

While the EDE is widely used in the determination of ED recovery, some argue (Bjork et al., 2011) that a major contributing factor to the variation in estimates of recovery rates may also be due to the lack of consistency in the choice of additional self-report measures. Patient self-report measures, that reflect psychological change; the patient’s feelings, attitudes, and beliefs may shed important light on what their experience of recovery is. The patient perspective in some respects maybe lacking from a full and comprehensive definition of recovery.

**Results of Two Published Studies of FBT RCTs**

Although all of the issues described above present challenges when conducting trials of the efficacy or effectiveness of FBT, there have been multiple trials of FBT for adolescents with AN published to date (e.g., Lock et al., 2010; Schmidt et al., 2007). In addition, two published meta-analyses including FBT studies could be located (Couturier, Kimber, & Szatmari, 2013; Fisher, Hetrick, & Rushford, 2010).
**Fisher et al., 2010.** In the first published meta-analysis (Fisher et al., 2010), 13 RCTs of FBT for AN were included with no restriction that studies be focused on adolescents only. The majority of located studies investigated FBT or variants (e.g. systemic family therapy or behavioural family therapy) compared to other psychological therapies (e.g., cognitive behavioural therapy and educational interventions), with remission as the primary outcome measure. However, two studies with 81 participants (Crisp et al, 1991; Dare et al, 2001) compared family therapy to treatment as usual, indicating that family therapy was more effective than treatment as usual on rates of remission in the short term (RR 3.83 95% CI 1.60 - 9.13). However, in other analyses, there was no significant advantage for family therapy over educational interventions (RR 9.00 95% CI 0.53, 153.79; Hall, 1997) or over other psychological interventions (RR 1.13 95% CI 0.72 to 1.76; N=149; Ball et al, 2004; Dare et al, 2001; Robin 1999 and Russell et al, 1987). All other comparisons of relapse rates, cognitive distortion, weight measures and drop-out rate yielded no significant difference between family therapy and other treatments.

Overall, Fisher et al. (2010) concluded that there were a number of limitations of the studies they located. In particular, they were generally inadequate in the reporting of the methodology and multiple studies had a very small number of participants. Moreover, all trials were described as suffering from at least one possible source of bias, including allocation, blinding, inadequate data and selective reporting. Therefore, the authors concluded that, “there is insufficient evidence to be able to determine whether family therapy offers any advantage over other types of psychological interventions, or whether one type of family therapy is more effective than another” (p. 23). Given the fairly widespread use of family therapy for treating AN, clearly this is an area of future research.
**Couturier et al., 2013.** In the second and more recently published meta-analysis, Couturier et al. (2013) investigated the efficacy of family therapy (including FBT) compared with individual treatment when provided to adolescents with ED (AN, BN, and EDNOS). The outcome measure was remission rate, defined as the absence of DSM-IV-TR criteria, attainment of certain % ideal body weight and abstinence from binge eating and purging. Once multiple publications from the same trials were excluded, six unique RCTs were identified involving adolescents with ED. Yet, only three studies (Le Grange et al, 2007; Lock et al, 2010 and Schmidt et al, 2007) with 286 participants total met the stringent inclusion criteria of allocation concealment and intent-to-treat (ITT) analysis (see Table 4.1). In a second analysis in this study (Couturier et al., 2013), an additional three studies (Russell et al, 1987; Ball and Mitchell, 2004; Robin et al., 1999) that did not meet the stringent inclusion criteria, but did compare FBT to individual treatment, were added to analyse a total of six studies (see Table 4.1).

**Summary of results and studies included in the Couturier et al. (2013) meta-analyses of studies that met inclusion criteria.** The results of the first meta-analysis in Courturier et al. (2013) using stringent criteria for inclusion of family treatment for adolescents with ED revealed that the rate of remission did not differ between family therapy and individual therapy at the end of treatment \( z = 1.62, p = 0.11 \). However, at 6- or 12-month follow-up, FBT was found to be superior to individual treatment \( z = 2.94, p < .003 \).

As can be seen in Table 4.1, Lock et al. (2010) conducted the most recent study included in this first meta-analysis (Couturier et al., 2013). The authors aimed to overcome limitations in previous FBT trials with a larger cohort of 120 adolescents aged 12 to 18 with AN. In this RCT, FBT was compared to adolescent-focused
individual therapy. The individual therapy condition aimed to address core psychopathology associated with AN, such as providing assistance with identifying and tolerating affective states. At the end of treatment, there was no significant difference in full remission rates; however, FBT was superior to individual therapy at the six- and 12-month follow-ups. FBT at the end of treatment was also superior to individual therapy when comparing partial remission and ideal body weight.

Schmidt et al. (2007) also conducted a RCT that met the stringent inclusion criteria of Couturier et al. (2013). Their aim was to compare a form of family intervention with a guided self-help version of CBT for 85 adolescents and young adults (aged 13–20 years) diagnosed with either BN or EDNOS. The family therapy model used in this study was adapted from the FBT-AN model. Participants \((n = 41)\) were offered up to 13 sessions with close others and two individual sessions over a 6-month period. In the CBT arm, participants \((n = 44)\) had 10 weekly sessions, three monthly follow-up sessions, and two optional sessions with a close other with sessions focused on the function of BN in the person’s life and builds motivation to change. Abstinence from binge eating and vomiting was the primary outcome measure, as assessed by interview at end of treatment and again at 12 months. At the end of treatment, the guided self-care group was superior in remission rate \((6/44)\) to those in the family therapy group \((4/41)\), and remission was low in each group. In both groups at the 12-month follow-up there was substantial improvement in the remission rate, with no differences in outcome between treatment conditions \((9/44\ CBT \ vs. \ 12/41\ family\ therapy\ group)\). Compared with family therapy, CBT guided self-care has the slight advantage of offering a more rapid remission.

In the third adolescent family therapy RCT, 80 participants with a diagnosis of BN (aged 14–17 years) were allocated to manualised FBT-BN or individual supportive
psychotherapy (SPT) (Le Grange et al., 2007). FBT-BN was superior at the end of treatment, with 39% of patients achieving remission as defined by abstinence of symptoms for the preceding four weeks, compared with 18% in the SPT group, and at 6-months follow up again FBT achieved an abstinence rate of 30% compared with that of 10% achieved by SPT.

**Summary of results and studies included in the Couturier et al. (2013) meta-analyses of six studies that compared family therapy to individual treatment.**

The results of the second meta-analysis of six studies of family therapy for adolescents with AN reported by Couturier et al. (2013) indicated that FBT was again no different in terms of remission rate against individual therapy at the end of treatment ($z = 1.72, p = .09$; see Table 4.1). Yet, as in the first analysis, the remission rate in FBT was superior to individual treatment at the 6- to 12-month follow-up ($z = 2.96, p < .003$).

In addition to the three studies described in the previous section, one of the first RCTs that compared FBT to individual supportive therapy (Russell et al., 1987) was included in this second meta-analysis. In this study, participants were divided into four subgroups that included:

1. AN patients with age of onset of illness at 16 years or younger, and an illness duration of less than three years
2. AN patients with age of onset of illness at 18 years or younger, and an illness duration of more than three years
3. AN patients with age of onset of illness at 19 years or older
4. Patients with BN.

All participants were initially admitted to a specialist unit to commence weight restoration. Upon discharge, participants were allocated randomly to family therapy or individual supportive therapy. Treatment occurred over a one-year period, with
assessments occurring pre- and post-treatment on the following measures: body weight, menstrual functioning, the Crown-Crisp Experiential Index and ratings on the Morgan-Russell scales. With respect to the general outcomes (Morgan-Russell scales) of the 57 participants with AN, 13 (23%) achieved a good outcome (maintaining within 15% average body weight [ABW], plus a regular menstruation cycle), nine (16%) obtained an intermediate outcome (within 15% ABW, but amenorrhea persisted) and 35 (61%) had a poor outcome (below 15% ABW and amenorrhea persisted). Of the 23 with BN, two (9%) achieved a good outcome (maintaining within 15% ABW, plus no bulimic symptoms), three (13%) obtained an intermediate outcome (within 15% ABW, plus some bulimic symptoms) and 18 (78%) had a poor outcome (below 15% ABW and frequent bulimic symptoms). It should be noted that, in the AN group, even among those with a poor outcome, weight gain was evident, with the mean weight rising from 64 to 72.8% ABW.

In terms of the effects of family therapy and individual supportive therapy at a one-year follow-up, subgroup one showed significant improvement in four of the five clinical dimensions (nutritional status, menstruation, psychosexual adjustment and socioeconomic status), with the exception being mental state improvements. The initial high scores reported by patients—with little room for improvement—explained this outcome. The other subgroups failed to show improvement in any area. The overall results indicated that young patients who had AN for less than three years treated under family therapy had significantly better outcomes than did a similar group treated with individual supportive therapy. It was concluded that family therapy assisted parents to take control of their children’s eating, which contributed to the children’s improvement, and that this technique appeared less appropriate among young adult AN presentations than in adolescents. Russell et al. (1987) suggested that future research could consider
the possible added benefits of family therapy combined with individual supportive therapy for younger patients.

Another study included in the second meta-analysis (Couturier et al., 2013) included 37 participants with AN (aged 11 to 20 years). Participants were randomly assigned to either ego-oriented individual therapy or behavioural systems family therapy (Robin et al., 1999). Ego-oriented therapy is an individual therapy with additional parent sessions, which is informed by psychodynamic theory. Behavioural systems family therapy is modelled on the FBT approach. Both treatments were similar in terms of improvements in eating attitudes, depression and self-reported eating-related family conflict. More than two-thirds (67%) of participants reached target weight and 80% regained menstruation. However, the behavioural systems family therapy was superior to the ego-oriented therapy alone, with higher weight gains and a greater proportion of females who had a return of menses.

The final study evaluated a 12-month, manual based program of CBT compared to Behavioural Family Therapy (BFT) (Ball and Mitchell, 2004). The BFT program was based on a number of behavioural interventions described by Robin and Foster (1989). Twenty-five adolescents and young adults (13 to 23 years) with AN, living with their families, were recruited into the study with both treatment groups receiving 21–25 sessions of therapy. Outcome measures included nutritional status, eating behaviours, mood, self-esteem, and family communication. Sixty percent of the total sample and 72% of treatment completers had “good” outcome (defined as maintaining weight within 10% of average body weight and regular menstrual cycles) at post-treatment and at six-month follow-up. No significant differences between treatment groups were found and the majority of patients did not reach symptomatic recovery.
Summary of studies located by Couturier et al. (2013), but excluded from meta-analyses. Several studies were excluded from the analyses reported in Couturier et al. (2013) (see Table 4.2), as they were either long-term follow-up studies of other published results included in the meta-analysis or examined different aspects of the original treatment. One of these excluded studies, conducted by Eisler et al. (1997), was a five-year follow-up with those who participated in Russell et al.’s (1987) study. Based on weight maintenance and the categories defined by the Morgan-Russell scale, the enduring benefits and superiority of family therapy over individual supportive therapy were maintained.

In another of the excluded studies, the effect of family criticism on adolescents diagnosed with AN was assessed by comparing two forms of FBT; standard FBT (conjoint family therapy) with a modified version in which the patients and parents were separated (separated family therapy) (Eisler et al., 2000). Forty adolescents ($M = 15.5$ years) with an average AN illness duration of 12.9 months ($SD = 9.4$) and mean body weight of 74.3% ($SD = 9.8$) and their families participated. Results indicated that in both standard FBT groups (conjoint family therapy) and separated family therapy, nearly two-thirds of adolescents had a weight that was within the normal range at the end of treatment. On individual measures, improvements were greater in the conjoint family therapy condition than in the separated family therapy condition. This applied to ED symptoms, mood, obsessionality and psychosexual adjustment. In line with Le Grange et al. (1992), this study also confirmed the efficacy of family therapy in the treatment of adolescent AN. Despite these studies highlighting the positive outcomes from family therapy, Eisler et al. (2000) argued that it was difficult to draw conclusions about the role of individual therapy in treatment, whether it is used solely or in combination with family therapy.
### Table 4.2
Summary of Studies excluded from Previous Meta-analyses (Couturier et al., 2013) that Evaluated the Efficacy of Family Therapy Treatment Compared with Individual Treatment among Adolescents with Eating Disorders (AN or BN).

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants</th>
<th>Design</th>
<th>Conclusions</th>
<th>Reason for Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eisler et al., 1997</td>
<td>$N = 80$, 14-55 years, AN or BN</td>
<td>Family Therapy (FT) compared to Individual Supportive Therapy (IST)</td>
<td>FT superior with early onset and shorter illness duration, IST better for late onset.</td>
</tr>
<tr>
<td>2</td>
<td>Eisler et al., 2000</td>
<td>$N = 40$, 11-17 years, AN</td>
<td>Conjoint Family Therapy (CFT) vs. Separated Family Therapy (SFT).</td>
<td>Similar outcomes at the end of treatment; CFT greater psychological improvement; SFT had greater symptom improvement.</td>
</tr>
<tr>
<td>3</td>
<td>Geist et al., 2000</td>
<td>$N = 25$, 12-17 years, AN</td>
<td>Family Therapy vs. family group psychoeducation.</td>
<td>No differences between groups in weight restoration or family functioning.</td>
</tr>
<tr>
<td>4</td>
<td>Lock et al., 2005</td>
<td>$N = 86$, 12-18 years, AN</td>
<td>Short-term (10 sessions over 6mths) vs. long-term FBT (20 sessions over 12 months)</td>
<td>No differences between treatment length and outcomes.</td>
</tr>
<tr>
<td>5</td>
<td>Lock et al., 2006</td>
<td>$N = 71$, 12-18 years, AN</td>
<td>Short-term (10 sessions over 6mths) vs. long-term FBT (20 sessions over 12 months).</td>
<td>Short-term FBT as effective as long-term.</td>
</tr>
<tr>
<td>6</td>
<td>Lock et al., 2006</td>
<td>$N = 86$, 11-18 years, AN</td>
<td>Short-term (10 sessions over 6mths) vs. long-term FBT (20 sessions over 12 months).</td>
<td>Co-morbid diagnosis and being randomised to longer treatment predicted higher drop out rate.</td>
</tr>
</tbody>
</table>

AN = Anorexia nervosa. BN = Bulimia nervosa. FBT = Family-based Therapy
In the third excluded study, Geist et al. (2000) randomised 25 female adolescents with AN to either family therapy or family group psychoeducation. Outcome measures included medical (body weight) and psychosocial (specific and nonspecific ED psychopathology) variables at baseline and after 4 months of treatments every 2 weeks. Both groups achieved weight restoration following the 4-month period of treatment. Both FT and FGP subjects experienced significant weight restoration, increasing from 77.7% to 89.1% of Ideal Body Weight (IBW) and from 77.2% to 90.4% of IBW respectively ($F = 50.2$, df = 23, $p < .001$), but no significant change was reported in psychological functioning by either adolescents or parents.

In three other RCT’s excluded from previous meta-analyses, the optimal length of treatment when using FBT was investigated—specifically, whether a short course (six-month) compared to a longer course (one-year) of treatment yielded similar positive results (Lock, Agras, Bryson, & Kraemer, 2005; Lock, Couturier, & Agras, 2006; Lock, Couturier, Bryson & Agras, 2006) were also exclude. Eighty-six adolescents (aged between 12 and 18; 77 females and nine males) with AN and their families were recruited. Families who received only 10 sessions of FBT over six months had equally positive results to those who received 20 sessions in a year. However, better results were achieved with longer treatment when the adolescents had more persistent and severe eating-related obsessional thinking and when the parents were separated. Targeting more entrenched and problematic thinking patterns related to AN have been shown by others to require more intensive intervention (Godart, Flament, Lecrubier, & Jeammet, 2000; Steinhausen, 2002; Wonderlich, Lilenfeld, Riso, Engel, & Mitchell, 2005). In addition, given that the emphasis in FBT is on unifying parents to take charge to extinguish AN, one might conclude that single parent or separated families may require additional input and support to achieve the same outcomes as intact families.
The five year follow up of this study (Lock et al., 2006) and Lock et al. (2006), which assessed the long-term outcomes and predictors of drop out from FBT, were also excluded from previous meta-analyses (Couturier et al., 2013).

The Current Study

The aim of this study was to update the Couturier et al. (2013) meta-analysis. More specifically, the aim was to integrate the findings of more recent RCTs with the findings from the most recent meta-analysis of Couturier et al. (2013).

Method

Location of Studies

Three methods were employed to search for any additional RCTs of FBT for adolescents with AN, since the published Couturier et al (2013) meta-analysis. First, a literature search using the database MEDLINE was conducted. Search terms were family therapy and FBT, which were limited to anorexia nervosa and adolescence. Second, the Cochrane database of controlled trials (www.cochrane.org) and the Meta-Register of Controlled Trials (www.controlled-trials.com/mrct) were also used to locate articles using the same search terms. Finally, the reference lists of all located RCTs were scanned for additional published studies.

Results

Located Studies

Three RCTs were located that had been published since the meta-analysis of Couturier et al. (2013) (see Table 4.3). All three studies compared FBT to family therapy variants or tested different strategies for enhancing weight gain. Agras et al. (2014) conducted the first study. In this study, FBT was compared to systemic family therapy (SyFT). In a second study, Madden et al. (2015) evaluated two pre-treatment conditions (brief vs. extended hospitalisation) prior to both groups receiving FBT.
Finally, in the third study, Le Grange et al. (2016) compared FBT vs. parent-focused treatment (PFT). In total, these studies included 347 adolescents (see Table 4.2). The mean age of participants ranged from 14.7 to 15.5 years. One trial included females only, whereas the other two also included a small number of males (total $n$ of males = 22). None of the three studies (e.g. Agras et al., 2014; Le Grange et al., 2016) would have met the inclusion criteria of Couturier et al. (2013).

**Summary of Each Study Published since Couturier et al. (2013)**

In the first located RCT of FBT for adolescent AN (Agras et al., 2014), 164 adolescents (male and female aged 12 to 18 years) with a diagnosis of AN were assigned to 1) FBT that was primary focused on facilitating weight gain or 2) systemic family therapy that addressed general family processes. Given each treatment arm utilised a variant of family therapy and no individual treatment, this study would not have met the inclusion criteria for the Couturier et al. (2013) meta-analysis. Results indicated, that FBT resulted in faster weight gain early in treatment and a higher remission rate by the end of treatment and at 12-month follow-up, when compared to those in the systematic family therapy condition. At the end of treatment, the remission rate in FBT was 25/78, whereas the remission rate in systematic family therapy was 20/80. At the 12-month follow-up, the remissions rates were 32/78 and 31/80, respectively. The cost of FBT was also significantly lower (FBT: USA$8,963; systematic family therapy: USA$18,005). However, there was no significant difference between the two approaches in ED symptoms or comorbid psychiatric disorders at the end of treatment or at follow-up, with the authors suggesting that adolescents with more severe obsessive-compulsive symptoms may receive more benefits from systemic family therapy.
Table 4.3

New Studies Published after the Publication of Couturier et al. (2013)

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants</th>
<th>Design</th>
<th>Conclusions</th>
<th>Reason for Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agras et al., 2014</td>
<td>164, 12-18 years, AN</td>
<td>FBT vs. Systemic Family Therapy.</td>
<td>No significant differences between treatment groups at the end of treatment. FBT had significantly faster weight gain early in treatment, significantly fewer days in the hospital, and lower treatment costs per patient in remission at the end of treatment.</td>
</tr>
<tr>
<td>2</td>
<td>Madden et al., 2015</td>
<td>82, 12 – 18 years, AN</td>
<td>Brief hospitalisation for medical stabilisation compared to hospitalisation for weight restoration, then 20 FBT sessions.</td>
<td>Early weight gain (1.8kg) has potential to distinguish better outcomes in FBT.</td>
</tr>
<tr>
<td>3</td>
<td>Le Grange et al., 2016</td>
<td>107, 12 – 18 years, AN</td>
<td>Compared FBT and parent-focused treatment.</td>
<td>Parent focused treatment was more efficacious than FBT in remission. At follow up there were no differences in remission rates between parents focused treatment and FBT.</td>
</tr>
</tbody>
</table>

AN = Anorexia nervosa. FBT = Family-based Therapy
The most recent RCT of FBT would also not have met the inclusion criteria of Couturier et al. (2013) (Le Grange et al., 2016). In this study, there was no comparison of individual treatment to FBT. Instead, 107 adolescents aged 12 to 18 years were allocated to FBT or parent-focused treatment (PFT). Both FBT and PFT comprised 18 outpatient sessions conducted over six months. In PFT, the therapist met with the parents only, while a nurse monitored the patient. The remission rate was higher in PFT (43%) than FBT (22%) at the end of treatment, yet there was no difference in remission rate at the 6-month follow-up (PFT 39% v. FBT 22%) or at the 12-month follow-up (PFT 37% v. FBT 29%). Therefore, PFT was initially more efficacious than FBT in achieving remission among adolescents with AN. The researchers suggested that clinicians without family therapy training may prefer PFT because they do not have the entire family during sessions, which may allow parents and the therapist to more actively engage in therapeutic work, and it does not include a family meal session, which some therapists view as a significant challenge. Therefore, the researchers concluded that innovative treatments are needed, particularly those that are adaptations of FBT.

