

Exploring the Metacognitive Profile and Role of Memory in  
Adolescents with Anorexia Nervosa

Katie Liveley

Doctorate in Clinical Psychology

The University of East Anglia  
School of Medicine, Health Policy and Practice

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## Abstract

The aim of this qualitative study was to explore the metacognitive profile and role of memory in adolescents with anorexia nervosa (AN). Nine adolescent females with AN participated in the study.

Metacognition can be conceptualised as ‘thinking about thinking’ (Wells, 2000). Metacognitive factors or cognitive processes involved in regulating thoughts and emotions can be explained by the Self-Regulatory Executive Function (S-REF) model (Wells & Matthews, 1994).

Metacognitive dysfunction has been identified in adults with AN (e.g., McDermott & Rushford, 2011). Individuals with AN present with a toxic style of thinking, which is characterised by processing negative self-beliefs, perseverative thinking, self-focussed attention, threat-monitoring and avoidance (e.g., McDermott & Rushford, 2011; Wells, 2000, 2009).

Metacognitive factors can have an effect on memory processing (Mazzoni & Kirsch, 2002). Research on memory in eating disordered populations has focussed on the origins of the disorder, content of early recollections and the families’ relationship with food. Studies indicate that negative early experiences are associated with disordered eating (e.g., Sweetingham & Waller, 2008).

This was the first qualitative study of metacognitive factors and role of memory, whereby the content, use, and impact of memories were explored. The primary research question was to explore and describe the metacognitive profile of adolescents with AN. The secondary question aimed to understand and capture the role of memory in this clinical sample.

Semi-structured interviews were conducted to assess metacognitive factors and memories, based on Wells and Matthews’ (1994) metacognitive profiling interview. Data analysis was performed using thematic analysis, where the information was organised into four themes, Relationships in Anorexia Nervosa, Cognition, Coping Strategies, and Early Experiences and Memory. The key findings were that

participants described patterns of metacognitive dysfunction and indicated that memory can have a negative impact on mood and lead to dietary restriction.

## **Chapter One.**

### **1. Introduction**

#### **1.1. Chapter Overview**

This chapter presents the background to this qualitative study exploring the metacognitive profile and role of memory in adolescents with anorexia nervosa (AN). An overview of the research on eating disorders and AN, memory, and metacognition is provided. First, there is a discussion concerning the nature, diagnosis and challenges in the treatment of AN and the possible predisposing and perpetuating factors, which includes a review of the research on memory. This is followed by presenting the literature and models of metacognition and the relationship between metacognition and psychopathology. The final sections aim to provide a rationale for the study by amalgamating the literature on AN, memory, and metacognition and considering treatment approaches.

#### **1.2. Eating Disorders**

Eating disorders are complex and often enduring psychological disorders that can be life-threatening (Steinhausen, Seidel, & Winkler Metzke, 2000). Eating disorders are classed as Axis I disorders in the Diagnostic and Statistical Manual of Mental Health Disorders (DSM-V; American Psychiatric Association, APA, 2013). Individuals can move between eating disorder diagnoses over time, the most commonly cited of these disorders are AN, bulimia nervosa (BN), and binge eating disorder (BED; Goss, Allan, Galsworthy-Francis, & Dave, 2012).

#### **1.3. Anorexia Nervosa**

The healthcare cost of eating disorders in the United Kingdom is estimated to be £1.26 billion per year (Henderson, 2012). Recent figures suggest that managing young people with eating disorders in the National Health Service (NHS) accounts for more than half of the total expenditure, as under twenty-fives with these disorders constitute 60% of hospital admissions (Henderson, 2012). The Hospital and Social Care Information Centre (HSCIC) reported that the rate of eating disorder admissions

increased by 16% between 2011 and 2012, while recent data indicated a further increase of 8% over the last 12 month period (HSCIC, 2012, 2014). Reports suggest that nearly three-quarters of admissions were attributable to AN (HSCIC, 2012). Simon, Schmidt, and Pilling (2005) highlight that the financial costs of eating disorders are underestimated as there are difficulties in detection where individuals tend to present to general practitioners with gastrointestinal, gynaecological and psychological problems prior to a diagnosis.