The final study located (Madden et al., 2015) would also not have met the inclusion criteria of Couturier et al. (2013) meta-analysis. In this study, there was no comparison of individual treatment to FBT, rather 82 adolescents with AN all received 20 FBT sessions but were randomly assigned to either receive 1) a brief hospitalisation for medical stabilisation or 2) an extended hospital admission to achieve weight restoration to 90% of expected body weight (EBW) prior to FBT. Weight gain greater than 1.8 kg at FBT session four predicted a greater %EBW (99.18, SD = 56.93 v. 92.79, SD = 57.74, p < .05), and a higher remission at the end of FBT (46% v. 11%, p < .05) and at the 12-month follow-up (64% v. 36%, p = .05). The researchers concluded that
adolescents who struggle with early weight gain may need more intensive intervention to achieve remission. Further, FBT was reported to reduce hospital readmission rates (Lock et al., 2008; Wallis et al., 2007).

**Discussion**

When the results of the Couturier et al. (2013) meta-analyses are considered in conjunction with the three latest FBT trials, the conclusions of Couturier et al. (2013) still hold and there is insufficient evidence to suggest that FBT (and family therapy variants) is superior to other psychological therapies when assessed directly post-treatment. That said, there remains evidence that FBT is superior to individual therapy at 6-12 month follow up. Couturier et al. (2013) proposed that young people within the FBT group probably have continued support from their parents after treatment had ended, with parents acting as proxy therapist. They argued that this continued support likely assists further with recovery more than when individual therapy is the only intervention. Given that there was no difference in FBT and individual therapy directly post-treatment, but that FBT is superior to individual treatment when follow-up is conducted months after the end of treatment, this does suggest that FBT combined with individual treatment may be a direction forward to possibly elevate the remission rate and increase maintenance of treatment outcome. Conducting a pilot case series and a feasibility study of such a treatment, which augmented FBT with CBT focused on perfectionism, were the aims of the present thesis. Thus, in the next chapter (Chapter Five), FBT and individual treatment approaches are described in more detail and this is followed by two chapters (Chapter Six and Seven) to provide background on the particular approach taken for individual treatment, placing the focus on perfectionism. Chapter Eight (Hurst & Zimmer-Gembeck, 2015) and Chapter Nine (Hurst & Zimmer-Gembeck, under review) then provide the results of Studies 2 and 3 of this thesis.
References

References are provided at the end of the thesis.
Chapter Five

FBT and Individual Treatment

Anorexia Nervosa (AN) is an illness that can be overcome. Yet, the course of AN is often marked by periods of relapse, with low remission and recovery rates (Wentz, Gillberg, Anckarsa, Gillberg, & Rastam, 2009). Hence, investigators continue to focus on modifying interventions to improve patient outcomes. Even when AN treatment results in positive outcomes, it is believed that the majority of patients are still left with residual symptoms of obsessional ruminating and worry, as well as intrusive cognitive distortions that maintain the risk of relapse or lead to a protracted illness duration (Strober, 2005). Such outcomes have rarely been measured in RCTs of the efficacy of treatment for AN in adolescents.

A handful of studies of the efficacy of FBT have identified improvements in some of the psychological symptoms that underlie anorexia nervosa during adolescence (see last chapter). Specifically, the subgroups presenting with a higher degree of obsessional thoughts and behaviours often demonstrate the smallest improvements in ED symptoms (Lock et al., 2005). Lock et al. (2005) theorised that this may contribute to future relapse, and suggested that clinicians consider other treatments (such as individual treatment) to augment family therapy. Dare (1985) also argued that the reason FBT fails for some families may lay in illness factors, rather than dysfunction within these families. Therefore, it seems that there is a need for researchers to explore how FBT can be improved—namely, to differentiate the usefulness of different treatment approaches to address the illness factors that affect outcomes and determine ways of assessing these.

A useful direction to improve AN treatment and remission would be to augment FBT by focusing on some of the critical individual beliefs that have been found to
sustain and perhaps even instigate AN (Fairburn et al., 2003). One such model originally developed by Garner and Bemis (1982) and later extended by Vitousek (1996) argued that anorexia nervosa symptoms:

“are maintained by a characteristic set of overvalued ideas about the personal implications of body shape and weight. These attitudes have their origins in the interaction of stable individual characteristics (such as perfectionism, asceticism, and difficulties in affect regulation) with sociocultural ideals for female appearance. Once formed, the beliefs influence the individuals who hold them to engage in stereotypic eating and elimination behaviours, to be responsive to eccentric reinforcement contingencies, to process information in accordance with predictable cognitive biases, and, eventually, to be affected by physiological sequelae that also serve to sustain disordered beliefs and behaviours”. (p. 384)

Despite the important knowledge gleaned from past FBT research, questions remain about how cognitive distortions continue to be maintained after treatment. Learning more about these cognitive risk factors will help in determining ‘high risk groups for targeted interventions, designing prevention program content, and informing public policy’ (Striegel-Moore & Bulik, 2007, p. 181).

Therefore, it is unsurprising that researchers and specialists in the AN field are highly motivated to gain knowledge about the residual and causal factors that contribute to unsuccessful treatment. One candidate that deserves more focus in augmented FBT treatment is perfectionism. Thus, the next chapter provides background on perfectionism and its association with ED.
Chapter Six
Perfectionism and Treatment

Although FBT has been generally identified as an efficacious treatment for adolescent AN, at least in the longer term (e.g., 6-month or 12-month post intervention), a large portion of sufferers have lingering symptoms at the end of treatment, such as obsessional thoughts about weight and shape, and distorted views of their own weight and shape (Lock, Couturier, Bryson, & Agras, 2006). Thus, it is important to address these obsessions and distorted self-views (cognitive variables) in treatment, with the aim of improving treatment outcomes. Perfectionism is likely to be one variable that is particularly relevant to address during AN treatment for adolescents.

One clinical review summarised the evidence regarding perfectionism, illustrating that perfectionism is elevated in many diagnoses and arguing that it is a transdiagnostic process (Egan, Wade, & Shafran, 2011). Egan et al. (2011) described the cognitive behavioural model of clinical perfectionism (Shafran, Fairburn, & Cooper, 2002; Shafran, Egan, & Wade, 2010) as involving a range of factors including "the role that performance related behaviour, including performance checking (e.g., constantly comparing performance to others), avoidance, procrastination, and counterproductive behaviours (e.g., being over-thorough, checking) has in maintaining the cycle of clinical perfectionism" (p. 203). Egan et al. (2011) reached two conclusions. First, high levels of perfectionism will impede treatment across multiple psychopathologies. Second, perfectionism is a risk factor or maintaining mechanism across multiple psychopathologies. Viewing perfectionism as a transdiagnostic process is thought to have implications for the prevention and treatment of various disorders, such as ED. Given this, alongside the evidence that perfectionism is heightened among AN sufferers (Farstad, McGeown, & von Ranson, 2016; Rodriguez Cano, Beato Fernandez, Mata
Saenz, Rojo Moreno, & Vaz Leal, 2016), augmenting an efficacious therapy for adolescent AN, such as FBT, seems to be an important direction for treatment research.

**Perfectionism and Perfectionistic Thinking Defined**

Perfectionism has been defined in many different ways, with early research defining the construct as unidimensional and inherently maladaptive and dysfunctional (Burns, 1980). Perfectionistic individuals were described as compulsively and unremittingly aspiring towards unattainably high goals and measuring their own worth entirely in terms of accomplishing these goals (Burns, 1980). Yet there are some inconsistencies in the literature in defining perfectionism, and this early definition is limited because it does not recognise that perfectionism can have an important role in adaptive functioning and may only be maladaptive at some threshold or in some circumstances.

Hamachek (1978) proposed that a distinction exists between normal (adaptive) and neurotic (maladaptive) perfectionism. The adaptive aspect of perfectionism allows for the setting of high goals, together with the ability to re-evaluate those standards when needed. Generally, individuals experience feelings of satisfaction when their goals are achieved—they take pleasure in their successes, but also allow themselves the flexibility to make and accept minor mistakes. Adaptive perfectionists are often characterised by high personal standards that relate positively to variables such as active coping, high self-esteem, achievement and conscientiousness (Hamachek, 1978). In this manner, perfectionistic thinking patterns and behaviour have been described as positive factors in adjustment or achievement.

Conversely, perfectionism has also been found to be maladaptive. In particular, maladaptive perfectionists have been found to be rigid in the goals they set and lacking flexibility by showing little capacity to accommodate to current conditions when
needed. For example, they can show an inability to modify or adjust goals when they are impossible, harmful, interfere with others’ goals or wellbeing, or interfere with their own future positive development in other domains. They demand and obsess about a high level of performance in many areas, which can be excessive, rigid and often impossible to achieve (Hamachek, 1978). This rigidity and high personal standards can be particularly insidious because these individuals can also be excessively concerned about making mistakes and have high levels of self-doubt (Frost, Marten, Lahart, & Rosenblate, 1990). These individuals seem unable to flexibly adjust their goals, despite social or other information, and are unable to feel satisfaction because, in their eyes, they never seem to do things well enough to warrant that feeling of satisfaction.

When comparing levels of adaptive and maladaptive perfectionism in a clinical sample of women with various types of ED and a group of young female undergraduate students, Ashby, Kottman, and Schoen (1998) found no statistically significant differences between the groups in levels of adaptive perfectionism; however, the clinical group had a significantly higher level of maladaptive perfectionism than the comparison group of typical undergraduate women. This result suggests that individuals with an ED have more maladaptive perfectionism and rigid thinking than the average university female. Such maladaptive perfectionism is thought to be driven by an overly critical assessment of performance, excessive need for approval and extreme concern about making mistakes. This differs from adaptive perfectionist thinking, which is marked by achievement goals, whereas maladaptive perfectionists may pursue tasks because of fear of failure.

Highly perfectionistic individuals often identify many benefits of this trait and can subsequently be ambivalent about change. An interesting qualitative study was undertaken by Egan et al. (2013) that examined motivation to change, reactions to
failure, and re-setting standards following failure. The participants were an athletic
group who were low on negative perfectionism ($N = 10; 60\% \text{ females;} \ M = 38.40, \ SD = 10.69$) and a clinical group ($N = 10; 80\% \text{ females;} \ M = 41.70, \ SD = 8.56$). The results
supported the hypothesis that the participants’ willingness to change their striving for
unrelenting high standards was marred by the perceived advantages of their
perfectionism, and the participants expressed a general unwillingness to alter this. Both
groups cited that their perfectionism helped their achievements, and they subsequently
felt more valued by others. The clinical group identified that they experienced
‘catastrophic cognitions’ (Egan et al., 2013, p. 576) when considering relinquishing
their perfectionism and ‘viewed their self as a failure if they did not meet a standard,
and in some cases would reset standards higher following failure’ (Egan et al., 2013, p.
576). The researchers concluded that interventions for perfectionism should focus
dually on challenging the perceived disastrous predictions around abandoning
perfectionism and adjusting the negative self-evaluation that accompany the
individuals’ goals.

Drawing from reinforcement theory (Skinner, 1968), Slade and Owens (1998)
presented the notion that different effects of perfectionism occur, which they termed the
dual process model of perfectionism. It was thought that the same behaviour might be
associated with opposite emotional states, based on past positive or negative
reinforcement. Adaptive perfectionism is underlined by positive reinforcement and need
for success. Conversely, maladaptive perfectionism involves behaviours and thoughts
that are geared towards achieving high level goals in order to prevent failure and
negative consequences (Slade and Owens 1998).

It seems that the difference between maladaptive and adaptive (or negative and
positive) perfectionism lies in whether individuals are able to set realistic goals, modify
goals when necessary, and accept failure if needed, without feeling they are worthless or becoming helpless, rather than flexibly adapting when failure occurs (Frost et al., 1990). Overall, the neurotic or maladaptive aspect of perfectionism may be driven by the fear of failure, rather than the desire to achieve, and may lead to negative feelings about oneself due to the inability to achieve often very high goals (Pacht, 1984).

Based on this, two dimensions of perfectionism have emerged in the literature: perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006). Perfectionistic strivings are associated with the positive aspects of perfectionism and encompass high personal standards of performance and self-oriented striving for perfection. Perfectionistic concerns are associated with negative aspects and capture concern over mistakes, fear of negative evaluation by others, feelings of discrepancy between one’s expectations and performance, and negative reactions to imperfection.

Some researchers (e.g., Frost et al., 1990) have described multidimensional perfectionism as an individual’s high standards that are accompanied by tendencies to be overly concerned with mistakes and uncertainty regarding actions and beliefs. Further, individuals who are high in perfectionism can place considerable value on their parents’ expectations and evaluations and prioritise order and organisation. To assess the six dimensions of perfectionism, Frost et al. (1990) designed the Frost Multidimensional Perfectionism Scale (FMPS). The widespread use of FMPS has lead to the acceptance of perfectionism as a multidimensional construct.

Shafran et al (2002) argued however that the construct of perfectionism needed to be defined in a way that captured its core characteristics, rather than a group of constructs. During the development of the transdiagnostic model for ED (Fairburn et al, 2013), Shafran et al. (2002) proposed an alternative clinical perfectionism definition, describing it as, “the overdependence of self-evaluation on the determined pursuit of
personally demanding, self-imposed, standards in at least one highly salient domain, despite adverse consequences” (p. 778). Therefore, individual with very high perfectionism are expected to have a scheme for evaluating themselves that is dysfunctional in two ways. In relation to AN and BN, it was thought that these do not simply co-occur with clinical perfectionism, but are in many cases the expression of perfectionism in the domain of eating, shape or weight and their control.

Although these conceptual views of perfectionism and the difference between adaptive and maladaptive components has been useful for both research and treatment, the operational definition for perfectionism that will be used in the studies proposed here incorporated the three dimensions of perfectionism defined by Flett and Hewitt (2002). This dimensional measure of perfectionism is important because it focuses on self-views and beliefs about others’ standards, which may be particularly important during adolescence, when others’ views can be quite salient for the developing self-concept and identity (Deković & Meeus, 1997).

The three dimensions of perfectionism are self-oriented, other-oriented and socially-prescribed perfectionism. First, self-oriented perfectionism (SOP) includes setting high standards directed at the self and harshly evaluating the achievement of these standards through self-criticism and self-punishment. SOP is associated with a motivational component of striving to attain perfection in addition to striving to evade failure. Second, other-oriented perfectionism (OOP) is an interpersonal dimension of an individualistic pattern of thinking and behaviour that focuses on expectations and beliefs about the capabilities of others. Individuals high in OOP hold the belief that others should be perfect, set unrealistic standards for others, and can be highly critical of others because of these standards (Flett & Hewitt, 2002). Often, these individuals tend to have little trust for others, direct blame towards others, and experience feelings
of hostility towards others (Hewitt et al., 2015). Third, the final dimension of multidimensional perfectionism is socially-prescribed perfectionism (SPP). SPP is also interpersonal in orientation and incorporates the perception that significant others impose unrealistic standards on the individual, forcing perfection. These individuals attempt to avoid the disapproval of others and have a fear of negative evaluation.

**Associations of Perfectionism with AN among Adolescents**

The majority of studies on perfectionism and AN have focused on the adult population (Goldstein, Peters, Thornton, & Touyz, 2014; Lloyd et al., 2014), while only a few have specifically studied adolescents (Castro et al., 2004; Wade, Wilksch, Paxton, Byrne, & Austin, 2015). This is unfortunate because adolescence is considered a crucial period for the development of both perfectionism (Castro et al., 2004) and ED-related psychopathology (Stice, 2002).

Although there is much more work to be done to understand perfectionism among adolescents, high perfectionism in those with an ED appears unique in comparison to other psychological disorders, as all aspects of perfectionism and those on multidimensional scales (e.g. FMPS and HMPS) have been found to be related to ED pathology (e.g., Fairburn et al., 1999; Fairburn, Welch, Doll, Davies, & O’Connor, 1997), unlike other disorders where the association is not as consistent. Retrospective case control studies have reported significantly higher rates of childhood perfectionism in both individuals with BN and AN, compared to healthy controls (Fairburn et al., 1999; Fairburn, Welch, Doll, Davies, & O’Connor, 1997). Cockell et al. (2002) found similar results when examining perfectionism among adults with AN (n = 21), a nonclinical control group (n = 21) and a psychiatric control group (major depression, bipolar and dysthymia) (n = 17) using the Multidimensional Perfectionism Scale
The group with AN scored significantly higher on both SOP and SPP dimensions, when compared to the normal and psychiatric control groups.

One study has provided some further initial evidence of the role of perfectionism in adolescent AN. Castro et al. (2004) examined dimensions of perfectionism in adolescents with AN ($n = 71$) compared with an adolescent control group ($n = 113$) using the Child and Adolescent Perfectionism Scale, Perfectionistic Self-presentation Scale and Eating Attitudes Test. The results showed that 40% of individuals with AN exhibited elevated scores on perfectionism. Of interest, the individuals with AN had significantly higher mean scores on SOP and consistently higher scores on the Perfectionistic Self-presentation Scale than did the adolescents from the general population.

Boone, Soenens, Braet, and Goossens (2010) were interested in the relevance of identifying subtypes of perfectionism—namely, personal standards perfectionism (setting of high standards) and evaluative concerns perfectionism (engaging in negative self-evaluation, including concerns over mistakes and doubts about actions)—for ED symptoms in a nonclinical sample of early to mid-adolescents ($N = 656; M$ age $= 13.9$ years). A combination of high personal standards perfectionism and evaluative concerns perfectionism—rather than the presence of either in isolation—was most strongly related to ED symptoms.

In a longitudinal study of 926 young adolescent girls (mean age of 13 years), Wade et al. (2015) examined how perfectionism (both high personal standards and self-critical evaluative concerns) and ineffectiveness were associated with heightened ED risk. They hypothesised that ineffectiveness would mediate the relationship between both types of perfectionism and ED risk. The results suggested that high levels of concern over mistakes were associated with higher levels of ineffectiveness, which was
also associated with increased risk of EDs over time. These results supported previous theories in which evaluative concerns perfectionism influences disordered eating because of its association with self-criticism.

In a recent longitudinal study, body dissatisfaction in a sample of young adolescent girls was found to moderate the effect of perfectionism on changes in the importance of weight and shape (Boone, Soenens, & Luyten, 2014). Specifically, the results indicated that both concern over mistakes and personal standards within perfectionism interacted with higher levels of body dissatisfaction to increase the importance of shape and weight over time.

Previous studies have also revealed that a prominent concern among individuals diagnosed with AN is a necessity to present an image of perfection to others, while attempting to avoid revealing perceived imperfections in the self. It may be that SOP drives attempts to achieve control over one’s eating, shape and weight, and may fuel stringent self-evaluation, as well as the ensuing perception that one is never measuring up to one’s high standards and goals (Bers & Quinlan, 1992).

**CBT for Perfectionism and AN**

Given that perfectionism is viewed as a vulnerability factor for multiple psychopathologies, including EDs, more focus on reducing perfectionism in treatment seems warranted. Moreover, studies should also examine perfectionism as a treatment outcome and investigate how perfectionism change is related to symptom improvement in AN (and other clinical conditions).

**CBT to reduce perfectionism.** A small number of studies have examined CBT for perfectionism; however, the majority of these have been with adult populations (Fairburn et al., 2003) and fewer still have assessed AN and perfectionism (Lloyd et al., 2014; Vall and Wade, 2016). Riley, Lee, Cooper, Fairburn, and Shafran (2007)
conducted an RCT of CBT for clinical perfectionism. Twenty participants (18 female) met the inclusion criteria for clinical perfectionism and, of these, 50% also met the criteria for an anxiety disorder or major depressive episode. The participants were randomly assigned to either immediate treatment or waitlist. The 10-week treatment was manualised, and consisted of four elements originally developed by Fairburn et al. (2003):

1. identifying perfectionism as a problem and establishing maintaining mechanisms
2. conducting behavioural experiments to learn more about the nature of their perfectionism, and alternative ways of living
3. psychoeducation and cognitive restructuring to modify personal standards and cognitive biases (such as selective attention to perceived failure)
4. broadening scheme for self-evaluation by adopting alternative cognitions and behaviours.

The results indicated that brief CBT was effective in reducing clinical perfectionism, and was superior to an eight-week waitlist condition on measures of clinical perfectionism. Reductions in clinical perfectionism were maintained at eight- and 16-week follow-ups. Further, immediately following treatment, the number of participants who previously met the criteria for an anxiety disorder or major depressive episode had halved (25%). Although this study used a small sample size, it provided preliminary data that supported CBT as an effective intervention for perfectionism that appeared to affect anxiety and depressive symptomology.

In the sixth study, Egan et al. (2014) found that face-to-face and pure online self-help formats of CBT for perfectionism were effective in reducing perfectionism in adults who experienced difficulties with perfectionism ($n = 241$). Of interest was that
the face-to-face group also reported significant reductions in depression, anxiety, and stress, and a significant pre-post increase in self-esteem, all of which were maintained at the 6-month follow-up.

**Focusing on perfectionism in ED treatment.** Four studies have considered perfectionism during treatment for ED (Goldstein et al., 2014; Lloyd et al., 2014; Shafran, Lee, & Fairburn, 2004; Steele & Wade, 2008). The first study was a case report of a 26-year-old woman with binge ED and elevated perfectionism. Perfectionism was hypothesised to be contributing to the maintenance of her ED and, if this was reduced, her ED psychopathology was expected to improve (Shafran et al., 2004). The intervention:

- focused on four components: 1) identifying clinical perfection as a problem; 2) broadening the patient’s scheme for self-evaluation; 3) using behavioural experiments to test competing hypotheses; 4) using cognitive-behavioural methods to address personal standards, self-criticism and cognitive biases that maintain clinical perfectionism. (Shafran et al., 2004, p. 354)

At the end of treatment, both the patient’s perfectionism and binge ED symptoms had significantly reduced.

In a second study, 42 subjects with BN or EDs not otherwise specified received eight sessions of guided self-help during a six-week period across three conditions: CBT for perfectionism, CBT for BN, or a placebo (Steele & Wade, 2008). The results indicated that directly targeting perfectionism resulted in a reduction in bulimic symptoms, anxiety and depression, without specifically needing to address these symptoms directly during therapy.

In a third study, a group-based CBT intervention (six sessions) targeted perfectionism in adults (n = 21, aged 18 to 43 years) with AN in an inpatient setting
The aim of the intervention was to encourage patients to replace excessively high standards with more appropriate and manageable standards through the use of ‘Perfectionism in Perspective’ modules (Fursland, Raykos, & Steele, 2009). The results indicated a significant reduction in perfectionism from pre- to post-intervention of a medium effect size ($d = 0.54$), with changes independent of changes in BMI. The group setting was identified as being beneficial for increased opportunities for shared learning and interpersonal growth.

Goldstein et al. (2014) directly targeted perfectionism and ED pathology in 61 adult participants attending a day hospital program. The patients were randomly assigned to treatment as usual (TAU) or TAU plus seven CBT sessions targeting perfectionism. The results did not support the notion that specifically targeting perfectionism enhances outcomes in terms of reducing the severity of ED symptoms or perfectionism. However, the researchers suggested that the treatment dose may have been insufficient to shift deeply embedded standards, and that future research should compare a more neutral treatment than TAU, which encompasses aspects of CBT that may have masked the benefit of the specific targeted intervention.

In a pilot study of adolescents ($n = 40$; aged 14-17 years) who received specialist inpatient treatment for an ED, Vall and Wade (2016) investigated predictors, moderators, and mediators of outcome and readmission. They concluded that the role of perfectionism was important in predicting several outcomes, which included weight, eating pathology, quality of life, and readmission. Specifically, they stated that “perfectionism may be harmful if left unchecked” and “one potentially useful approach would be to target perfectionism in an effort to neutralise its harmful side effects in the maintenance of ongoing psychopathology while redirecting the desire to achieve high
standards away from AN and towards achievable standards in other life domains that have been sidelined by illness” (p. 7).

CBT-E. Another set of studies has focused on treatment referred to as CBT-E, which includes a focus on perfectionism. The efficacy of CBT-E has primarily been examined within research with adults diagnosed with an ED (e.g. Byrne, Fursland, Allen & Watson, 2011; Fairburn et al, 2009). However, some trials have included adolescents. Dalle Grave, Calugi, Doll, and Fairburn (2013) evaluated the effects of CBT-E with adolescents (n = 49; 13 - 17 years) diagnosed with AN. The aim was to determine whether it might be a viable alternative to FBT. Results indicated that approximately 67% of adolescents completed treatment without the need for additional input and most of these showed substantial improvements in weight and ED psychopathology. These improvements were maintained at follow-up. The remaining adolescents (one third) were classed as non-responders, as they either required additional treatment due to physical health concerns or lack of progress, or because they ceased to attend.

More recently CBT-E was assessed as a 20-week inpatient treatment program (13 weeks as an inpatient and 7 as a day patient) in twenty-seven adolescents (aged 13 and 17) with severe AN. Almost all patients (96%) completed the program with substantial improvement in weight, ED features, and general psychopathology that was maintained at 12-month follow-up.

The effect of CBT-E on non-underweight adolescents (n = 68; BMI ≥18.5) with an ED was recently evaluated by Dalle Grave, Calugi, Sarthirana, and Fairburn (2015). Three-quarters completed the full treatment (20 sessions), with two-thirds (67.6%, intent-to-treat) reporting minimal residual ED psychopathology by the end of treatment.
**Perfectionism as a transdiagnostic factor.** In a meta-analysis which reports on the efficacy of CBT for perfectionism involving participants with a range of psychiatric diagnoses (Lloyd et al., 2015), it was reported that CBT was effective in significantly reducing aspects of perfectionism in adults with either a comorbid diagnosis or perfectionism as a primary problem. This result it was argued was in line with theory implicating biased cognitive processes in the development and maintenance of perfectionism. This review included studies involving participants with a range of psychiatric diagnoses, with evidence not only for reductions in perfectionism but also symptoms of anxiety, depression and EDs. These findings build upon evidence concerning the transdiagnostic nature of perfectionism (Egan et al., 2011) and support theory suggesting that targeting perfectionism may be effective in reducing symptoms across a range of disorders (Bieling et al., 2004; Shafran et al., 2002)” (p. 726).

In Fairburn’s transdiagnostic model, ED are conceptualised as cognitive problems and all ED share similar characteristic often resulting in diagnosis migration (e.g. from AN to BN) (Fairburn et al., 2013). The same set of dysfunctional self-worth beliefs underlie and cause all ED. This was referred to as the “core psychopathology” of ED, which includes the overvaluation of body weight, appearance, and their control. Consequently, individuals with an ED engage in behaviours that reinforce this core psychopathology (e.g. extreme dieting regimes, shape and weight checking). As a consequence of these strategies, they develop a preoccupation with food and eating, as well as nutritional deprivation and physical hunger. Due to the restrictiveness of the dietary rules, it is almost inevitable that these are broken, resulting in emotional distress, which often leads to “all-or-nothing” thinking. Some individuals use binging to cope however this is usually followed by compensatory behaviour (e.g., induced vomiting, exercise, or use of laxatives). In addition to this cycle, Fairburn identified other
mechanisms that maintain the ED, namely clinical perfectionism, low self-esteem, and interpersonal difficulties; these mechanisms do not automatically lead to ED however (Fairburn et al., 2003).

**Summary**

This chapter has reviewed much of the literature on perfectionism in clinical settings and its links to ED. Perfectionism is a personality disposition characterised by striving for flawlessness and setting exceedingly high standards for performance, accompanied by tendencies for overly critical negative evaluations and fear of failure. Given the heightened level of perfectionism found among most AN sufferers (Bastiani, Rao, Weltzin, & Kaye, 1995), which is thought to maintain their symptoms (Shafran & Mansell, 2001), there have been calls to incorporate treatment to reduce perfectionistic thinking into existing effective interventions for AN (Bardone-Cone et al., 2007).

There is evidence that it is possible to modify perfectionism using various CBT approaches in adults; however, in adulthood, this may not always be sufficient to increase treatment success. Blatt et al. (1995) and Hewitt et al. (2003) argued that a multifaceted treatment program is necessary for many highly perfectionist ED patients. Due to the serious outcomes associated with AN, it is prudent that new research efforts determine optimal dosages and format delivery that will be effective in addressing perfectionism within AN. Thus, the next chapter builds a case for using CBT to address perfectionism during AN treatment.
Chapter Seven

Augmenting FBT with CBT for Perfectionism (FBT + CBT)

Anorexic behaviour is expected to be maintained by a range of cognitive distortions and maladaptive underlying assumptions that are applied to AN sufferers’ internal worlds (Schmidt & Treasure, 2006). AN sufferers have been found to judge themselves almost exclusively in terms of their eating habits, shape or weight (and often all three) and their ability to control these (Fairburn et al., 2003). This is in contrast to individuals free from AN, who tend to more frequently evaluate themselves on their perceived performance in a variety of life domains (such as relationships, work or sporting ability). Bruch (1974) originally theorised how perfectionism paired with life dissatisfaction during puberty or adolescent challenges can trigger the onset of an ED. Perfectionism appears to be activated in ED patients when they experience a failure or increased stress, and their reaction is a need to exert some control over the situation, which seems to be directed towards control over nutrition, weight and shape (Fairburn et al, 2003).

Bardone, Vohs, Abramson, Heatherton, and Joiner (2000) 3-factor model associated with risk for bulimic symptoms emphasises that it is “the joint presence of elevated perfectionism levels, body dissatisfaction, and lower self-esteem levels that increases risk for bulimic symptoms, and that modification of any of the three factors (perfectionism levels, body dissatisfaction, and self-esteem levels) should result in a reduction of bulimic symptoms” (p. 207).

CBT is considered the treatment of choice for BN (Wilson, Fairburn, & Agras, 1997), Fairburn et al. (2003) extended this theory and treatment into a “transdiagnostic” theory of ED (inclusive of AN). The aim was to increase treatment success by identifying four maintaining mechanisms (clinical perfectionism, core low
self-esteem, mood intolerance and interpersonal difficulties) that may be obstacles to change (Fairburn et al., 2003). Over the past decade there have been numerous studies designed to empirically validate treatment interventions targeting the cognitive behavioural maintaining mechanisms of perfectionism (Egan et al., 2014; Handley et al., 2015; Delle Grave et al., 2015).

FBT does not directly address individuals’ maladaptive ways of thinking (cognitions) and behaving that reinforce and maintain their ED; however, CBT is designed to address these cognitive distortions. By concentrating on those maintaining mechanisms that appear to be necessary for AN to persist, it has been hypothesised that reducing perfectionism would improve ED symptoms and rates of recovery. CBT has demonstrated some effectiveness in improving maladaptive patterns of perfectionism (Riley et al., 2007; Dalle Grave et al., 2014; Lloyd et al., 2015; Handley et al., 2015) and, since FBT is effective in the treatment of adolescent AN, adding CBT to FBT may enhance the treatment’s effectiveness for those with AN.

The aim of this research was to evaluate the feasibility of adding a CBT module focused on reducing adolescents’ perfectionistic thinking during the course of their treatment for AN. The two interventions used in this research are now described in detail, including the theory behind FBT + CBT.

**Intervention: FBT**

FBT was implemented as the treatment in both studies described in Chapters Six and Seven. FBT is an intensive outpatient treatment that views family members as an important resource in treatment. FBT specifically asks the parental figures to assume leadership in refeeding the malnourished child, regardless of age (Lock & Le Grange, 2012). This is a temporary arrangement until the child’s weight is restored to within the normal range for their age and height. The parents then hand the control over eating
back to the adolescent. Both parents and adolescents are further supported to ensure this transition is accomplished smoothly. FBT consists of approximately 20 60-minute therapy sessions with the whole family. These sessions generally occur over the course of one year, with treatment broken up into three distinct phases, as follows.

Phase one (weight restoration—approximately 10 sessions) of treatment initially targets weight restoration and normal eating above all other considerations. At the beginning of each session, the therapist briefly meets with the young person and uses this time to complete the weighing and develop engagement by empathising with their experience of having to gain weight and eat normally. After this brief five- to 10-minute period, the rest of the family joins the session, and the patient’s weight progress is illustrated via a graph shown to the family. Families typically struggle during the initial sessions to change their family routines to ensure that the patient’s eating is the central priority. This often means that one or both (if there are two) parents take leave from work to refeed their child for several weeks, just as they might do for a child with any other serious medical illness.

During this stage, efforts regarding weight gain and the promotion of normal eating are praised. Parents often must confront their differences in how to approach the problem of getting their child to eat, and usually find that, when they agree on a strategy, success follows. There is also a family meal conducted in session two, during which the therapist observes and coaches the parents in how to be consistent and firm in their requests to encourage their child to eat, while also constraining their frustration with what appears to be defiance and disobedience. If the patient has siblings, they are asked to refrain from helping with weight restoration or meal time regimens, but are asked to recognise how difficult this is for their sibling with AN and to try to find ways to support them during this period (Lock & Le Grange, 2012).
Phase two (transition control of eating back to the adolescent—approximately six sessions) of treatment begins when the adolescent with AN has gained weight and is eating without conflict under parental supervision. The aim of this phase of the treatment is to ask the parents to promote age-appropriate activities and eating behaviours for the adolescent (Lock & Le Grange, 2012). In a typical case, parents hand over control of eating gradually to see how their child manages this challenge. There is usually a learning curve for the adolescent; however, the enjoyment of being with their friends and the reduced worry and conflict in the family typically aided the effectiveness of this phase.

Phase three (adolescent issues and termination—approximately four sessions) of treatment examines adolescent issues and how the family’s role has changed as a result of having struggled with AN (Lock & Le Grange, 2012). The focus of treatment continues to shift towards establishing a healthy adolescent identity that is not tied to AN and body image concerns. Restoring the family lifecycle, after the intense focus on AN, begins with the family examining the effects of this struggle, both positive and negative, and anticipating future issues they may face—particularly family changes as a result of increased adolescent autonomy. In addition, the parents begin to reinvest in their lives and relationship after the intensity of refeeding.

**Intervention: CBT Perfectionism in Perspective**

The Centre for Clinical Interventions is a specialist statewide program that is administered through North Metropolitan Health Services in Western Australia. The centre has developed and produced resources for consumers and professionals to assist in providing interventions for mental health problems. The concepts and strategies in the CBT intervention ‘Perfectionism in Perspective’ (Fursland et al., 2009) have been developed based on evidence-based CBT approaches (Shafran, Cooper, & Fairburn,
a limited number of studies have utilised these particular modules (e.g. Lloyd et al., 2014). CBT for perfectionism is based on the view that perfectionism includes multiple problematic cognitions (thoughts) and behaviours. Each module includes information, worksheets and suggested exercises or activities to be completed in sessions or at home.

The nine CBT ‘Perfectionism in Perspective’ modules (Appendix D) are delivered via nine 60-minute individual sessions following the completion of phase one of FBT. Modules one and two consist of exploring the definition of perfectionism and identifying in what ways individuals can present as perfectionistic. There is also investigation of how an individual may become a perfectionist, including the effect of direct and indirect learning experiences and temperament.

Modules three and four illustrate a model of how unrelenting high standards escalate and extend the vicious cycle of perfectionism. Following this is an assessment of both the helpful and unhelpful aspects of being a perfectionist and strategies to cope with change. Modules five and six aim to reduce perfectionistic behaviours via behavioural experiments and shifting focus to less achievement-oriented tasks. They then focus on challenging perfectionistic thinking by understanding how thoughts influence feelings and behaviour. The remaining three modules including content to help the individual adjust the unhelpful rules and assumptions associated with perfectionistic thinking, re-evaluate the importance of achieving goals, and finally establish a plan for relapse prevention.

It is theorised that the most appropriate time to augment FBT should occur after the completion of FBT phase one, and in parallel with the implementation of FBT phase two. It is at this point in treatment that the adolescent will be well on the way to being weight restored and, theoretically, rational thinking may be more advanced because the
brain has the required nourishment. The main task of FBT phase two is to assist the parents to hand over control of eating to their child in an age-appropriate manner, and for parents to support their child to meet this challenge. During this phase, the adolescent begins to assert their independence. The challenge for the young person is to take back ‘normal’ adolescent control of their food and life at a pace they can handle without relapse. The majority of patients develop insight and motivation to recover around the time that they reach a healthy body weight. However, for some patients, certain characteristics of AN—such as a need for order and precision, and perfectionistic thinking—persist after weight restoration (Fairburn et al., 1999).

Those patients with higher levels of perfectionism may struggle to let go of the maladaptive perfectionistic thinking that drives their AN, even once they have recovered their normal weight, and perfectionism may continue to affect their daily lives in a negative way. Many negative thoughts, beliefs and feelings can accompany perfectionism and foster emotions such as a fear of failure as a sign of lack of personal worth, fear of making mistakes as a sign of failure, and fear of disapproval as a sign of not being accepted by others (Fairburn et al., 2003). According to this model (Fairburn et al., 2003), it is believed that addressing perfectionism requires teaching the young person to use cognitive techniques to challenge unhelpful or distorted thoughts, while using behavioural techniques to reduce ED behaviours.

In combination, the CBT intervention and FBT phase two aim to encourage the young person to experiment and learn how to live free from the grips of AN, while parents are still available to be supportive or intervene if required. The CBT intervention assists the adolescent to learn how to pinpoint and alter their perfectionistic tendencies before they revert back to extreme AN behaviours.
Summary

Most researchers and clinicians agree that AN has multiple determinants. Although there has been considerable progress in the evidence base for adolescent AN, with FBT being established as an efficacious treatment, new and original clinical interventions need to be evaluated to improve remission rates. Numerous studies have focused on the influence of personality and psychological factors on the onset and outcomes in AN (such as illness severity, duration and recovery). In particular, additional attention needs to be directed to the predisposing, precipitating and perpetuating factors of AN. Theory and research support the notion that perfectionism is one of the personality features observed in those affected by AN (Farstad et al., 2016). According to the cognitive behavioural model (Shafran et al., 2002), clinical perfectionism is maintained through the contribution of dichotomous thinking and, regardless of success or failure in relation to the original goal, standards are reset higher. Other facets of perfectionism related to ED are the tendencies of these individuals to never experience satisfaction or success while trying to achieve high standards. This can have implications on the course, symptomatic profile and maintenance of the ED.