In the United Kingdom, the incidence of AN is 4.7 cases per 100,000 population (Currin, Schmidt, Treasure, & Jick, 2005). Children as young as eight have been diagnosed with AN, while the prevalence rate amongst females is approximately 0.5% at the peak age of onset (i.e., in adolescence; Bryant-Waugh, 2000; Carr, 2006). The ratio of females to males with AN is approximately 9:1 (Carr, 2006).

The term 'anorexia nervosa' literally means 'a nervous loss of appetite', and fundamentally refers to a loss of appetite for emotional reasons (Boughtwood, Halse, & Honey, 2007; Davison & Neale, 2001). AN is characterised by self-starvation or severe dietary restriction, a refusal to sustain a medically healthy weight, a pathological fear of weight gain, and a distorted perception of the size of the body or body parts (Davey, 2008; Lee, 1995).

Changes to diagnostic criteria of AN have emerged from the fifth revision of the DSM (APA, 2013). These changes serve to reduce the diagnosis of Eating Disorder Not Otherwise Specified (EDNOS), a diagnostic category for individuals that do not fulfil the criteria for a specific eating disorder (e.g., AN) based on their symptoms or severity (Brown, Holland, & Keel, 2014; Fairburn, Cooper, & Shafran, 2003). Researchers argued that an individual with a diagnosis of EDNOS or atypical AN may present with psychopathology equivalent to that of a person who meets the diagnostic criteria for AN (Fairburn et al., 2007). In the DSM-V, Criterion A for AN refers to a significantly low body weight and removes the stipulation that an individual's weight needs to be 15% below their expected weight (APA, 2000, 2013; Brown et al., 2014).

The manual provides guidance on low body weight based on information from the Centers for Disease Control and Prevention (CDC) and World Health Organisation (WHO). This indicates that a body mass index (BMI) of 17.0-18.5 kg/m<sup>2</sup> may represent a significantly low body weight, however these parameters serve as a guide as clinicians need to take into consideration the clinical history in determining a diagnosis (APA, 2013).

Individuals who either fear weight gain or engage in behaviours that interfere with gaining weight will meet Criterion B (APA, 2013). This revision means that patients who are reluctant to endorse their fear of gaining weight may still fulfil this criterion dependent on their behaviour and their assessors' clinical judgement (APA, 2000, 2013; Brown et al., 2014). One further change to the manual is that Criterion D pertaining to amenorrhea (i.e., cessation of menstruation) has been removed (APA, 2000, 2013). Furthermore, there is a distinction between two subtypes of AN, indicating the presence or absence of concurrent bingeing and purging, termed binge eating/purging type and restricting type respectively (APA, 2013; Davey, 2008). Purging can refer to self-induced vomiting, excessive exercise, or misuse of substances such as laxatives and diuretics (Glover & Sharma, 2012; Loumidis & Wells, 2001).

The disorder can be difficult to treat as individuals tend to experience the disorder as egosyntonic (i.e., where the disorder is congruent with their beliefs and values) and may represent a part of their identity, a 'substitute identity' or their sense of self (Higbed & Fox, 2010; Kitson, 2012; Starzomska, 2009; Vitousek, Watson, & Wilson, 1998). There are many pro-AN or 'pro-ana' websites dedicated to promoting the disorder as a 'lifestyle choice', these contain images and text termed 'thinspiration' aimed at inspiring others to engage in eating disordered behaviours (Holman, 2012; Norris, Boydell, Pinhas, & Katzman, 2006). Even at the stage where patients begin to re-evaluate their relationship with AN, there are a number of challenges to overcoming the disorder. One of these appears to be the experience of an internal battle between

the self and the illness that manifests as a result of attempts to fight the disorder during the recovery process (Higbed & Fox, 2010).

Recovery rates identified in a meta-analysis of 119 studies, spanning 46 years, assessing 5590 patients treated for AN were 46.9% ( $SD = 19.7$ ; Steinhausen, 2002). While the authors acknowledged there was a lack of consensus on outcome parameters, the study reported that one third of the sample demonstrated improvements, in comparison to one fifth of the participants who were regarded as chronically ill. However, these figures need to be interpreted in the context of the aforementioned problems with detection of eating disorders (Simon et al., 2005).

Epidemiological studies report that compared to other psychiatric conditions, AN has the highest mortality rate in young females as a result of self-induced starvation, medical complications and suicide (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005; Carr, 2006; Department of Health, 2002). Factors associated with a poor prognosis are lower body weight, hospitalisation, chronicity, bulimic symptoms and comorbid psychological difficulties (Carr, 2006; Goss & Fox, 2012).