The next chapter presents a novel case series of three adolescents diagnosed with AN, in which FBT is augmented with a CBT component targeting perfectionism. The inclusion of the perfectionism (CBT) module aims to reduce levels of perfectionism and for participants to report less concern over their mistakes. It is also hoped that this may assist those adolescents who remain in the clinical range for low weight and/or continue to display concerning ED cognitions at treatment completion.

Following on from this, Chapter Seven reports the findings of study two—a larger cohort study that was conducted to examine the feasibility of augmenting FBT
with CBT for perfectionism (FBT + CBT) in 19 adolescent females diagnosed with AN, who completed all phases of the treatment over approximately a one-year period.
Chapter Eight

Focus on Perfectionism in Female Adolescent Anorexia Nervosa

Abstract

Maudsley Family Based Treatment (FBT) for anorexia is successful for between 50-80% of adolescents. To improve this success rate, various approaches to augmenting the treatment have been proposed. In this study, we describe the treatment of three girls with FBT augmented with a module focusing on perfectionism, defined as personally prescribed or socially derived irrational and rigid expectations and exceedingly high standards of self-performance. Multiple times across the 1-year of treatment, girls completed measures of perfectionism and other outcomes. Results were optimistic for remission, and showed reductions in girls' perfectionism and obsessional and rigid thinking.
Focus on Perfectionism in Female Adolescent Anorexia Nervosa

Several randomised controlled trials (RCT) have established the effectiveness of Maudsley Family Based Treatment (FBT) for adolescent anorexia nervosa (AN) (Lock, Couturier, & Agras, 2006). However, a recent published trial indicated approximately 60% of adolescents remained in the clinical range for low weight and/or they continued to display concerning eating disorder (ED) cognitions at treatment completion (Lock, Le Grange, Agras, Moye, Bryson, & Jo, 2010). Such findings have resulted in a number of calls for augmenting FBT with additional individual therapy in order to increase the number of anorexia sufferers who have positive outcomes following treatment.

Lock, Le Grange, Agras, Moye, Bryson, and Jo (2010) argued that adolescence is a period of rapid and major brain development, and that targeting improved cognitive flexibility in adolescents with ED would not only improve cognitive functioning but also may prevent relapse and decrease the development of comorbid disorders. This suggests that one way to augment FBT would be to further address the obsessional thoughts and impaired cognitive and behavioural inflexibility that have been found among those with AN. These deficits are associated with rigidity and perfectionism and appear independent of starvation. Research has indicated that an initial high level of perfectionism interferes with positive outcomes following AN treatment and is associated with a greater chance of treatment dropout (Bardone-Cone et al., 2007).

Although there is little consensus about how to conceptualise perfectionism, most recently it has been described as multidimensional and multifaceted, incorporating both individual and interpersonal components. Flett and Hewitt (2002) described three aspects of perfectionism: self-oriented perfectionism (SOP) defined as the tendency to hold irrational expectations and exceedingly high standards of performance for oneself, socially prescribed perfectionism (SPP) defined as perfectionistic motivations due to the
perception that significant others expect perfect behaviour and performance, and other-oriented perfectionism (OOP) defined as “unrealistic standards and perfectionistic motivations for others”. To measure perfectionism in adolescents, Flett and Hewitt (2003) developed the Child-Adolescent Perfectionism Scale (CAPS), which measures two aspects of perfectionism - SOP and SPP.

Using the CAPS and other measures, there have been a number of studies of perfectionism and ED in children and adolescents. In a meta-analytic review of experimental and prospective studies across childhood, adolescence and adulthood, found that the effect of perfectionism on maintenance of eating pathology was medium in magnitude. More recently, Castro et al. (2004) examined dimensions of perfectionism in adolescents with AN ($n = 71$) and an adolescent comparison group ($n = 113$). In this study, the AN group, compared to adolescents in the general population, had a significantly higher mean score on SOP and Perfectionistic Self-Presentation (PSP), but there was no group difference in SPP. Thus, critical self scrutiny and self-imposed high standards were a prominent concern for AN sufferers as was the presentation of an image of thinness and physical attractiveness, while attempting to avoid revealing deficits or imperfections in the self to others.

Perfectionism has been found to play a critical role in the translation of body concerns into adolescents’ dieting and rigid behaviour. When perfectionism is paired with distorted perceptions of body image, a strong foundation for ED behaviour seems to be in place. Schutz, Paxton, and Wertheim (2002) highlighted how perfectionism, especially SPP, is a critical component underlying appearance comparisons among adolescent girls. Further, three dimensions of perfectionism (SOP, SPP, PSP) have been found to contribute to the prediction of dietary restraint in college students. In general, anorexic behaviour seems to be maintained by a range of cognitive distortions and
maladaptive underlying assumptions. It may be that SOP drives attempts to achieve control over one’s eating, shape, and weight and may fuel stringent self-evaluation, as well as the enduring perception that one must portray perfection to others.

At present, there is no standardised psychotherapeutic treatment model to address the multifactorial cognitive biases associated with adolescent AN, but utilising a Cognitive-Behavioural Therapy (CBT) approach may help to improve and modify unhelpful thinking styles (e.g. dichotomous reasoning) and reduce perfectionism. By concentrating on perfectionism as a maintaining mechanism for AN, it has been hypothesised that CBT with this focus would reduce ED symptoms and improve rates of recovery in adolescents with AN also receiving FBT. In this study, such an approach is described with illustrative examples with three adolescent females.

**Method**

**Participants**

Three female adolescents with a diagnosis of AN were recruited. Participants and parents were required to provide informed signed consent to be eligible to partake in the research study. Ethical approval to conduct this study was obtained through Queensland Health and Griffith University. Details about participants are reported below.

**Treatment**

Each participant completed FBT and CBT Perfectionism in Perspective (Fursland et al., 2009).

**FBT.** FBT is a manualised intensive outpatient treatment involving the whole family, with the parental figures assuming leadership in refeeding. FBT consists of

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1 Note: The names given for these patients are pseudonyms.
approximately 20 family 60-minute therapy sessions that take place during the course of a year. Treatment is provided in three distinct phases:

Treatment Phase one (Weight Restoration - usually 10 sessions) targets weight restoration and normal eating above all other considerations. In this phase, parents take an active role. Phase two (Transitioning Control of Eating Back to the Adolescent - approximately five sessions) of treatment begins when the adolescent with AN has gained weight and is eating without conflict under parental supervision. The aim of this part of treatment is to ask the parents to promote age-appropriate activities and eating behaviours for the adolescent. Phase three (Adolescent Issues and Termination - approximately four sessions) of treatment examines adolescent issues and how the family's role has changed as a result of having struggled with AN.

**CBT Perfectionism in Perspective (nine individual 60 min sessions).** The concepts and strategies for Perfectionism in Perspective (Fursland et al., 2009) have been developed from evidence-based psychological treatment, primarily CBT drawing on the work of Shafran et al. (2002). The aim is to assist the adolescent to set more flexible and achievable personal standards and to reduce the negative impact of perfectionistic thinking. The nine Perfectionism in Perspective modules included information, worksheets, and suggested exercises or activities to be completed in session and/or at home. Behavioural experiments are utilised to test out declarative beliefs by altering behaviour, observing the results and reflecting on the implications for the belief.

The focused CBT modules were administered after the completion of FBT Phase one and in parallel to the implementation of FBT Phase 2. At this point in treatment the majority of patients develop insight and motivation to recover and, theoretically, any impairment to cognitive functioning due to lack of nourishment should be restored. The
aim is to encourage the adolescent to experiment and learn how to live free from the grips of AN, while parents are still available to be supportive or step in if required. For some patients certain characteristics of AN, such as perfectionistic thinking, persist after weight restoration and can prevent treatment progress. Those patients with higher levels of perfectionism may struggle with negative beliefs, and feelings such as a fear of failure as a sign of lack of personal worth, fear of making mistakes as a sign of failure, and the fear of disapproval as a sign of not being accepted by others. Given that perfectionism has emerged as a maintenance factor, Stice (9) recommended that it be targeted in ED treatments with the hope of improving treatment success.

**Design**

The design was a single cohort study with four repeated assessments of perfectionism and cognitive flexibility for each participant. Measures were administered at the commencement of Phase one FBT, at the commencement of Phase two FBT and CBT, at the end of the CBT, and after Phase three when treatment was completed. The Eating Disorder Examination (EDE) (Cooper & Fairburn, 1987) was delivered following the final treatment session to assess psychopathology associated with the diagnosis of an ED.

**Measures**

**Eating disorder symptoms.** The EDE is rated through the use of four subscales (Restraint, Eating Concern, Shape Concern, Weight Concern) and a global score. The questions concern the frequency in which the patient engages in behaviours indicative of an ED over the most recent 28-day period. In past research, the Cronbach’s α for the subscales of the EDE has ranged from .44 to .78 (Berg, Peterson, Frazier, & Crow, 2012).


**Perfectionism.** Child-Adolescent Perfectionism Scale (CAPS) (Flett, Hewitt, Doucher, Davidson, & Munro, 1997). The CAPS has 22 items that measure SOP (12 items; e.g. *I try to be perfect in everything I do*) and SPP (10 items; e.g. *There are people in my life who expect me to be perfect*). In past research, Cronbach’s α for the SOP and SPP subscales of the CAPS has ranged from .66 to .85.

**Cognitive flexibility.** The 20-item Cognitive Flexibility Inventory (CFI) (Dennis & Vander Wal, 2010) measures three aspects of cognitive flexibility: (a) the tendency to perceive difficult situations as controllable (7 items, *Control*); (b) the ability to perceive multiple alternative explanations for life occurrences and human behaviour; and (c) the ability to generate multiple alternative solutions to difficult situations (b and c included 13 items measuring *Alternatives*). All items were summed to assess total Cognitive Flexibility. Research has reported the Cronbach’s α for all 20 items on the CFI has been .90 or higher (Dennis & Vander Wal, 2010).

**Results**

**Participant 1 (Mackenzie): First Treatment for a Chronic History**

Mackenzie was a 17-year-old female with no treatment history. At initial presentation she weighed 42.4 kg, 163cm, 76% Expected Body Weight (EBW) and had been amenorrhoeic for 12 months with an illness duration of two years. Mackenzie required a Paediatric medical admission, which included nasogastric tube refeeding, and cardiac monitoring due to tachycardia (pulse 45 beats per minute). Mackenzie was discharged after one month and commenced outpatient FBT, weight 49 kg, 90% EBW.

During Phase one of FBT Mackenzie’s mother struggled to take charge of her food and eating. Food refusal, arguments and negotiations around food become common within the family. Mother enlisted the support of her partner around meal times as she felt she needed back up to be firm with AN. Mackenzie attained 92%
EBW and the resumption of her menstrual cycle following 10 FBT sessions. During Phase two Mackenzie lost two kilograms when responsibility around food and eating was handed back to her. With the implementation of the perfectionism modules Mackenzie was encouraged to utilise the behavioural experiments (e.g. consuming a feared food) to target dichotomous thinking to challenge her strongly held beliefs about her weight and shape. During Phase three Mackenzie commenced vocational studies, which helped to shift her focus to her future career goals.

**Participant 2 (Addison): Rapid Onset**

Addison (16 years) was referred following a paediatric admission after she has lost approximately 10 kg (weight 46kg, EBW 81%) over a 4-month period via food restriction and excessive exercise. Addison was discharged from hospital to commence FBT with a weight of 50.6kg, height of 169cm, and 86% EBW.

In Phase one of FBT, Addison’s parents took responsibility for her oral intake in addition to increasing supervision. The family achieved 90% EBW in six FBT sessions; after this however there were two occasions where weight loss occurred. Phase two commenced with parents slowly shifting back control and responsibility of food and eating to Addison in an age appropriate way. Addison’s weight plateaued. For a brief period, Addison’s parents again needed to step in and take charge of Addison’s oral intake to ensure weight gain occurred. Addison used the perfectionism focused CBT sessions to identify how her unrelenting high standards had an impact on her sense of self. Addison was assisted to employ strategies, such as seeing mistakes as an opportunity to learn rather than seeing mistakes as failure, and frequently reminding herself of the negative consequences of her perfectionism. Phase three of treatment focused on assisting Addison to establish positive self-views, which did not include excessive body image concerns.
Participant 3 (Stella): AN Comorbid with Anxiety and Depression

At initial presentation, Stella (17 years) weighed 41.2kg, 162cm, and 74% EBW. Stella has lost approximately 11kg over a 5-month period via restricting, purging and increased exercise. AN was preceded by a depressive episode and generalised anxiety, which were managed by Lovan (30mg). Stella required a 1-month admission for medical stability and weight restoration and a 10-day psychiatric admission prior to commencing outpatient FBT, weight 47kg, 87% EBW.

For refeeding in Phase one of FBT, Stella’s mother took two weeks leave of work. For the remaining part of Phase one the separated parents agreed to divide the responsibility of managing Stella’s oral intake. Her father supported Stella during the day, while her mother was able to resume work. In the evenings mother would manage the meals. The family transitioned into Phase two of FBT after Stella attained 90% EBW and resistance around food and eating had reduced. Assuming personal responsibility for food and eating resulted in a Stella losing 3kg. Stella and her mother reported that, despite this setback, Stella appeared to be better equipped at handling her stress. She was more frequently seeking support from others and reported employing CBT strategies (e.g. disputation) learned in the perfectionism modules. Stella reported being able to reduce her perfectionistic behaviours via behavioural experiments and shifting focus to less achievement-oriented tasks. She maintained her weight at 92% EBW and resumed a regular menstrual cycle. Stella began to binge and purge, however, resulting in further fluctuations in her weight. With an increase in psychiatric risk factors and limited parental availability, Stella was admitted to the psychiatric inpatient unit. Within a couple of weeks Stella’s weight was back to 93% EBW with no binge purge episodes occurring.
**Assessment Pre- and Post-Treatment**

Couturier and Lock (2006) suggest that a combination of weight and psychological variables are most important in defining remission in adolescent AN. Therefore, an a priori definition of remission was used in this study based on these criteria (Couturier & Lock, 2006). Full Remission was defined as a combination of a minimum of 95% EBW for gender, age, and height as determined by CDC growth charts (http://www.cdc.gov/growthcharts/percentile_data_files.htm) and scores within one SD of the global mean EDE published norms. Partial Remission was defined as a weight greater than 85% EBW but not 95% or more, or weight greater than 95% EBW but with elevated EDE scores.

ED symptoms, body weight, cognitive flexibility and perfectionism scores for each participant, are shown in Table 8.1 and Figure 8.1. Participant 1 (Mackenzie) had a chronic history of restricted eating and Participant 3 (Stella) had AN that was complicated by a mixed anxiety and depression diagnosis. Both Mackenzie and Stella achieved partial remission. Also promising was that both their EDE scores were within one SD of community norms at the end of treatment (EOT). Participant 2 (Addison), who had experienced a relatively short illness duration, met the criteria for full remission. All three participants had self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) scores that were lower at the EOT compared to pre-treatment (see Figure 8.1), suggesting that each may have responded to the CBT perfectionism intervention.

We also expected cognitive flexibility to improve. Two of the participants (Addison and Stella) reported low flexibility at pre-treatment, which is associated with less cognitive adaptability when encountering stressful situations. Both girls also reported lower levels of control, having a greater tendency to perceive difficult
situations as uncontrollable at pre-treatment. After the CBT perfectionism intervention cognitive adaptability scores improved for both Addison and Stella, suggesting they had gained some flexibility in their approach to challenges and situations (see Table 8.1). In addition, their control scores were within one SD of community norms after the CBT module. Participant 1 (Mackenzie) rated herself as being highly flexible in her thinking at pre-treatment and post-treatment (see Table 8.1).
Table 8.1

Eating Disorder Symptoms and Cognitive Flexibility Scores for the Three Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Expected Body Weight (EBW)</th>
<th>Eating Disorder Examination (EDE)</th>
<th>Cognitive Flexibility Inventory (CFI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commencement of treatment</td>
<td>End of treatment (EOT)</td>
<td>Remission</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EDE global score (EOT)</td>
<td>Commencement of CBT modules</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>End of CBT modules</td>
</tr>
<tr>
<td>Mackenzie</td>
<td>76%</td>
<td>92%</td>
<td>Partial Remission¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.97</td>
<td>CFI: 98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AS: 69</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS: 29</td>
</tr>
<tr>
<td>Addison</td>
<td>81%</td>
<td>98%</td>
<td>Full Remission¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.67</td>
<td>CFI: 83</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AS: 55</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS: 28</td>
</tr>
<tr>
<td>Stella</td>
<td>74%</td>
<td>93%</td>
<td>Partial Remission²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.65</td>
<td>CFI: 84</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AS: 62</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS: 22</td>
</tr>
</tbody>
</table>

Note. ¹ a combination of a minimum of 95% EBW and EDE Global Mean Score within 1 standard deviation from age-matched published norms 0.932 (SD: 0.805; (19)).
² a weight >85% or a weight greater than 95% EBW but with elevated EDE scores.
Cognitive Flexibility Inventory (CFI) Mean Score: 102.98 (SD=13.91), Alternative Scale Mean Score (AS): 67.59 (SD=9.41), Control Scale Mean Score (CS): 35.36 (SD = 7.02) (18).
Figure 8.1. Perfectionism scores at pre- and post-CBT (perfectionism modules), and at end of all treatment for the three participants with anorexia nervosa.

Note: 1 Mackenzie; 2 Addison; 3 Stella. Higher scores reflect greater perfectionism.
Discussion

High achieving, perfectionistic traits and inflexible and rigid thinking patterns are known to be associated with developing and maintaining AN during adolescence (Franco-Paredes, Mancilla-Díaz, Vázquez-Arévalo, López-Aguilar, & Álvarez-Rayón, 2005). This was the first study, to our knowledge, to complement FBT, which appears to be the most effective treatment of adolescent AN, with a CBT component focused on perfectionistic thinking and related maladaptive thought patterns. Treatment involved 20 FBT sessions over a 12-month period in addition to nine adolescent weekly CBT sessions that specifically addressed perfectionism, delivered concurrently with phase two of FBT.

Our results mirror the success of utilising FBT in achieving remission in terms of appropriate weight restoration and ED psychopathology scores returning to the norm. Two participants did not attain the required 95% EBW to indicate full recovery. It is possible that participants with a more chronic history and/or with comorbid conditions may be more difficult to treat and need more time or intensive treatment for weight restoration to be achieved.

The results also suggest that the inclusion of the targeted CBT perfectionism modules may reduce levels of perfectionism, inflexible and rigid thinking. But more specifically the focus on perfectionistic thinking may assist adolescents with AN to be less critical in relation to evaluating their weight and shape and change their thinking in relation to a perfect body weight or shape. Further, all three participants reported the CBT modules increased their capacity to perceive making mistakes as an opportunity for new learning rather than perceived failure or “not being perfect”.

Although perfectionistic thinking improved in all three participants, the participant with the longest illness duration demonstrated the largest reduction in the domain of SOP, suggesting a greater benefit from the perfectionism module and the potential that this may reduce the likelihood of future relapse. Augmenting FBT to improve outcomes for the partial
remission or non-responding groups will require more extensive focus on the multiple maintaining factors, including perfectionism and other factors that are common among those with ED.

As highlighted in the literature a large proportion of those completing FBT go on to have additional treatment. This study was novel in that it included the implementation of an additional intervention during treatment, which may have had the added benefit of reducing subsequent treatment. Patients informally reported the additional individual CBT sessions complemented the family work in Phase Two of FBT. Specifically, this module was described as providing cognitive skills that highlighted differences between the thinking and goals of AN and that of a healthy adolescent.

Although preliminary, these findings have some implications for intervention research and clinical practice in addressing a known correlate of AN, namely perfectionism. Future research should examine the short and longer-term effectiveness of FBT augmented with CBT focusing on perfectionism. Such a study will require a larger sample and a more rigorous research design in order to test the effects of this combined approach on treatment outcomes and remission rates.
References


Chapter Nine

Preliminary Outcomes of Family-based Treatment with Cognitive Behavioural Therapy

for Perfectionism in Adolescent Anorexia Nervosa

Abstract

**Objective:** To evaluate symptom change among adolescents with anorexia nervosa receiving a novel program of family-based treatment (FBT) enhanced with a cognitive behavioural therapy module on perfectionism (FBT+CBT).

**Method:** A cohort study with four repeated assessments of eating disorder symptoms, which included a subscale of perfectionism, and self-prescribed perfectionism and socially oriented perfectionism (SOP). Participants were 21 adolescents with AN who entered FBT+CBT, which included 20 sessions of FBT and 9 CBT sessions. Each participant was followed for approximately one year.

**Results:** Using intent-to-treat analyses, there were significant improvements in ED symptoms, weight and perfectionism (except SPP) by the third assessment (following CBT) and at the end of treatment (FBT+CBT) compared to pre-treatment. Of the 19 completing participants, more than one-half met criteria for reliable improvement on all measures (except SPP), and all participants met criteria for reliable improvement in weight. Results were also optimistic for remission.

**Discussion:** Adolescents with AN receiving FBT+CBT showed decreased symptoms and perfectionism directly after the CBT module, and at treatment completion relative to pre-treatment. A randomised controlled trial should be conducted to compare the efficacy of FBT to FBT+CBT, including longer follow-up to assess length and rate of disease remittance or time to relapse.
Preliminary Outcomes of Family-based Treatment with Cognitive Behavioural Therapy for Perfectionism in Adolescents with Anorexia Nervosa

Despite research that shows family-based treatment (FBT) for adolescent anorexia nervosa (AN) is efficacious, only about 50% of sufferers experience full remission as an outcome of treatment (Madden et al., 2015). FBT is designed to involve the family in the supervision of the adolescents' eating behaviour, eventually turning control over eating back to the adolescent, as weight is closer to restored and AN symptoms decline. Given that FBT is focused on management of eating behaviour and family interactions, it does not directly address adolescents' maladaptive ways of thinking (cognitions) and emotional responses. It is these maladaptive patterns that are thought to directly reinforce and maintain adolescents' eating disorders (ED), perhaps resulting in poor treatment response or relapse (Hurst & Zimmer-Gembeck, 2015; Lock, 2010). The cognitive, affective and behavioural patterns expected to have adverse consequences for AN recovery include obsessionality, inflexibility and low tolerance to distress, as well as perfectionism, black and white thinking and excessive fear of mistakes or failure. Of these cognitive patterns, perfectionism, in particular, has been described as a transdiagnostic process that is either a risk or a maintaining mechanism for many forms of psychopathology, including AN (Egan, Wade, & Shafran, 2011).

Perfectionism has been defined in many different ways, with early research describing the construct as unidimensional and inherently maladaptive and dysfunctional (Burns, 1980). However, over the past two decades it has been described as a multidimensional construct (e.g., Frost, Marten, Lahart & Rosenblate, 1990; Hewitt et al., 1991). Egan et al. (2011) described the cognitive behavioural model of clinical perfectionism as involving a range of factors including "the role that performance related behaviour, including performance checking (e.g., constantly comparing performance to others), avoidance, procrastination, and counterproductive behaviours (e.g., being over-thorough, checking) has in maintaining the cycle of clinical perfectionism" (p. 203; see also Shafran, Fairburn, & Cooper, 2002; Shafran,
Egan, & Wade, 2010). In another description of perfectionism, Hewitt et al. (1991) identified self-oriented perfectionism as divergent from socially prescribed perfectionism. Self-oriented perfectionism was defined as setting high personal standards and harshly evaluating progress or achievement through self-criticism and self-punishment. Self-oriented perfectionism is associated with a motivational component of striving to attain perfection in addition to striving to evade failure. In contrast, socially prescribed perfectionism is more interpersonal in orientation and incorporates the perception that significant others impose unrealistic standards on the individual, expecting perfection. Individuals high in socially prescribed perfectionism strive to avoid the disapproval of others and have an excessive fear of negative evaluation by others.

Perfectionism is believed to reinforce persistent engagement in AN behaviours, such as unrelenting dietary restriction and incessant striving for a “perfect” weight or shape, but a continued perception of personal failure and negative evaluation by others (Bardone-Cone et al., 2007; Fairburn, Cooper, & Shafran, 2003). In a pilot study of adolescents (n = 40; aged 14-17 years) who received specialist inpatient treatment for EDs, Vall and Wade (2016) investigated predictors, moderators, and mediators of outcome and readmission. They concluded that perfectionism was important in predicting several outcomes (e.g., weight, eating pathology, quality of life and readmission) for this cohort. Specifically, they stated that “perfectionism may be harmful if left unchecked” and “one potentially useful approach would be to target perfectionism in an effort to neutralise its harmful side effects in the maintenance of ongoing psychopathology while redirecting the desire to achieve high standards away from AN and towards achievable standards in other life domains that have been sidelined by illness” (p. 7).

Cognitive Behavioural Therapy (CBT) is one approach that has been found to be successful at addressing cognitive distortions, such as rigid perfectionism (Shafran, Cooper, & Fairburn, 2002). In one meta-analysis (Lloyd, Schmidt, Khondoker, & Tchanturia, 2014), it
was concluded that reducing perfectionism through CBT is possible even in short interventions across a range of psychiatric diagnoses among adults. Further, such findings were described as consistent with theory implicating biased cognitive processes in the development and maintenance of perfectionism. This review included studies involving participants with a range of psychiatric diagnoses, with evidence not only for reductions in perfectionism but also symptoms of anxiety, depression and EDs. It was suggested that “these findings build upon evidence concerning the transdiagnostic nature of perfectionism (Egan et al., 2011) and support theory suggesting that, targeting perfectionism may be effective in reducing symptoms across a range of disorders (Bieling, Israeli, & Antony, 2004; Shafran et al., 2002)” (Lloyd et al., 2015, p. 726). Based on such research, it has been hypothesized that reducing perfectionism would improve ED symptoms and rates of recovery (Hurst & Zimmer-Gembeck, 2015).

With the aim of improving treatment outcomes and long-term recovery rate, some therapeutic approaches for adolescents with EDs are beginning to incorporate strategies to address potential maintaining mechanisms, such as perfectionism. In a series of studies of enhanced cognitive behavioural therapy (CBT-E; Delle Grave et al., 2013, 2014, 2015) for adolescents with AN, the psychological and behavioural mechanisms that underlie and maintain the ED are targeted by (i) addressing the core psychopathology of the overevaluation of shape and weight; (ii) improving coping mechanisms to deal with events and moods which affect eating; (iii) if indicated, addressing core maintaining mechanism - clinical perfectionism, core low self-esteem, or interpersonal difficulties; and (iv) relapse prevention and ongoing treatment planning, has demonstrated effectiveness. In the first of these studies (Delle Grave et al, 2013), adolescent patients ($N = 49, M = 15.5$ years, $SD = 1.3$) received CBT-E at a community based ED clinic over a 40-week period. At the conclusion of treatment two-thirds of patients had a substantial increase in weight and a marked decrease in ED psychopathology. At follow up results were maintained. It was concluded that CBT-E
would show its greatest effect in those adolescents that are presenting with maintaining mechanisms, such as perfectionism, as the treatment directly targeted them. In another study (Delle Grave et al, 2014) 27 adolescents (range 13–17 years) admitted to an inpatient hospital received a 20-week CBT-E treatment program. Patients were assessed pre, post and at 6- and 12-month follow-up. Results indicated there was a substantial improvement in weight, ED features, and general psychopathology, with improvements maintained at 12-month follow-up.

One study has directly measured perfectionism as an outcome of AN treatment, reporting that perfectionism (assessed with multiple measures) declined in a case series of three adolescents with AN receiving FBT with added CBT perfectionism modules (FBT + CBT) (Hurst & Zimmer-Gembeck, 2015). In this intervention, CBT was implemented after the completion of FBT phase one and in parallel to the implementation of FBT phase two. It was at this point in FBT that adolescents with AN are making progress in weight restoration, which should assist with improvements in rational thinking because the brain has the required nourishment. These improvements in symptoms and cognitive capacity with adolescents, coupled with the main task of FBT phase two (i.e., to assist the parents to hand over control of eating to their child in an age appropriate way and for parents to support their child to meet this challenge), makes FBT phase 2 the ideal time during FBT to implement a CBT treatment component.

In the present novel prospective cohort study, the feasibility and changes in perfectionism and ED symptoms were evaluated in adolescent females with AN who received FBT with a CBT module added to address perfectionism (FBT+CBT). CBT to address perfectionism was implemented after FBT Phase 1 and reductions in symptoms and perfectionism in adolescent AN sufferers were expected by the end of the CBT intervention (Time 3) and by the end of treatment (Time 4).
Method

Participants and Procedure

Participants were 21 Australian female adolescents aged 12-17 years ($M = 14.9$ years, $SD = 1.2$ years) from an urban area. They were consecutively referred to a specialist outpatient child and adolescent ED service and diagnosed with AN (American Psychiatric Association, 2000). All had an illness duration of less than three years. Two adolescents entered the study but dropped out early in treatment and did not complete all phases; one required multiple lengthy admissions to hospital then withdrew and the other withdrew opting for an alternative individual treatment modality. Nineteen required a medical admission prior to commencing outpatient treatment, and three were readmitted to hospital during treatment. Informed signed parental consent to participate in the study was required and university and government Human Ethics Review Boards approved the study. Two registered psychologists trained in FBT and CBT delivered both interventions. To ensure treatment fidelity, an independent therapist reviewed sessions and both therapists received regular supervision. A consort flow diagram is shown in Figure 1.

Treatments

**FBT.** FBT is a manualised intensive outpatient treatment involving the whole family, with caregivers assuming leadership in refeeding (Lock & Le Grange, 2013). FBT consists of approximately 20 x 60-minute sessions that take place over a year, separated into three phases. Phase one (usually 10 sessions) targets weight restoration and normal eating with caregivers taking an active role. Phase two (approximately six sessions) begins when weight gain is steady and the adolescent is eating without conflict under caregiver supervision. One aim is for parents to promote age-appropriate activities and eating behaviours for the adolescent. Phase three (approximately four sessions) focused on remaining adolescent concerns and cements positive changes in family roles that occurred during treatment.
Figure 9.1

Consort Flow Diagram

Assessed for eligibility

Declined to participate
(n = 5)

Continued to FBT+CBT (n = 21)

Treatment sessions attended
(n = 19)
FBT
Phase 1: (M = 13.2, SD = 3.3)
Phase 2: (M = 5.5, SD = 2.3)
Phase 3: (M = 4.6, SD = 1.1)
CBT = 9 sessions
Median no. of sessions = 32

Withdrawal n = 2
(1 received several inpatient admissions.
1 patient received individual CBT-E)

Analysis Intent to Treat
n = 21
excluded from analysis
n = 0
CBT. "Perfectionism in Perspective" modules (Fursland, Raykos, & Steele, 2009, http://www.cci.health.wa.gov.au) developed from the perfectionism model of Shafran et al. (2002) were used. These modules included: what is perfectionism, costs and benefits; development of perfectionism; managing and reducing perfectionist behaviours; what maintains perfectionism, challenging perfectionist thinking, adjusting unhelpful rules and assumptions; re-evaluating the importance of achievement and self-worth; and developing an adaptive model of appropriate self-standards. The nine modules included information, worksheets, and suggested exercises or activities to be completed in session and/or at home and were delivered via individual weekly sessions to the adolescent after the completion of FBT-Phase one and in parallel to the implementation of FBT-Phase 2.

Design

The design was a single group, prospective cohort study with four repeated assessments. Measures were administered at FBT-Phase 1 commencement (T1), FBT-Phase 2 and CBT commencement (T2), after completion of CBT (T3), and after FBT+CBT completion (T4). On average, participants received 23 FBT and nine CBT sessions (M = 32.3 sessions; SD = 4.7).

Measures

At each of the four times of assessment, adolescents completed the 91-item Eating Disorder Inventory (EDI-3) (Garner, Olmstead, & Polivy, 1983) and the 22-item Child and Adolescent Perfectionism Scale (CAPS) (Flett, Hewitt, Doucher, Davidson, & Munro, 1997). Also percentage Expected Body Weight (%EBW) was evaluated at each time of assessment. EDI-3 is a 91-item self-report measure used to evaluate symptomatology associated with eating disorders. The EDI-3 assessed eating disorder symptomatology across six areas, and contains three subscales (total symptoms (R), and two aspects of perfectionism: overcontrol (O) and perfectionism (P)). The Cronbach's α for the EDI-3 (R) was .88, whereas it was .90 for the EDI-3 (O) and .89 for the EDI-3 (P).
CAPS (Flett et al., 1997) is a self-report measure of perfectionism modelled after the adult version, Multidimensional Perfectionism Scale (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991) but in terms relevant to children. The CAPS is a self-report questionnaire of 22 items consisting of two scales: 12 items measuring Self-Oriented Perfectionism (e.g. *I try to be perfect in everything I do*) and 10 items measuring Socially Prescribed Perfectionism (e.g. *There are people in my life who expect me to be perfect*). In the present study, the Cronbach's α for items on the SOP and SPP subscales were .91 and .85, respectively.

The %EBW was calculated using the Center for Disease Control growth charts for expected weigh for gender age and height (Kuczmarski et al., 2002) (%EBW = BMI/50th percentile BMI for gender age and height × 100). In addition, The 36-item Eating Disorder Examination Questionnaire (EDE-Q) (Fairburn & Beglin, 1994) was administered at the end of treatment only to assess psychopathology of eating-disordered behavior. Items are scored using a 7-point, forced-choice, rating scheme. It yields a Global score and four subscale scores: Restraint, Shape Concern, Weight Concern, and Eating Concern. The Global score is the average of the four subscale scores. Frequencies of binge eating and compensatory behaviours are assessed in terms of the number of episodes occurring during the rated period, these items do not contribute to subscale scores. In the present study, the Cronbach's α for the items on the subscales of the EDE ranged from .65 to .93.

**Symptom Remission and Clinical Significance**

Couturier and Lock (2006) suggest that a combination of weight and psychological variables are most important in defining remission in adolescent AN. Therefore, an a priori definition of remission was used in this study based on these criteria (Couturier & Lock, 2006). Full Remission was defined as a combination of a minimum of 95% EBW for gender, age, and height (www.cdc.gov/growthcharts/percentile_data_files.htm) and scores within one SD of the global mean EDE published norms. Partial Remission was defined as weight > 85% and < 95% EBW, and or an elevated EDE score at the end of treatment.
Overview of Analyses

Means and standard deviations of all measures at all four repeated times of assessment are reported in Table 1. Table 1 also summarizes the results of general linear mixed models (GLMMs) and paired t-tests, which were used to determine if there were significant improvements in AN symptoms, weight and a decrease in perfectionism thinking. GLMMs were used to test whether weight, ED symptoms and perfectionism showed significant linear, quadratic or cubic change from T1 to T4. Paired t-tests were used to test the differences in scores at pre- (T1) to post-treatment (T4), pre- (T1) to prior the CBT perfectionism (T2), and pre- (T1) to after the CBT perfectionism intervention (T3). Means and SEs from the GLMMs were used to calculate effect sizes (Cohen's d). To maintain all 21 participants in the analyses, intention-to-treat (ITT) methods were used. “ITT analysis avoids overoptimistic estimates of the efficacy of an intervention resulting from the removal of non-compliers by accepting that noncompliance and protocol deviations are likely to occur in actual clinical practice” (Gupta, 2011, p.109).

Pearson's correlations were used to examine the associations between change in symptoms and change in perfectionism from T1 to T3 and T1 to T4. To assess change, difference scores (between T1 and T3 or between T1 and T4) were calculated so that higher scores indicated greater improvement (see Table 2). Finally, nine regression models were tested; three models with %EBW as the dependent variable (DV) with one of the three measures of perfectionism difference from pre-treatment to post-treatment (SOP, SPP and ED Perfectionism) as the independent variable, three models for the dependent variable EDI ED Risk at T3, and three models for the dependent variable EDI ED Risk at T4. In each model, we entered the pre-treatment version of the DV and a measure of perfectionism difference as the two independent (i.e., predictor) variables.
Results

Symptom Remission and Clinical Significance

Eleven of the 19 (57%) adolescents who completed treatment attained full remission (> 95% of EBW and EDE global score within one SD of published norms). The remaining eight (43%) attained partial remission, and 50% (four) received further individual or family therapy intervention at the completion of the trial.

Change in Weight, ED Symptoms and Perfectionism from T1 to T4

Mixed model results showed that there was a significant linear increase in %EBW, increasing from a mean of 81.7% at T1 to 95.5% at T4 (see Table 1). Also, there was evidence of a significant quadratic change (inverted-U shape), with %EBW showing a steep rise from T1 to T3, and then levelling off between T3 and T4. When paired t-tests were used to compare %EBW, there was a significant positive difference at pre-treatment compared to T2, T3 and T4.

In the mixed models, there were significant linear declines in all EDI-3 subscales (total symptoms, perfectionism, and overcontrol) and in self-oriented perfectionism. When paired t-tests were conducted, there was a significant lower level of ED total symptoms at T3 compared to pre-treatment, and at post-treatment compared to pre-treatment. There was no significant difference in ED symptoms between T1 and T2. EDI-3 overcontrol, EDI-3 perfectionism and self-oriented perfectionism were lower at T3 (following the CBT intervention) compared to pre-treatment, and between at post-treatment compared to pre-treatment (d ranged from .60 to .76).

Finally, in a mixed model, there was no significant linear change in socially prescribed perfectionism, but there was evidence of quadratic change, with a very slight increase from T1 to T2 and then decline after. However, despite this pattern over time, paired t-tests revealed no significant difference in socially prescribed perfectionism between T1 and T2, T1 and T3, or T1 and T4.
Reliable Change

Reliable change indices were calculated for the 19 participants who completed FBT+CBT in order to determine whether the magnitude of change for a given participant was statistically reliable (using formulas described in Christensen & Mendoza, 1986; see Table 3). The %EBW reliable change criterion (RCrit) was 6.55, and all participants (100%) had a reliable increase. For EDI-3 measures, EDI total symptoms had an RCrit of 17.25, and 11 of the 19 participants (58%) had a reliable decline in symptoms, whereas 1 participant (5%) had a reliable increase. EDI-3 perfectionism had an RCrit of 4.44, with 11 of the 19 participants (58%) with a reliable decline in perfectionism and 2 (11%) with a reliable increase. EDI-3 overcontrol had an RCrit of 9.97, with 10 of the 19 participants (53%) with a reliable decline in overcontrol and 2 participants (11%) with a reliable increase.

For self oriented perfectionism, the RCrit was 7.03, and 10 of the 19 participants (53%) had a reliable decline in perfectionism and 2 participants (11%) had a reliable increase. Social prescribed perfectionism had an RCrit of 8.82, with 6 of the 19 participants (32%) with a reliable decline in perfectionism and 2 (11%) with a reliable increase.