### **1.3.1. Comorbidity.**

Individuals with AN strive for thinness in an attempt to achieve their high perfectionistic standards; although this process may underpin their sense of failure or worthlessness (Carr, 2006). This can lead to depressive symptoms which are reportedly present in many cases of AN (Bühren et al., 2014; Godart et al., 2007). A literature review performed by Godart et al. (2007) evaluating papers over a 20 year period indicated prevalence rates of 10-71% for comorbid depression in AN, one of the reasons cited for the variation in rates is the change in diagnostic criteria over time. A recent study by Bühren et al. (2014) identified that 47% of a sample of adolescents with AN presented with depression. Furthermore, a review study indicated that many individuals with AN tend to experience at least one anxiety disorder (e.g., social phobia) and can have comorbid obsessive compulsive disorder (OCD; Godart, Flament, Perdereau, & Jeammet, 2002; O'Brien & Vincent, 2003).

The medical complications associated with the disorder concern cardiovascular health (e.g., decreased heart rate), the gastrointestinal tract (e.g., constipation), the skeletal system (e.g., osteoporosis), biochemical levels (e.g., low sodium levels), dermatology (e.g., dry skin) and a compromised nutritional state. These factors are secondary to the disordered eating and for the most part can be reversed on restoration of normal eating patterns (Glover & Sharma, 2012).

### **1.3.2. Theoretical perspective.**

Forty years have passed since the emergence of theories by Bruch (1973) and Selvini Palazzoli (1974), which hypothesised problematic patterns of interactions between mother-child dyads as contributory factors in the development of AN. Similarly, Minuchin, Rosman, and Baker (1978) proposed a systemic model of the 'psychosomatic family' to explain the origins of the disorder, which involved dysfunctional patterns of family interactions (e.g., rigidity, enmeshment, and over-involvement; Eisler, le Grange, & Asen, 2003; Simic & Eisler, 2012). However, in recent years these concepts have garnered criticism as there is a dearth of evidence to support the claim that family processes are the source of the problem. The current understanding is that family dynamics are a response to supporting a family member with the illness (Simic & Eisler, 2012).

Fairburn et al. (2003) developed the transdiagnostic model of eating disorders. This model highlights that the core psychopathology of eating disorders is associated with dysfunctional self-evaluative mechanisms, whereby worth is based upon eating, shape, weight, and control, which are moderated by low self-esteem and perfectionism. These factors interact with mood intolerance, achievement and weight-controlling behaviours and ultimately can lead to a 'starvation syndrome'. This syndrome reflects a process whereby social withdrawal can isolate a patient from others who may diminish the importance placed on controlling their eating, weight and shape. Control as a core feature of the model could be conceptualised in terms of metacognitive control, monitoring and regulating thoughts.

A cognitive model of AN developed by Wolff and Serpell (1998) suggests that early experiences and genetic factors may predispose individuals to develop dysfunctional schemas (e.g., concerning weight), cognitive distortions (e.g., a dichotomous thinking style) and emotional dysregulation. Indeed, individuals with AN may develop core beliefs about themselves being worthless, powerless, and “fat”. These beliefs are activated once a critical incident occurs (e.g., weight-related teasing), generating negative cognitions pertaining to weight or shape that trigger eating disorder behaviours (e.g., not eating). These behaviours elicit a number of responses (e.g., physiological changes in the body) that only serve to further reinforce the use of weight-loss strategies. These maladaptive behaviours create a preoccupation with food that influences emotional responses and subsequently increases their sense of control. Finally, approving comments from others concerning weight-loss generates feelings of specialness.

It is suggested that patients with AN attempt to regulate their affect through use of maladaptive behavioural strategies of severe dietary restriction, bingeing and purging (Taylor, Bagby, & Parker, 1997, as cited by Nandrino, Doba, Lesne, Christophe, & Pezard, 2006). A qualitative study identified that patients with the disorder aim to control their emotions by food restriction or a cycle of bingeing and purging (Fox, 2009). In 2010, Wildes, Ringham, and Marcus hypothesised that AN functions to distract individuals from experiencing negative emotional states. While there is no evidence to support this theoretical position on the function of the disorder, it is consistent with the escape from self-awareness theory, which suggests that binge eaters distract themselves from personal threats that evoke unpleasant emotions (Heatherton & Baumeister, 1991; McManus, Waller, & Chadwick, 1996; Quinton, 2004; Waller & Meyer, 1997).