Correlations between ED symptoms and Perfectionism

As shown in Table 2, for the 19 participants who completed, greater improvement in ED symptom level was associated with greater improvement on all three measures of perfectionism (r's from .48 to .68, all p < .05). However, improvement in %EBW was only significantly correlated with improvement in socially prescribed perfectionism from T1 to T3. Correlations were re-estimated after estimating missing values for the two noncompleters using EM. Values in Table 2 changed by at most .01 when these additional two participants were included in the analyses.
Results of Regressing %EBW and ED Symptom Level on Perfectionism Difference Scores

In each of the three models of %EBW, the perfectionism difference score (T1 to T3) was not significantly associated with %EBW at post-treatment (relative to %EBW at T1: pre-treatment), β ranged from -.07 to -.34, p ranged from .13 to .79. In each of the three models of EDI ED Risk at T3, the perfectionism difference score (T1 to T3) was negatively associated with EDI ED risk at T3 (relative to T1: pre-treatment), EDI Perfectionism β = -.40, p < .05, SOP β = -.44, p < .05, SPP β = -.52, p < .01. In each of the three models of EDI ED Risk at T4, the findings were similar to those for EDI ED Risk at T3; the perfectionism difference score (T1 to T3) was negatively associated with EDI ED risk at T4 (relative to T1: pre-treatment), EDI Perfectionism β = -.55, p < .01, SOP β = -.57, p < .01, SPP β = -.65, p < .01. Thus, a greater decline in perfectionism from T1 to T3 was associated with less EDI ED risk at T3 and T4.
Table 1
Descriptive Statistics for All Continuous Measures, and Comparisons of ED Symptoms and Perfectionism at Pre-Treatment (T1) to T2, T3, and Post-treatment (T4) Using Intent-to-Treat Methods (N = 21)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre (T1)</th>
<th>Pre CBT (T2)</th>
<th>Post CBT (T3)</th>
<th>Post (T4)</th>
<th>GLMM, Linear change, $F(1,20)$$^1$</th>
<th>Paired t-test Pre- (T1) vs. T2</th>
<th>Paired t-test Pre- (T1) vs. T3</th>
<th>Paired t-test Pre- (T1) vs. T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight and symptoms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%Expected body weight</td>
<td>81.6</td>
<td>88.6</td>
<td>93.4</td>
<td>95.0</td>
<td>-6.03**</td>
<td>-9.65**</td>
<td>-11.7**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5.4)</td>
<td>(5.8)</td>
<td>(5.9)</td>
<td>(6.0)</td>
<td>76.6**</td>
<td>(-1.4)</td>
<td>(-2.6)</td>
<td>(-2.77)</td>
</tr>
<tr>
<td>EDI symptoms</td>
<td>56.2</td>
<td>50.0</td>
<td>41.7</td>
<td>36.1</td>
<td>1.55</td>
<td>3.18**</td>
<td>3.64**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(17.6)</td>
<td>(21.8)</td>
<td>(24.2)</td>
<td>(26.5)</td>
<td>(0.31)</td>
<td>(0.69)</td>
<td>(0.90)</td>
<td></td>
</tr>
<tr>
<td>Perfectionism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI perfectionism</td>
<td>14.3</td>
<td>14.0</td>
<td>11.0</td>
<td>10.2</td>
<td>0.29</td>
<td>3.01**</td>
<td>3.02**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.9)</td>
<td>(6.2)</td>
<td>(6.0)</td>
<td>(6.7)</td>
<td>(0.05)</td>
<td>(0.60)</td>
<td>(0.70)</td>
<td></td>
</tr>
<tr>
<td>EDI overcontrol</td>
<td>29.3</td>
<td>28.6</td>
<td>23.7</td>
<td>21.0</td>
<td>0.31</td>
<td>2.20*</td>
<td>2.7*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(11.1)</td>
<td>(12.7)</td>
<td>(14.5)</td>
<td>(16.0)</td>
<td>(0.06)</td>
<td>(0.43)</td>
<td>(0.60)</td>
<td></td>
</tr>
<tr>
<td>Self-oriented perfectionism</td>
<td>47.9</td>
<td>46.3</td>
<td>43.3</td>
<td>40.1</td>
<td>0.99</td>
<td>2.61*</td>
<td>3.3**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8.5)</td>
<td>(9.8)</td>
<td>(11.4)</td>
<td>(12.0)</td>
<td>(0.17)</td>
<td>(0.46)</td>
<td>(0.76)</td>
<td></td>
</tr>
<tr>
<td>Socially prescribed perfectionism</td>
<td>28.0</td>
<td>29.7</td>
<td>28.5</td>
<td>26.0</td>
<td>-1.06</td>
<td>-0.24</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8.3)</td>
<td>(8.4)</td>
<td>(9.5)</td>
<td>(10.4)</td>
<td>(0.20)</td>
<td>(0.06)</td>
<td>(0.21)</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.

Note: Measures were administered at the commencement of Phase one FBT (Pre T1), at the commencement of Phase two FBT and CBT (T2), at the end of the CBT (T3), and after Phase three FBT when treatment was completed (T4). EDI - Eating Disorder Inventory. $d$ = Effect size, Cohen's $d$.

$^1$No quadratic or cubic repeated effect was significantly different from 0, except there were significant quadratic patterns found for %EBW $F(1,20) = 13.4$, $p < .01$, and SPP with $F(1,20) = 5.6$, $p = .03$
Table 2

Correlations between Change in Perfectionism (T1 to T3 and T1 to T4) and Change in Symptoms from T1 to T4 (N = 19)

<table>
<thead>
<tr>
<th>Difference scores</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. %EBW, T1 to T4</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. EDI total symptoms, T1 to T4</td>
<td>.33</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. EDI P, T1 to T3</td>
<td>.27</td>
<td>.48*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Self-oriented P, T1 to T3</td>
<td>.38</td>
<td>.65**</td>
<td>.67**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Socially prescribed P, T1 to T3</td>
<td>.50*</td>
<td>.66**</td>
<td>.65**</td>
<td>.76**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. EDI P, T1 to T4</td>
<td>.31</td>
<td>.54*</td>
<td>.82**</td>
<td>.61**</td>
<td>.63**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>7. Self-oriented P, T1 to T4</td>
<td>.39</td>
<td>.63**</td>
<td>.69**</td>
<td>.72**</td>
<td>.69**</td>
<td>.76**</td>
<td>--</td>
</tr>
<tr>
<td>8. Socially prescribed P, T1 to T4</td>
<td>.39</td>
<td>.68**</td>
<td>.63**</td>
<td>.63**</td>
<td>.85**</td>
<td>.64**</td>
<td>.85**</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.

Note. P = perfectionism. T1 = pre-treatment. T3 = post-CBT. T4 = post-treatment. All difference scores were calculated so that a higher value reflected more improvement. Correlations were re-estimated after estimating missing values for the two noncompleters using EM. Values in this table changed by at most .01 when these additional two participants were included in the analyses.
Table 3
Summary of Reliable Change ($N = 19$).

<table>
<thead>
<tr>
<th>Measure</th>
<th>RCrit</th>
<th>% Reliable increase</th>
<th>% Reliable decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>%EBW</td>
<td>6.55</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>EDI symptoms</td>
<td>17.25</td>
<td>5%</td>
<td>58%</td>
</tr>
<tr>
<td>EDI perfectionism</td>
<td>4.44</td>
<td>11%</td>
<td>58%</td>
</tr>
<tr>
<td>EDI overcontrol</td>
<td>9.97</td>
<td>11%</td>
<td>53%</td>
</tr>
<tr>
<td>Self-oriented perfectionism</td>
<td>7.03</td>
<td>11%</td>
<td>53%</td>
</tr>
<tr>
<td>Socially prescribed perfectionism</td>
<td>8.82</td>
<td>11%</td>
<td>32%</td>
</tr>
</tbody>
</table>
Discussion

Drawing from literature that has reported positive associations between perfectionism and AN symptoms (Bardone-Cone et al., 2007) and theory that perfectionism may play a role in maintaining AN symptoms (Egan et al., 2011), CBT was added to phase two of FBT in the current study. Thus, CBT was implemented after the “immediate crisis” of re-nourishment had been partially addressed and adolescents may have had more cognitive capacity for individual work. It was found that CBT+FBT was associated with declines in adolescents’ perfectionism and ED symptoms. It was also found that improvements in perfectionism were associated with improvements in ED symptoms. More specifically, compared to pre-treatment, significant improvements in ED symptoms and a decrease in perfectionism occurred following CBT and by the end of treatment. Most adolescent participants met the criteria for reliable change across the outcomes of increased weight, reduced ED symptoms and perfectionism most.

Further, weight reliably increased for all participants and most participants (57%) met criteria for full remission (Couturier & Lock, 2006) at the end of treatment, while the remaining participants experienced partial remission. These figures are higher than those reported for recent randomized controlled trials of FBT (Le Grange et al., 2016; Madden et al., 2015). Of particular note, a greater decline in perfectionism was associated with greater improvement in ED symptoms, suggesting that CBT for perfectionism may have played a part in ED symptom improvement. Further this addition to FBT may be particularly beneficial to individuals scoring higher on measures of rigidity/obsessionality. Overall, the findings support the feasibility of a short-term individual therapy approach (9 CBT sessions) added to standard FBT (about 20 sessions), showing that this approach can produce clinically significant changes in symptoms and various components of perfectionism in adolescents diagnosed with AN.
As in previous studies of adolescent AN (Castro-Fornieles et al., 2007), a high percentage (78%) of participants in the present study presented with self-oriented perfectionism above the normed mean ($M = 35$), supporting the potential benefit of the CBT module for perfectionism in this group. It was also notable that self-oriented perfectionism improved following the CBT component of the treatment and this improvement was maintained by the end of treatment. In contrast to findings for self-oriented perfectionism, there was no significant decline in socially prescribed perfectionism (i.e., adolescents' perception that others, including parents, had very high expectations of them). This may be in part due to the focus of FBT where parents are charged with taking control of weight restoration and normalising eating, with control only handed back to the adolescent once the ED behaviours have abated. This source of tension between the two treatments suggests an area requiring further work in the integration of these two models of care.

This study has some limitations to mention. First, it was not possible to determine whether FBT+CBT produced greater improvements in ED symptoms and perfectionism than FBT only, as there was no comparison group. A larger trial with a FBT only comparison group, preferably with random assignment, is warranted to more fully test the efficacy of the intervention. However, it must be highlighted that perfectionism rarely resolves spontaneously and significant improvement in perfectionism was not found until after the CBT intervention occurred.

Another limitation was the small sample size, which has implications for study power and significance. Nevertheless, most analyses revealed significant changes in measures across treatment assessments, showing that the study had adequate power to detect the size of effects found here. Third, the CBT intervention itself may not have been the sole or only cause of changes in perfectionism, as weight restoration itself may
have contributed to changes in cognitive or emotional processing. Fourth, the lack of additional follow-up measures prevented an exploration of whether observed gains were maintained longer term, though it is positive that improvements in perfectionism were maintained in this study from the third to the fourth assessments. Finally one of the researchers had a dual role as a therapist within the study. To ensure this was not an issue, sessions were recorded and a random number of these were selected for review to assess treatment fidelity. There was also a standardized set of procedures that were followed in relation to the research and treatment, and both treatments were manualised.

In summary, the results suggest that, although the inclusion of the CBT perfectionism modules in FBT seem beneficial for reducing AN symptoms and perfectionism in most adolescents with AN in this study, a small group of participants remained symptomatic and required further treatment after this intervention. This suggests there is still much work needed to find the right combination and dose of therapy to ensure positive outcomes for all adolescents with AN. Nevertheless, the findings of this preliminary feasibility study suggest that FBT + CBT was associated with symptom improvement and reduced perfectionism for most adolescents with AN, providing promising treatment and future research directions.
References


Chapter Ten

General Discussion and Conclusion

FBT is an intensive outpatient treatment approach for adolescent AN, whereby the parents of AN sufferers are relied upon to be the agents of change in treatment. The goals of FBT include preventing unnecessarily lengthy hospitalisations and enabling recovery from AN in the home environment (Lock, 2010). According to many sources, FBT is an evidence-based treatment for adolescents diagnosed with AN (American Psychiatric Association, 2006; National Institute for Clinical Excellence, 2004).

Yet, despite FBT often being recommended as the first-line treatment for adolescent AN (Hay et al., 2014), the evidence for this sits within a relatively small number of randomised clinical trials, which have mainly been conducted by the developers of the model. These trials mainly consist of investigating delivery combinations and the treatment dose of FBT. Results are modest, yet they do suggest that involving family members in treatment supports favourable outcomes. More specifically, implementing the Maudsley approach and adaptations to treat AN in adolescents who are still in the early stages of an ED are promising. However, there are still a significant proportion of adolescents diagnosed with AN that do not recover and require additional treatment (Lock, Couturier, Bryson et al., 2006).

Overall, it remains difficult to argue against the idea that family-based interventions remain important approaches to treat ED, with Pike (1998) stating that “clinically it may be especially important to capitalise on the opportunity to work with the family at this time because it is often the case that family support and engagement in treatment diminishes as a function of duration of illness” (p. 471). Yet, it is also the case that more studies are needed to expand our current knowledge of when, how and why to implement a family-based treatment. In particular, research should address two main
criticisms that have been levelled at FBT research. The first criticism is that many published studies have methodological flaws or are exploratory or preliminary in nature (Downs and Blow, 2013). This was evident in the review of the literature conducted in Study One of this thesis.

A second criticism is that FBT has not been adequately compared to an individual therapy designed to be particularly suitable for adolescents. Individual approaches are vital to address the needs of families who cannot or will not engage in FBT or who request individual therapy (Krautter and Lock 2004). In addition, older adolescents and young adults who may not be nested within families or those who require on-going support outside of their families are similarly ideal candidates for individual support. Individual interventions may be less effective for the cognitively immature and those that have not quite developed a self reflective and insight oriented thinking style.

If research can identify added components that increase and expand the effectiveness of FBT or predict treatment response, then novel approaches can be developed with the potential to improve the treatment of AN. The hope is to ameliorate symptoms for more adolescents suffering from AN and reduce the chronicity of AN symptoms (Wonderlich et al., 2012).

The Current Thesis

The general purpose of the research presented in this thesis was to summarise what is known about the efficacy of family therapy in treating AN in adolescents and, building on this knowledge, determine whether FBT with an added component of ‘Perfectionism in Perspective’ (a nine-session CBT component) was associated with a reduction in perfectionism and a decline in AN symptoms among adolescent females. The specific study aims were to reduce ED symptoms and perfectionism, and improve
remission rates when qualitatively compared to the existing FBT literature. Other key clinical questions addressed in these studies were as follows:

1. Do adolescents have decreased AN symptoms, decreased perfectionistic thinking, and weight gain from pre- to post-treatment with FBT + CBT?

2. What proportion of adolescents met the criteria of full remission following treatment with FBT + CBT?

3. Is a greater decline in perfectionistic thinking associated with greater weight gain and more decline in ED symptoms from pre- to post-treatment?

4. Does a high pre-treatment level of perfectionism result in less positive outcomes (pre- to post-treatment AN symptoms, weight gain and return to normal weight)?

**Why FBT for Adolescents with AN?**

FBT was the foundation treatment for this research because it conforms to the current recommendations for the treatment of ED among adolescents and youth who live at home with their parents or other caregivers. These recommendations include:

1. the therapy must be provided by a multidisciplinary team, including a medical practitioner, dietician and mental health specialist

2. the therapy must address the medical, psychological, nutritional and social components of the disorder

3. the therapy should include and/or support family members and friends

4. family-based therapy should be offered to children and adolescents suffering from AN

5. outpatient treatment must last for at least six months

6. if the course of therapy does not lead to significant improvements—such as weight restoration and changes in dysfunctional thinking and behaviours—
more intensive forms of therapy should be considered and arranged (American Psychiatric Association, 2013; National Institute for Clinical Excellence, 2004).

FBT was also the foundation treatment because multiple trials using FBT for adolescent AN have reported clinical effectiveness of the treatment approach. Initial remission rates were as high as 60% (Russell et al., 1987), but with a tightening of the remission criteria to include a combination of physical and psychological variables the latest trials are indicating remission is around 22-33% at the end of treatment (Le Grange et al., 2016; Agras et al., 2014).

Another reason for the selection of FBT is the availability of a manual, as this is an enormous positive for clinicians (Lock & Le Grange, 2012) and dissemination of FBT has occurred around the world (Loeb et al., 2007; Paulson-Karlsson, Engström, & Nevonen, 2009). Further, recent studies (Goldstein et al., 2016; Madden et al., 2015) have revealed encouraging preliminary support that FBT is as effective when undertaken in a ‘real-world setting’ (such as a private practice clinic or community clinic).

**Why Add a Perfectionism CBT Module to FBT?**

A new direction in adolescent AN treatment has been the development of therapy adjuncts to FBT. These adjuncts are hypothesised to boost treatment effectiveness, while adhering to core FBT concepts (Loeb et al., 2007). The aim has been to improve the proportion of adolescents who benefit from treatment, and reduce the need for further treatment and the possibility of relapse. Of most relevance to the current research, poor treatment response in FBT has been linked to several variables, such as obsessionality, inflexibility and low tolerance to distress. These cognitive patterns often include perfectionistic, black-and-white thinking and fear of mistakes.
The authors of the FBT manual (Lock & Le Grange, 2013) speculated that adding to the current effective family-focused model to remedy some of these cognitive patterns would be preferable to replacing the manual. Given these recommendations, the present research selected a CBT add-on focused on perfectionism (FBT + CBT) and evaluated the outcomes of this FBT + CBT approach.

There were three other primary reasons that CBT focused on perfectionism was added to FBT in the present research. First, perfectionism is marked by repetitive and heightened self-critical thought processes focused on a need to achieve and feelings of failure (Shafran et al., 2002). These are problems that are found among the majority of adolescent females with AN—a high average level of perfectionism has been reported in research of females with AN, relative to healthy comparison subjects (Bastiani et al., 1995; Sutandar-Pinnock, Blake Woodsider, Carter, Olmsted, & Kaplan, 2003). Second, perfectionism has been found to impede treatment across a range of disorders, which suggests that it is a transdiagnostic process (Egan et al., 2011). Thus, its treatment could be beneficial for symptom reduction among AN sufferers, as well as being helpful for reducing symptoms of other disorders that are often comorbid with AN, such as depression and anxiety (Egan et al., 2011). Third, perfectionism is one set of critical and self-defeating thought processes that researchers and clinicians have argued should be targeted in ED treatment (Shafran et al., 2002), since perfectionism is considered both a risk factor for the development of ED symptoms and a factor that (if unaddressed) is associated with less responsiveness to treatment and greater chronicity of symptoms.

**Summary of Main Findings**

This thesis contained three studies. The first was a summary of the Couturier et al. (2013) meta-analysis on the efficacy of FBT combined with three of the most recent FBT trials (Agras et al., 2014; Madden et al., 2015; Le Grange et al., 2016). Study Two
was a case series of three adolescent females aged 16 to 17 years. The third was a cohort study of 19 females who completed assessment four times over the course of about one year of FBT + CBT treatment.

**Study One: Updated review of studies of the efficacy of family therapy.**

Building on from the most recent meta-analysis conducted by Couturier et al. (2013), the aim of Study One was to collate any new RCTs that had been conducted on the efficacy of FBT for adolescent AN with those included in the previous analysis. A review of the literature located three additional studies (Agras et al., 2014; Madden et al., 2015; Le Grange et al., 2016). Agras et al. (2014) compared FBT to systemic family therapy (SyFT). Madden et al. (2015) evaluated two pre-treatment conditions (brief vs. extended hospitalisation) prior to both groups receiving FBT. Le Grange et al. (2016) compared FBT vs. parent-focused treatment (PFT). In total, these studies included 347 adolescents ($M = 14.7$ to 15.5 years, 22 males). None of the three studies met the inclusion criteria of the rigorous meta-analysis of Couturier et al. (2013), as they all compared FBT to variants of family therapy and did not have an individual therapy stream. Thus the conclusions from Couturier et al. (2013) remain relevant, unfortunately there is no front runner in terms of adolescent AN treatment. What is promising is that at the 6- to 12-month follow-up do indicate that FBT is superior to individual treatment alone These results highlight that FBT is not to be abandoned, but that a way forward may be to augment FBT with individual treatment to improve remission rates and promote recovery for adolescents with AN.

**Study Two: Case series.** Study Two was a case series of three adolescent females (aged 16 to 17) diagnosed with AN. The three adolescents took part in FBT + CBT focused on perfectionistic thinking and related maladaptive thought patterns. The piloted treatment involved the standard 20 FBT sessions over a 12-month period, with
the addition of nine weekly CBT sessions with each adolescent. These CBT sessions specifically addressed perfectionism and fears, and were delivered concurrently with phase two of FBT.