Interestingly, individuals with AN have deficits in recognising and expressing their emotions, referred to as alexithymia (Harrison, Sullivan, Tchanturia, & Treasure, 2009; Montebanocci et al., 2006; Treasure & Schmidt, 2013).

### **1.3.3. Predisposing, precipitating and perpetuating factors.**

Research indicates a number of possible aetiological factors in AN including genetic vulnerabilities (e.g., familial transmission), systemic factors (e.g., history of disordered eating), negative early experiences (e.g., neglect), dispositional factors (e.g., low self-esteem) and sociocultural influences (e.g., media emphasis on 'size zero'; Davey, 2008; Horesh et al., 1995; Jaite et al., 2011; McCarthy, 1990; Strober, Freeman, Lampert, Diamond, & Kaye, 2000).

It is possible that a series of stressors precipitate the onset of AN. Stressors may represent difficult experiences that have a direct effect on an individual (e.g., teasing), or negative life events experienced by family members that have indirect effects (e.g., parental illness; Carr, 2006). These stressors can occur during transitional periods (e.g., as a child enters adolescence) as a response to pressure (e.g., academic), loss (e.g., bereavement) or change (e.g., in the family system; Carr, 2006).

Factors that may be involved in the maintenance of the disorder and influence self-regulatory systems are activation of the reward circuitry in the brain, reduced brain function (e.g., poor attention) and abnormalities in information processing (e.g., memory biases; Legenbauer, Maul, Rühl, Kleinstäuber, & Hiller, 2010; McCarthy, 1990; Tierney, 2012; Treasure & Russell, 2011).

### **1.3.4. Memory.**

As negative life events and familial factors are linked to eating disorder symptoms, and food is an inherent aspect of childhood memories, memory may play an important role in precipitating and perpetuating eating disorders (Brink, Ferguson, & Sharma, 1999). Memories can be considered to be transitory mental events that have a recollective quality (Conway & Pleydell-Pearce, 2000; Mazzoni & Kirsch, 2002). Memory for important, emotionally powerful and personally relevant events in one's life is referred to as autobiographical memory (Conway & Rubin, 1993; Eysenck & Keane, 2000). "Autobiographical memory is of fundamental significance for the self, for

emotions, and for the experience of personhood, that is for the experience of enduring as an individual, in a culture, over time” (Conway & Pleydell-Pearce, 2000, p. 261).

Cohen (1989) highlights that one’s sense of identity is dependent on the ability to recall personal life stories. Autobiographical memories that elicit emotion can be important in decision-making and planning for the future, however focussing on the emotional elements of unpleasant memories may play a role in the development of mental health difficulties (Denkova, Dolcos, & Dolcos, 2014).

Our ability to encode personally-referent information is acquired in infancy as one’s self-knowledge develops, interestingly it is suggested that autobiographical memories are organised in adolescence while one’s sense of identity is emerging (Conway & Pleydell-Pearce, 2000; Erikson, 1963; Habermas & Bluck, 2000; Howe & Courage, 1997; McLean & Thorne, 2003; Rubin, Rahhal, & Poon, 1998). Recent memory research with adolescence has centred on self-reflecting, which involves reflecting on one’s personal memories with the aim of enabling individuals to consider the meaning of past experiences (Thorne, McLean, & Lawrence, 2004).

Memories are related to and reinforce self-schemas which play an important role in eating disorders (Conway & Pleydell-Pearce, 2000; Habermas & Bluck, 2000; Markus, 1977), where schemas refer to “knowledge structures about the self, world, and future that guide attention to and interpretation of stimuli” (Spangler & Stice, 2001, p. 814). Researchers suggest that individuals with eating disorders possess a dysfunctional disorder-specific schema (e.g., a schema about the body) that may in part be responsible for abnormalities in processing (e.g., a memory bias for fat-related stimuli; Hargreaves & Tiggemann, 2002; Legenbauer et al., 2010; Polivy & Herman, 2002; Sebastian, Williamson, & Blouin, 1996; Smeets, Roefs, van Furth, & Jansen, 2008; Spangler & Stice, 2001; Vitousek & Hollon, 1990; Williamson, White, York-Crowe, & Stewart, 2004).

Studies suggest that mood states powerfully influence processing of memories; this effect is termed mood-congruent memory (Blaney, 1986; Lau, Segal, &

Williams, 2004; Teasdale, 1983). Individuals presenting in a depressed mood state demonstrate biases at the encoding or retrieval stage, and recall negatively valenced memories (Lau et al., 2004). Indeed, irregularities in processing have an effect on memory, attention and interpretation of information, particularly in the context of food, weight and shape-related stimuli (Polivy & Herman, 2002; Smeets et al., 2008). Individuals with AN present with processing biases, where information pertaining to eating, weight and shape is encoded and accessed from memory with ease (Williamson et al., 2004). Neuropsychological testing indicates there are both memory and attentional biases to food, weight and shape-related stimuli (Carr, 2006; Polivy & Herman, 2002; Rieger et al., 1998; Sebastian et al., 1996; Smeets et al., 2008). Clinical evidence suggests that individuals with eating disorders possess a memory bias, in that patients have better recall for incidents of weight-related teasing prior to disordered behaviour than for approving comments during the course of the illness (Casper & Davis, 1977; Phelan, 1987; Vitousek & Hollon, 1990).

Several researchers have explored the relationship between early experiences and eating patterns. Brink et al. (1999) observed differences between individuals classed as a healthy weight, obese or successful dieters in recollection of positive and negative memories, family food rules, and whether food functioned as a means of control. Indeed, parental use of food as a means of reward or punishment was associated with eating disorder symptoms (MacBrayer, Smith, McCarthy, Demos, & Simmons, 2001; Puhl & Schwartz, 2003).

Overall, studies suggest that early experiences of criticism, teasing, adversity or attention to weight and shape in the family system are linked to disordered eating, while weight or shape-related teasing is associated with low self-esteem and negative affect (Dalgleish et al., 2003; Eisenberg, Neumark-Sztainer, & Story, 2003; Kaltiala-Heino, Rissanen, Rimpela, & Rantanen, 2003; Leung, Schwartzman, & Steiger, 1996; Sweetingham & Waller, 2008). Cooper, Todd, and Wells (1998) reported that dysfunctional self-beliefs (e.g., feeling worthless, inferior, or a failure) in individuals with

eating disorders originated from excessive focus on food and eating in the system or from negative comments from others. The participants described negative early experiences that tended to occur before reaching adolescence.

A body of research indicates that autobiographical memories can be overgeneral in those with a current (e.g., Williams et al., 2007) or historic psychiatric diagnosis (e.g., Mackinger, Pachinger, Leibetseder, & Fartacek, 2000). A specific memory refers to recall of an event that occurred at a certain time and place (e.g., I celebrated my 16<sup>th</sup> birthday with friends at my favourite restaurant), whereas impoverished recollections of frequent events (e.g., I went to a restaurant with friends) are considered to be general memories (Kovács, Szabó, & Pászthy, 2011). Indeed, Williams et al. (1996) assessed a clinical and non-clinical sample in terms of reported autobiographical memories and their ability to describe possible future events in response to positive and negatively valenced emotion words. The results indicated that reduced specificity of memories was associated with reduced specificity of one's imagined future in the clinical group.

The absence of specific personal memories is evidenced in depression (e.g., Hermans et al., 2004), bipolar disorder (Mansell & Lam, 2004), post-traumatic stress disorder (PTSD; McNally, Lasko, Macklin, & Pitman, 1995), and borderline personality disorder (Startup et al., 2001). Similarly, there is evidence of impoverished autobiographical memories in AN (Brockmeyer, Grosse Holtforth, Bents, Herzog, & Friederich, 2013; Kovács et al., 2011; Nandrino et al., 2006). This reduced specificity in memories of individuals with AN is consistent across both positive and negative memories, and the contrast between processing negative and positive information is disproportionate (Brockmeyer et al., 2013; Nandrino et al., 2006). Brockmeyer et al. (2013) tasked individuals with AN and healthy controls to write an account of a sad autobiographical memory. The findings indicated a relationship between body weight and negative emotions, whereby lower BMI scores were associated with less negative emotions. This finding is consistent with the view that the function of AN is to manage

emotions (Brockmeyer et al., 2013; Wildes et al., 2010). This pattern of general memories is associated with illness duration and therefore as the chronicity of the illness increases and weight reduces, the impact of negative emotions may be attenuated in AN (Nandrino et al., 2006).