The results of this case series supported the existing evidence for the effectiveness of FBT (Le Grange et al., 2016; Madden et al., 2015), with one participant achieving 95% EBW and Eating Disorder Examination (EDE) scores within the mean at the end of treatment to indicate full recovery, and the other two patients were very close to achieving this level of EBW (approximately 3% below the 95% level). Also noteworthy is that all three adolescents reported very high levels of perfectionism across a number of measures completed at pre-treatment and, on average, indicated significantly reduced levels of perfectionism and inflexible and rigid thinking immediately after the CBT component and by the end of treatment, across most measures.

The participants were taught cognitive skills in the CBT intervention, which were designed to help the adolescents challenge and reduce obsessional thinking related to their AN, and develop more helpful rules and assumptions about their body shape. Specifically, the CBT modules were designed to assist adolescents with AN to be less critical in relation to evaluating their weight and striving for a perfect body shape, which may reduce the likelihood of future relapse. Therefore, a positive outcome was a decrease in perfection, which involved relaxing their unrelenting high standards and reducing perfectionistic behaviours by adjusting unhelpful rules and assumptions.

**Study Three: Cohort study.** Study Three was a single cohort study of FBT + CBT, implementing the same program as used in study one. The participants were 21 female adolescents with AN. Each adolescent completed four assessments over one year of treatment. Using intent-to-treat analyses, the majority of participants reported
significant improvement in AN symptoms and improved weight. Further, there was a significant decrease in perfectionism by the end of phase two of FBT (during which CBT was also completed) and at the end of treatment. Of the 19 completing participants, more than one-half met criteria for reliable improvement on all measures (except SPP), and all participants met criteria for reliable improvement in weight.

The results were also optimistic for remission, with 57% of participants in remission by the end of treatment. This rate of remission appears higher than the 33% and 46% reported in some of the latest trials of FBT (Agras et al., 2014; Lock, Le Grange, Agras, Moye et al., 2010; Madden et al., 2015). Thus, the addition of a CBT component focused on perfectionism appears to help adolescents reduce their perfectionism and is associated with reduced AN symptoms. In addition, the positive weight gains for all participants provide some further optimism regarding the feasibility of FBT + CBT for adolescents with AN. These are promising outcomes at a time before AN has become a chronic pattern of behaviour (usually by adulthood), where treatment response becomes poor and dropout from treatment is high (DeJong, Broadbent, & Schmidt, 2012; Treasure & Russell, 2011).

Decreases in AN symptoms were correlated with decreases in perfectionism in study two, and perfectionism has been argued to be a transdiagnostic process (Egan et al., 2011). Thus, the findings of the current study could also be interpreted to indicate that a specific focus of treatment on reducing perfectionism — including decreases in self-criticism, rigid goals and feelings of failure — could produce decreases in AN symptoms. Conversely, it may be the case that the reduced AN symptoms lead to improvements in biased and rigid perfectionistic thinking and behaviours. For example, some research has shown that cognitive changes can be an outcome of weight gain (Moser et al., 2003).
Hatch, Madden, Kohn, and Clarke (2010) examined the change in cognitive functioning in adolescents with AN as associated with weight gain in a repeated measures design. Once substantial weight was gained, the individuals previously diagnosed with AN had not only improved relative to their own performance, but had also improved relative to the controls. They concluded that the observed deficits at baseline testing were a result of starvation and malnutrition, which then resolved with refeeding and weight gain. However, it was also suggested that attending mandatory schooling as part of patients’ admission may also have assisted their return to premorbid levels of cognitive functioning. On general psychological measures after weight gain, the participants with AN exhibited a significant decrease in levels of anxiety, depression and stress, but not obsessionality. Understanding the relationship between obsessional symptomology and weight restoration needs further consideration to improve treatment and longer-term outcomes; however, this conclusion may contribute to the idea that obsessionality represents a unique psychiatric feature that needs to be considered independently.

**Future Directions for FBT and CBT for Perfectionism**

The results of Study Two and Study Three add to the literature on FBT, and further contribute the finding that a CBT component focused on perfectionism may provide some added benefits for AN sufferers by improving their perfectionistic biases. It could be argued that it was the CBT addition to FBT that contributed to the remission rate in the present study of 57%, as compared to recent trials that have reported remission rates as low as 33 to 46% for FBT alone (Agras et al., 2014; Madden et al., 2015). However, the results showed that the inclusion of the CBT perfectionism modules did not alleviate the symptoms of all adolescents, and some required further treatment following FBT + CBT. More specifically, 43% of adolescents with AN
attained only partial remission and 21% of participants in the FBT + CBT pilot cohort study required further intervention (such as individual treatment). Thus, there is still the question of what is needed to improve outcomes for a large subset of adolescents diagnosed with AN. Future research is required to continue to address this question. In this regard, the results of the current study align with the major FBT RCTs; however, of note in these trials is that, at the 12-month follow-up, the patients continued to improve, with reports of a 40% to 49% remission rate (Agras et al., 2014; Madden et al., 2015), which is still lower than the remission rate found in the present research directly post-treatment with FBT + CBT. Nonetheless, there is still much work that needs to be done to determine the right combination of therapy to ensure positive outcomes for all adolescents with AN.

**Possible ways to improve the success of treatment for adolescent AN.** One way to determine how to improve treatment outcomes and extend positive outcomes to a larger proportion of adolescents with AN might be to better identify the mechanisms that explain why current treatments are effective, and to place more focus on these treatment components in future interventions and research trials. For example, Hay (2012) suggested that ‘the field would benefit from further research efforts investigating what is common amongst effective therapies for adolescent AN and modifications or variations of FBT that improve its accessibility and broaden its applicability’ (p. 46). In other words, understandings of how treatment works can be enhanced by examining mediators (ways to enhance treatment effectiveness) and moderators (which treatment is best for which patient).

Few FBT studies have examined the mechanisms responsible for improvements in AN symptoms among adolescents. One debate about mechanisms has focused on whether the effectiveness of FBT is a consequence of parental involvement and parents’
lead role in refeeding the adolescent, or whether improvements are due to major changes in intra-familial relationships more generally (Fairburn, 2005). Godart et al. (2012) compared a program involving only the patient and parents, with one involving the entire family that focused on family dynamics (and not on eating behaviours). Their results were interesting in that three times more adolescents achieved healthy weight and resumed menses in the whole family intervention than in the parent–adolescent intervention. There was no difference between groups for eating behaviours and attitudes, social adjustment or relapse.

One limitation of this previous study was that the parents were in charge of refeeding in either intervention. In the intervention with patients and parents involved, the parents were advised to be supportive, but to leave decisions around food and eating to the adolescent. The parents were advised to raise concerns only during therapy sessions and (as described above) the whole family intervention did not focus on eating behaviours, which makes it difficult to draw conclusions around parental involvement in re-nourishing their child. Thus, there is more work to do to identify the mechanisms of change in FBT.

Other family factors might also be important to consider. In one study, adolescents with AN living in non-intact families (single parent, divorced) achieved better outcomes with longer treatment in terms of improvements in ED-specific psychopathology than did adolescents living with two parents (Lock et al., 2005). High levels of parental criticism are a predictor of adolescents’ dropout from FBT prior to completion (Szmukler et al., 1995), and it has been argued that adolescents whose parents have high expressed emotion may benefit more from FBT treatment (Le Grange, Hoste, Lock, & Bryson, 2011). A comorbid psychiatric diagnosis and being of
older age have also been associated with lower rates of remission among adolescents and young adults receiving FBT for AN (Lock, Couturier, Bryson et al., 2006).

A second way to identify potential approaches to compliment FBT would be to draw from what is known from developmental research on ED and related concerns (such as poor body image) in order to focus on the strongest correlates of the onset of these symptoms in adolescence (or even before). Body dissatisfaction is a robust risk factor for disordered eating and is thought to be especially problematic in the presence of high levels of perfectionism (Wade & Tiggemann, 2013). Parents are known to shape the development of a wide range of risk and protective factors for body dissatisfaction and ED in their children (Rodgers & Chabrol, 2009). Parents are salient role models who communicate attitudes and display behaviours relating to food and body image in front of their children, or even directly tease them about their appearance (Joyce & Zimmer-Gembeck, 2009; Mastro, Zimmer-Gembeck, Webb, Farrell, & Waters, 2016; Paxton, Eisenberg, & Neumark-Sztainer, 2006). Given their role in shaping these views, there could be value in alerting parents to their behaviours, and providing assistance to parents to adjust their behaviours, with the goals of reducing parents’ teasing and child criticism, pressure to be thin, or pressure to diet as a part of ED interventions (Corning, Gondoli, Bucchianeri, & Salafia, 2010; Hart, Cornell, Damiano, & Paxton, 2015).

Further to this, a third possible way to identify what might improve treatment outcomes is to focus on what predicts dropout or lack of response. Some predictors identified include comorbid diagnosis and problematic family behaviours (such as parental criticism) (Duclos et al., 2014; North, Gowers, & Byram, 1997; Pham-Scottez et al., 2012). The finding that socially prescribed perfectionism did not change in the research reported here may relate to the adolescents’ perceptions that their parents have perfectionistic expectations of them, which may generalise to perceptions that other
people have perfectionist expectations of them (Flett et al., 2002). Future research could include parents participating with the adolescent in the CBT sessions. The parents could then actively address their own perfectionism and support the adolescent at the same time to reduce their levels.

**FBT + CBT applicability and acceptability.** FBT + CBT was a feasible and acceptable treatment for almost all adolescents and parents included in the present research. Only two adolescents did not complete treatment. One of the adolescents who did not complete treatment required multiple medical and psychiatric admissions related to the severity of the illness and comorbid diagnoses. The second adolescent and her parents requested shifting to individual treatment, rather than continue with FBT. This indicates that FBT is suited to most families, but certainly not all, as some struggled with the intensity and expectations of the treatment (Lock et al., 2005). The family who selected not to undertake FBT + CBT identified difficulties taking charge of food and eating, and having the entire family attend sessions. FBT is a huge commitment of family time and some families find it too burdensome. This again suggests that a focus on building family involvement and addressing parents’ own concerns and biases might be beneficial as an enhancement to FBT. An individual alternative could be CBT-E, given that recently this has demonstrated effectiveness in the adolescent AN cohort (Delle Grave et al, 2015)

**Treatment intensity.** The positive outcomes of the current feasibility study might be explained by the intensity of involvement with the adolescent. FBT + CBT was more intensive than FBT alone (as used in standard practice). Intensity of treatment has been evaluated as a potential moderator of treatment in FBT studies. Specifically, a study of a short (10 sessions) compared with a long (20 sessions) version of treatment revealed that adolescents with AN who presented with high levels of eating-related
obsessionality and adolescents in non-intact families had better outcomes with a longer course of FBT than a shorter course (Lock et al., 2005).

In the present study, families (on average) received 23 FBT sessions, plus nine individual CBT (perfectionism) sessions. Thus, the greater number of sessions (32 sessions total, on average) and whether they were with family members or with adolescents alone could account for the higher remission rate found in the present study, when compared to some previous studies of FBT. Moreover, the fact that a greater number of sessions have been found to produce more positive outcomes among ED sufferers with more eating obsessionality (Lock et al., 2005) suggests that the more intensive treatment of 32 sessions (rather than adding CBT in particular) could explain changes in thinking patterns consistent with perfectionistic thinking. For example, it may be that 32 sessions of FBT (or simply adding sessions, regardless of the focus) could have resulted in outcomes similar to those found in the present study. Future research could test this possibility.

**Future Directions in the Treatment of AN**

There are a number of new treatments emerging that focus on either the cognitive or emotional correlates of AN onset and maintenance. These new approaches include treatments that focus on cognitive rigidity or emotion dysregulation. Others expand the FBT approach to include a greater focus on improving relationships in the families of adolescent AN sufferers. All these new directions show promise, but have received little research attention to date.

**Treatment to reduce cognitive rigidity.** Cognitive rigidity is one cognitive process that has been theoretically linked to perfectionism (Egan, Piek, Dyck, & Rees, 2007). Cognitive rigidity refers to difficulties with shifting or changing mental strategies and rules according to alternating contextual demands (Tchanturia, Davies, &
Cognitive remediation therapy (CRT)—a therapy developed to specifically focus on cognitive rigidity—is gaining traction in the adult AN domain for targeting cognitive rigidity (Tchanturia et al., 2007). Similar to conceptualisations of perfectionism and the ‘Perfectionism in Perspective’ modules, CRT conceptualises patients with AN as inflexible, rule-bound and detail-oriented, and argues that these cognitive styles make the largest contribution to the development and perseverance of the illness. CRT commences with targeting thinking processes by using cognitive exercises and games, rather than focusing on ED symptoms.

Tchanturia and Lock (2011) suggested that CRT might be useful for the adolescent AN population because it targets increasing cognitive flexibility at a time of biological and cognitive development. Further, Cwojdzińska, Markowska-Regulska, and Rybakowski (2009) published a case report on CRT in an adolescent AN patient. The results indicated that an improvement in the level of psychopathological symptoms (Eating Attitudes Test 26 [EAT-26] and Beck Depression Inventory) was observed after CRT completion. These findings raise the possibility that adding a CRT module prior to FBT may be equally or even more effective than waiting to provide CRT in FBT phase two. One future area for research is to not only compare the outcomes of FBT + CBT as designed here to FBT only, but to also compare it to CBT + FBT with CRT provided prior to the start of FBT.

**Emotion dysregulation and AN treatment.** Federici, Wisiewski, and Ben-Porath (2012) suggested that dialectical behaviour therapy (DBT) (Linehan, 1993) and FBT can be integrated when patients are showing signs of problems with emotional dysregulation (such as suicidal thoughts or deliberate self-harm) and/or have personality disorder features (such as borderline personality disorder). DBT is designed to address deficits in interpersonal relationships, affect regulation and impulse control by teaching...
specific adaptive skills in the areas of mindfulness, distress tolerance, emotion regulation and interpersonal effectiveness (Linehan, 1993). Moreover, the ideas behind DBT suggest that tailoring FBT add-ons to the particular needs of AN sufferers could be appealing to families and could enhance effectiveness. This could be examined in future research.

The use of DBT in the treatment of ED arose from the theory that ED behaviours are used as maladaptive methods of affect regulation, and that ED behaviours could be reduced if patients learned more adaptive methods to manage their distress (Telch, Agras, & Linehan, 2001). DBT and FBT are both behavioural, change-oriented treatment approaches that focus on addressing symptoms in a non-judgemental manner and advocate for empowerment of the client and family (Wisniewski & Ben-Porath, 2015).

DBT treatment modified to address ED in adults has demonstrated some efficacy, especially for patients with comorbid borderline personality disorder (Ben-Porath, Federici, Wisniewski, & Warren, 2014; Chen, Matthews, Allen, Kuo, & Linehan, 2008). However, evidence of the effectiveness of applying DBT for the treatment of adolescent ED is still quite limited. The early results from pilot studies suggest that DBT may be helpful particularly for adolescents with a history of chronic treatment failure and severe life-threatening and therapy-interfering behaviours (Anderson et al., 2015; Federici, Wisniewski, & Ben-Porath, 2012; Johnston, O’Gara, Koman, Baker, & Anderson, 2015).

**New approaches to family involvement in adolescent AN treatment.**

Standard FBT has been described as not sufficiently intensive to meet the needs of a subgroup of the most severely ill patients with AN. However, the only other option available at the present time is inpatient treatment, which has multiple limitations,
resulting in the view that it is not effective and beneficial because it can increase weight without providing the level of assistance that can empower families and change long-term behaviours (Toulany et al., 2015). Multiple family therapy (MFT)—originally pioneered by Laqueur, La Burt, and Morong (1964) for the treatment of schizophrenia—has been adapted to ED treatment as a more intensive family-based treatment approach that focuses on ways to use the combined resources of families to improve family communication, learn by analogy, and expand family members’ social repertoires.

The usual format of MFT is similar to most group therapies (such as weekly or fortnightly meetings); however, more intensive formats have also been developed, in which groups of families meet for whole days sometimes over an extended period of time as part of a day treatment program (Slagerman & Yager, 1989). The overarching aim of MFT is to enhance the speed and reach of change by bringing together patients and families with shared experience.

Although the ideas are promising and group therapy is widely used, evidence of the effectiveness of MFT for treating AN (or ED more generally) is limited. Nevertheless, there have been a number of descriptive studies (Dare & Eisler, 2000; Hollesen, Clausen, & Rokkedal, 2013; Marzola et al., 2015) that have indicated promising improvements in AN symptoms, low dropout rates and high levels of patient and family satisfaction. Two recent studies evaluated MFT as a treatment for adolescent with AN. Gabel, Pinhas, Eisler, Katzman, and Heinmaa (2014) compared MFT with TAU, which included medical monitoring, nutrition therapy and a combination of psychoeducation and individual supportive family therapy. The results indicated that the MFT group had a statistically significant higher per cent healthy weight than the TAU group (99.6% [± 7.27%] v. 95.4 [± 6.88]) and that their measures of disordered eating symptoms and depression improved significantly after MFT.
Voriadaki, Simic, Espie, and Eisler (2015) described a small MFT case series of five families of adolescents with AN. They reported that the group format of MFT allowed the families to overcome isolation and decreased feelings of stigmatisation through creating new and multiple perspectives through which the patients and families could learn from one another. The experience of communality could further reduce feelings of guilt and the burden on these families, leading to the better recovery of the patients (Voriadaki et al., 2015).

Another intensive treatment option was developed by the team at Westmead Children’s Hospital (Sydney) for families responding poorly to standard FBT because of complex family dynamics, the severity of the illness or their remote location (Wallis et al., 2013). The family admission program is a two-week, hospital-based residential program aimed at increasing the level of therapeutic intensity, compared to standard outpatient FBT. It was designed as a step down from usual inpatient care or a step up if outpatient treatment is stalling. The program aims to reduce the length of stay in the acute inpatient environment, reduce readmission rates and improve outcomes for patients and families.

Wallis et al. (2013) described a case study of a 14-year-old adolescent with a three-year history of AN and four previous hospital admissions, who completed the family admission program. At the conclusion of the two-week program, the parents reported increased confidence around how to refeed their daughter and manage AN behaviours, resulting in weight gain. The family were then transitioned to outpatient standard FBT.

For older adolescent patients and those who do not have a favourable outcome with FBT, the Maudsley Model of Anorexia Nervosa Treatment for Adults (MANTRA) (Schmidt & Treasure, 2006) may be a viable option. With a combined focus on intra-
and interpersonal factors, this model is a radical departure from classical CBT models for adult AN, which focus on weight and shape concerns as the central psychopathology of the disorder. MANTRA is centred on a patient manual and encompasses four main maintaining factors:

1. a thinking style characterised by rigidity, detail focus and a fear of making mistakes
2. an avoidant emotion processing and relational style
3. positive beliefs about the use of AN for the person (such as pro-anorexia beliefs)
4. the response to the illness by close others, characterised by high expressed emotion and enabling and accommodation of the illness (Schmidt et al., 2013).

These factors are central to the maintenance of AN and need to be addressed in treatment.

Evidence for the use of MANTRA is promising, yet quite preliminary. An RCT of adult outpatients diagnosed with AN or Eating Disorder Not Otherwise Specified (EDNOS) \((N = 72)\) compared MANTRA (Schmidt et al., 2012) to specialist supportive clinical management (SSCM; McIntosh et al., 2005). The study resulted in significant improvements in weight, ED symptoms, depression and anxiety; however, the two treatments did not differ in their effectiveness.

Building on from this initial study, researchers (Schmidt et al., 2015) conducted an RCT (Maudsley Outpatient Study of Treatments for Anorexia Nervosa and Related Conditions [MOSAIC]) to evaluate the efficacy of MANTRA compared with SSCM in a multicenter, two-arm trial of 142 adult outpatients with AN. In both treatments, participants had significant improvements in BMI, ED psychopathology, affective
symptoms and psychosocial impairment at both 6 and 12 months post randomisation, with neuro-cognitive and social–cognitive change less consistent. However, there was no statistically significant difference in outcome between the two treatments.