Theoretically a number of papers suggest that the phenomenon of overgenerality can be explained by an affect regulation model (Williams et al., 1996). It is possible that the emotional impact of painful early experiences are minimised by retrieving less specific memories of these distressing events (Raes, Hermans, de Decker, Eelen, & Williams, 2003; Williams et al., 1996). Raes et al. (2003) extended this model, proposing that overgeneral personal memories may reduce a person's vulnerability to future negative experiences. A detailed model of autobiographical memory presented by Conway (1996) suggests that memories are hierarchically structured in terms of specificity (e.g., event-specific knowledge, general events and lifetime periods) and organised by category. It is theorised that an executive system controls the presence of memories in consciousness. Functional avoidance of processing information at the encoding and retrieval stage may account for reduced specificity in memories (Conway & Pleydell-Pearce, 2000; Williams et al., 2007). For example, where a distressing memory may elicit a stress response, individuals may suppress this threatening or upsetting content by using regulatory strategies (Barnier, Levin, & Maher, 2004; Dalgleish, Mathews, & Wood, 2005). Similarly, Mazzoni and Kirsch (2002) developed a model of autobiographical memory placing metacognition at the heart of the model.

#### **1.4. Metacognition**

Metacognition involves monitoring, evaluating and regulating one's cognitive processes (Brown, 1987; Brown, Bransford, Ferrara, & Campione, 1983; Martinez, 2006; Moses & Baird, 1999; Nelson & Narens, 1990; Wells, 2000). Metacognition is primarily concerned with 'how' as opposed to 'what' people think, therefore the emphasis is placed on cognitive processes and the nature of thinking rather than the

content of thoughts (Wells, 2000). Indeed, metacognition is a mechanism that accounts for the way we process and appraise the information that comes into consciousness, and the strategies we use to control our cognitions, emotions and behaviour (Wells, 2009). Metacognitive processing is shaped by our experiences and relationships with thoughts (Wells, 2008). Finally, metacognition is a key part of executive function, where executive function refers to “integrative cognitive processes that determine goal-directed and purposeful behavior and are superordinate in the orderly execution of daily life functions” (Cicerone et al., 2000, p. 1605).

Our understanding of metacognition in young people has evolved over the years. In the past, Piaget (1964/1968) believed that children became capable of thinking about their cognitive processes at 11 years old, consistent with the emergence of hypothetico-deductive reasoning (i.e., the formal operational stage of development). Fox and Riconscente (2008) evidenced that at the age of 11, young people are aware of their own thoughts and cognitive processes. Indeed, a study with adolescents demonstrated that this age group is able to understand the construct of metacognition and answer self-report measures assessing thought control strategies (Whiting, May, Rudy, & Davis III, 2013). Klaczynski (2005) suggested that as young people become advanced in the use of metacognitive skills, the perceived importance of controlling one’s cognitions emerges. However, recent investigations have considered the metacognitive skills of children as young as seven (Bacow, Pincus, Ehrenreich, & Brody, 2009; Ellis & Hudson, 2010; Muris, Merckelbach, Gadet, & Moulart, 2000).

Metacognition can be divided into three distinct categories, metacognitive knowledge, metacognitive experiences and metacognitive strategies (Wells, 1995, 2000). Metacognitive knowledge can be a predisposing factor to dysfunctional thinking patterns in emotional disorders (Spada & Wells, 2006). This knowledge-base is comprised of information about one’s thoughts, metacognitive beliefs (or meta-beliefs), and self-regulatory goals that guide information processing and behaviour (Spada & Wells, 2006; Wells, 2000). Metacognitive beliefs or metacognitions are verbally

accessible beliefs about “the meaning, consequences and nature of thinking” (Spada & Wells, 2006, p. 139; Wells, 2008). Wells (2009) argues that these beliefs can drive a particularly ‘toxic’ thinking style which leads to enduring psychological disorders. Meta-beliefs are dichotomised as positive and negative, where positive meta-beliefs relate to the need to engage in perseverative thinking (e.g. “I can think clearly when I worry”) and to use maladaptive coping strategies (Wells, 2008). In contrast negative metacognitive beliefs concern the importance, “uncontrollability, danger and meaning of thoughts” (Wells, 2008, p. 652) and may take the form, “being unable to control my thoughts is a sign of weakness” (Cartwright-Hatton