The MOSAIC study was then followed up two years later to assess whether gains were maintained. Approximately 73% of the original participants were included in the follow-up. Results reported little difference between groups in BMI, ED symptomatology, distress levels, and clinical impairment; improvements were maintained or escalated further. The estimated mean BMI increase from baseline to 24 months was 2.16 kg/m(2) for SSCM and 2.25 kg/m(2) for MANTRA (effect sizes of 1.75 and 1.83, respectively). Most participants (83%) did not require any additional intensive treatments (e.g., hospitalization). Both treatments have value as outpatient interventions for patients with AN.

**Clinical Recommendations for the Treatment of Adolescent AN**

Family involvement for adolescents with AN is supported by clinical guidelines and positive results from RCTs (Agras et al., 2014; Hay et al., 2014). What this means at a practical level is that further dissemination of this intervention is the responsibility of tertiary level services to ensure the uptake flows down to primary level services. Further, at a local level, it is the responsibility of the clinicians working in the ED field to be abreast of what is occurring in the research, and to ensure that evidence-based therapies are offered or, if not, making steps to gain access to training and supervision in evidence-based treatment.

Regardless of what treatment is being adopted, weight restoration and minimising the risk of physical complications are the first priorities in AN treatment. Thus, the first step in treatment usually involves re-nourishment. According to Kohn, Madden, and Clarke (2011), this step can afford to be more aggressively implemented
in adolescents (such as via nasogastric or oral supplements). Although inpatient admission for moderately to severely ill patients with an ED is the treatment setting of choice, it is extremely costly and has high risk of relapse and readmission. There also needs to be a continuum in the range of treatment settings, options and services available for ED patients from inpatient to outpatient, as well as step-up or step-down options, such as day programs and partial residential services. Drawing this information together leads to the conclusion that future investment in a ‘stepped care’ approach is recommended, by realising that patients might need to progress both up and down (sometimes repeatedly) through service delivery levels and long-term follow-up in order to mitigate relapses. Day programs based in the community offer early intervention and a subacute alternative to hospital care, and show evidence of capacity for good clinical and personal recovery outcomes (Goldstein et al., 2011).

The research implications of this thesis include adding to the psychological knowledge base by addressing the distinctive treatment needs of this unique group. Further findings from this research will have preliminary implications for the content of the therapeutic interventions used by clinicians when treating adolescent AN. It is hoped that the findings of the present studies will provide clinicians with knowledge regarding perfectionism among AN sufferers, and guidance on how to consider that perfectionism may have a profound negative effect on symptom progression and could deserve close attention during FBT or other treatments. Overall, perfectionism seems important to address directly in any AN treatment. Thus, this study suggests that clinicians directly target perfectionism as one primary cognitive bias that could be a barrier to change in an established effective intervention. The aim should be to circumvent the risk of developing an enduring illness, with its associated poor prognosis, while also reducing the incident of relapse that has been linked to post-treatment elevated levels of
perfectionism and cognitive rigidity. This research provides preliminary evidence that FBT + CBT is acceptable as a treatment and has outcomes similar to or better than other FBT trials, while also demonstrating that symptom and perfectionism improvements are associated with each other.

**Limitations**

This study has some limitations to mention. First, it was not possible to determine whether FBT+CBT produced greater a remission rate or greater improvements in ED symptoms and perfectionism than FBT only, as there was no comparison group and results could be the result of the passage of time. However, outcomes were generally as positive or more positive than previous trials of FBT and other treatments. A larger trial with a FBT only comparison group, preferably with random assignment, is warranted to more fully test the efficacy of the intervention. A second limitation was the small sample size, which has implications for power to find significant effects. For example, many moderate sized effects were not found to be significant, but a larger trial might reveal further significant improvements from FBT + CBT.

Third, there is a risk of allegiance bias, which refers to results being contaminated or distorted by the investigators’ theoretical or treatment preferences (Luborsky, Singer, & Luborsky, 1975). The primary researcher had a dual role of a therapist and a researcher. To ensure this bias was mitigated, therapy sessions were recorded and a random set of these were selected and viewed by another therapist to assess fidelity. There was also a standardised set of procedures that was followed in relation to the research and treatment. Both FBT and CBT for Perfectionism were manualised treatments, also; the use of therapy manuals allows for enhanced control over the fidelity of treatment.
A fourth limitation is that the CBT intervention itself may not have been the sole or only cause of change in perfectionism, as weight restoration itself may have contributed to changes in cognitive or emotional processing. Finally, a fifth limitation is the lack of follow-up beyond just post-treatment with FBT + CBT, which prevents an examination of whether observed gains were maintained longer term, though it is positive that improvements in perfectionism were maintained in this study from the third to the fourth assessments.

**Methodological Implications to Consider for Future Research**

One clear future research direction that emerged from the present study results is the need for an RCT and long-term follow-up of participants. More specifically, an RCT of standard FBT compared to FBT + CBT, and perhaps CBT-E to FBT, needs to be undertaken to more firmly establish the effect of FBT + CBT on AN outcomes among adolescents. In addition, longer follow-up studies need to be conducted to ascertain whether the improvements in perfectionism and AN symptoms are maintained over time. In addition, randomisation based on the level of pre-treatment perfectionism might need to be implemented so that moderator analyses can be completed to determine whether reductions in perfectionism protect against relapse.

Although such an RCT is needed, the study design used here provides important preliminary information to support FBT + CBT in practice. RCTs for the AN population present a number of challenges, including recruitment depicting a small sample of the population (due to the relatively low prevalence rate), which affects study power and generalisability. A way to overcome this is the use of multiple sites; however, this solution raises its own set of issues (such as increased cost and differences in intervention delivery). Another problem is retention—retention rates are low in adult trials, but are somewhat better in adolescent studies (possibly due to parental influence).
According to Watson and Bulik (2013), "drop-out can undo the effects of randomisation and make groups no longer comparable. Although intent-to-treat analysis can be used, drop-out may still introduce bias, as assumptions about participants’ endpoint outcomes are made to impute missing data" (p. 2478). This has led for calls to focus on treatment refusal and dropout as a priority (Halmi, 2005).

A second direction for future research is to encourage those who provide AN treatment in health and community settings to conduct their own effectiveness studies, in a manner similar to the approach taken here. While RCTs are extremely valuable in appraising the causality between an intervention and outcome, and are critical guides to treatment choice, they only capture a fraction of the treatments being delivered in clinical community settings across the world. What is far more concerning is that RCTs tend to be conducted by tertiary centres, with experts offering treatment and interventions. Thus, questions are raised around the potentially vast differences between the treatment that occurs in a routine clinical setting compared to the treatment in these highly regarded and expert tertiary centres. This argument is not about abandoning large RCTs, but rather about ensuring that there is balance in how treatment interventions are conducted and evaluated. RCTs should be complimented and supplemented by ‘real-life studies’ in the form of qualitative data, single case reports and case series. There is such a richness of information that can be derived from these studies that goes beyond the difference in pre- to post-treatment outcomes of RCTs to reveal deeper-level changes that occur on a day-to-day, week-to-week or month-to-month basis.

Such issues lead to a third direction for future research—the use of more in-depth qualitative research designs to understand the issues that adolescents with AN currently face in their day-to-day family and school lives. A strength of the current novel clinical study is that it combined a bottom-up (patient and clinician experience-
led) and top-down (theory-led, data-driven and quantitative) approach. Clinical observations of patient and treatment outcome characteristics similar to those observed in this research, namely that obsessionality and cognitive rigidity was most frequently driven by perfectionism, lead to questions about how improvements to FBT could result from additional interventions.

**Conclusion**

The findings of the current thesis demonstrate that a short-term individual therapy approach (nine treatment sessions) added to the standard FBT sessions can produce clinically significant improvements in various components of perfectionistic behaviour in an adolescent AN cohort. It is also anticipated that the implications of this research will contribute to improvements in effectively meeting the needs of this unique patient group and achieving better outcomes.

Questions remain regarding the effectiveness of family therapy compared to other treatments and of FBT + CBT compared with the typical intervention format delivery of FBT only. The overall aim of the CBT component implemented in the current work was on reducing perfectionistic thinking (cognitive rigidity and continued feelings of failure). This did not mean eliminating striving to meet personal standards and motivation to do well, but rather to eliminate the critical self-evaluation being exclusively based on meeting personal standards, and high levels of self-criticism when these standards are not met.

It is important to stress that it was not possible to determine explicitly that it was the CBT intervention for perfectionism that produced the decrease in perfectionism that was found here. However, what is known is that perfectionism rarely resolves spontaneously. Thus, it is plausible to suggest that FBT + CBT for perfectionism shows promise, and that these findings may contribute to the building evidence that
perfectionism is amenable to change. Overall, the present research provides a clear
direction for research to improve therapeutic treatment for adolescents diagnosed with
AN.
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Appendix A: Referral Pathway for Maudsley Family-based Treatment for Children and Adolescents with EDs

Pathway 1

Self-referral, GP, health professional, school, etc.

CYMHS Access Team

Paediatric admission required

Consultation Liaison Psychiatry Service (CLPS)

Eating Disorder Program (EDP) assessment of suitability for Maudsley FBT

Maudsley treatment indicated & accepted by young person & family

Maudsley therapist allocated

Continuing Care Team CM allocated

EDP commences Maudsley treatment

PEDAT review

Conclusion of Maudsley treatment

CM assesses further treatment needs & prepares for discharge

Maudsley treatment not indicated & not accepted by young person & family

Continuing Care Team CM allocated

Other treatment options offered by CCT

Discharge
Appendix B

Information Sheet

Placing the Focus on Perfectionism in Female Adolescent Anorexia Nervosa: Augmented Maudsley Family-based Treatment (MFBT + CBT)

INVESTIGATORS
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Supervisors
This research is being conducted by Kim Hurst as part of the requirements for a PhD in psychology at Griffith University. The research is being supervised by Professor Melanie Zimmer-Gembeck and Dr Tracy Ludlow.

Purpose
The aim of this project is to examine the efficacy of an intervention designed to target and subsequently reduce levels of perfectionism and anorexia nervosa (AN) symptoms through an augmented Maudsley family-based treatment (FBT) incorporating components of cognitive behaviour therapy (FBT + CBT). The project is being completed as a component of Kim Hurst’s Research Higher Degree. An outline of the research project is available upon request.

Dual role
Kim Hurst will act in the role of both student researcher and the therapist providing treatment.

Participation
FBT requires participation from all family members for approximately one year. The FBT model is structured into about 20 family 60-minute sessions that take place during the course of a year. Treatment is broken up into three distinct phases. Phase one involves weekly appointments, phase two involves fortnightly appointments and phase three is monthly appointments. CBT requires your daughter to participate in four individual sessions of CBT targeting perfectionism during phase two of treatment. In addition, you will be asked to complete some questionnaires at three intervals during therapy. All your responses will be confidential. Also, we will store all information for
this research without identifying information, so that your individual information is not identifiable.

**Benefits**
The findings from this research will contribute to improvements in the therapeutic interventions used by clinicians when treating adolescents with anorexia nervosa. The Maudsley approach empowers parents to help their child recover from this life-threatening illness, rather than having them watch passively from the sidelines. Specifically, it is designed to assist your daughter to recover from anorexia and to have improved wellbeing and physical functioning. Other aspects of the intervention are designed to improve family relationships.

**Potential risks**
The risks of this project are minimal and are no greater than those involved in any treatment for anorexia nervosa. However, as in typical in treatment for anorexia nervosa, some participants may experience distress during treatment. The management of this distress is a typical part of the treatment. You and your daughter will have access to a therapist and referral sources.

**Confidentiality**
All information regarding your family will be confidential. Participation is entirely voluntary and you are free to withdraw at any time. Your withdrawal will have no repercussions for your relationship with the Child and Youth Mental Health Service or the School of Psychology, Griffith University. Griffith University requires that any research participant with a complaint concerning the manner in which a research project has been conducted be encouraged to provide feedback to the university. Feedback may be given to the researchers or an independent person, if this is preferred.

**Voluntary participation**
Your participation in this research is voluntary and any decision to take part or not take part will in no way affect your daughter’s routine treatment. You and your daughter are free to withdraw at any time, without comment or penalty.

**Video taping**
All sessions will be recorded during the course of augmented MFBT + CBT. This will be done so that session recordings can be reviewed to ensure that the treatment is of the highest quality. The reviewing process will be conducted by a recognised MFBT therapist who is not a part of the research team.

**Retention of data**
Under Queensland Health policy, clinical records for minors are to be retained for a minimum of 10 years after attaining adulthood. All patient information relating to a research project shall comply with the Queensland Health Retention and Disposal Schedule and align with the *National Statement on the Ethical Conduct of Human Research 2007* and *Australian Code for the Responsible Conduct of Research 2007*.

**The ethical conduct of this research**
Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Human Research*. If potential participants have any concerns or complaints about the ethical conduct of the research project, they should contact the
Queensland Health conducts research in accordance with the *National Statement on Ethical Conduct in Human Research*. If potential participants have any concerns or complaints about the ethical conduct of the research project, they should contact the Queensland Health Office of the Human Research Ethics on ph: (07) 5519 8010 or email: GCHEthics@health.qld.gov.au. In addition, the Patient Liaison Service (ph: (07) 5519 8288 or 0414 278 005) can provide information and assistance if required.

**Feedback to you**
At the conclusion of the research, a summary of the overall outcome will be provided to you, should you request this. Please contact one of the researchers at any time for more information.

**Privacy statement**
Queensland Health is committed to providing you the highest levels of service. Protecting your privacy is important. The Child and Youth Mental Health Service (CYMHS) is a Queensland state statutory body and as such must comply with the Information Privacy Principles (IPPs) contained in Queensland Government Information Standard 42. CYMHS is also subject to the *Freedom of Information Act 1992*. 
Placing the Focus on Perfectionism in Female Adolescent Anorexia Nervosa: Augmented Maudsley Family-based Treatment (MFBT + CBT)

INFORMATION SHEET (Adolescent)

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Supervisors
This research is being conducted by Kim Hurst as part of the requirements for a PhD in psychology at Griffith University. The research is being supervised by Professor Melanie Zimmer-Gembeck and Dr Tracy Ludlow.

Purpose
The aim of this project is to examine the efficacy of an intervention designed to target and subsequently reduce levels of perfectionism and anorexia nervosa (AN) symptoms through an augmented Maudsley family-based treatment (FBT) incorporating components of cognitive behaviour therapy (FBT + CBT). The project is being completed as a component of Kim Hurst’s Research Higher Degree. An outline of the research project is available upon request.

Dual role
Kim Hurst will act in the role of both student researcher and the therapist providing treatment.

Participation
FBT requires participation from all family members for approximately one year. FBT model is structured into about 20 family 60-minute sessions that take place during the course of a year. Treatment is broken up into three distinct phases. Phase one involves weekly appointments, phase two involves fortnightly appointments and phase three is monthly appointments.

CBT requires your daughter to participate in four individual sessions of CBT targeting perfectionism during phase two of treatment. In addition, you will be asked to complete some questionnaires at three intervals during therapy. All your responses will be confidential. Also, we will store all information for this research without identifying information, so that your individual information is not identifiable.
Benefits
The findings from this research will contribute to improvements in the therapeutic interventions used by clinicians when treating adolescents with anorexia nervosa. The Maudsley approach empowers parents to help their child recover from this life-threatening illness, rather than having them watch passively from the sidelines. Specifically, it is designed to assist your daughter recover from anorexia and have improved wellbeing and physical functioning. Other aspects of the intervention are designed to improve family relationships.

Potential risks
The risks of this project are minimal and are no greater than those involved in any treatment for anorexia nervosa. However, as in typical treatment for anorexia nervosa, some participants may experience distress during treatment. The management of this distress is a typical part of the treatment. You and your family will have access to a therapist and referral sources.

Confidentiality
All information regarding your family will be confidential. Participation is entirely voluntary and you are free to withdraw at any time. Your withdrawal will have no repercussions for your relationship with the Child and Youth Mental Health Service or the School of Psychology, Griffith University. Griffith University requires that any research participant with a complaint concerning the manner in which a research project has been conducted be encouraged to provide feedback to the university. Feedback may be given to the researchers or an independent person, if this is preferred.

Voluntary participation
Your participation in this research is voluntary and any decision to take part or not take part will in no way affect your routine treatment. You and your family are free to withdraw at any time, without comment or penalty.

Video taping
All sessions will be recorded during the course of augmented MFBT + CBT. This will be done so that session recordings can be reviewed to ensure that the treatment is of the highest quality. The reviewing process will be conducted by a recognised MFBT therapist who is not a part of the research team.

Retention of data
Under Queensland Health policy, clinical records for minors are to be retained for a minimum of 10 years after attaining adulthood. All patient information relating to a research project shall comply with the Queensland Health Retention and Disposal Schedule and align with the National Statement on the Ethical Conduct of Human Research 2007 and Australian Code for the Responsible Conduct of Research 2007.

The ethical conduct of this research
Griffith University conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If potential participants have any concerns or complaints about the ethical conduct of the research project, they should contact the Manager, Research Ethics on ph: (07) 3735 5585 or email: research-ethics@griffith.edu.au.
Queensland Health conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If potential participants have any concerns or complaints about the ethical conduct of the research project, they should contact the Queensland Health Office of the Human Research Ethics on ph: (07) 5519 8010 or email: GCHEthics@health.qld.gov.au. In addition, the Patient Liaison Service (ph: (07) 5519 8288 or 0414 278 005) can provide information and assistance if required.

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Appendix C

Parent Participation Consent Form and Adolescent Participation Consent Form

Placing the Focus on Perfectionism in Female Adolescent Anorexia Nervosa: Augmented Maudsley Family-based Treatment (MFBT + CBT)

PARENT PARTICIPATION CONSENT FORM

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Kim Hurst
Psychologist, Eating Disorder Program, Child & Youth Mental Health Service
Gold Coast Health Service District
Ph: 5667 1714

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include the following:
  - Approximately 20 whole-family 60-minute sessions occurring across a one-year period.
  - I will complete questionnaires at four distinct points during treatment.
  - My daughter will also participate in an additional nine 60-minute sessions of CBT (perfectionism) at the end of phase one of treatment;

- I have had any questions answered to my satisfaction;

- I understand the risks involved;

- I understand that my participation in this research is voluntary and my decision about participation will in no way affect my child’s routine treatment;

- I understand that if I have any additional questions, I can contact the research team;

- I understand that my daughter and family are free to withdraw from this research study at any time, without comment or penalty;
• I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and

• I agree to participate in the project.

Name: ______________________  Relationship to child: _______________

Signature: ____________________  Date: ______________
Placing the Focus on Perfectionism in Female Adolescent Anorexia Nervosa: Augmented Maudsley Family-based Treatment (MFBT+CBT)

ADOLESCENT PARTICIPATION CONSENT FORM

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STUDENT INVESTIGATOR
Kim Hurst
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Ph: 5667 1714

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include the following:
  - Approximately 20 whole-family 60-minute sessions occurring across a one-year period.
  - I will also participate in an additional nine 60-minute sessions of CBT (perfectionism) at the end of phase one of treatment.
  - I will complete questionnaires at four distinct points during treatment;

- I have had any questions answered to my satisfaction;

- I understand the risks involved;

- I understand that my participation in this research is voluntary and my decision to take part or not take part will in no way affect my routine treatment;

- I understand that if I have any additional questions, I can contact the research team;

- I understand that I am free to withdraw from this research study at any time, without comment or penalty;

- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Name: ___________________________  Signature: ___________________________

Date: ___________________________
Appendix D

Cognitive Behavioural Therapy Intervention—Perfectionism in Perspective

“PERFECTIONISM IN PERSPECTIVE”

The modules form part of:
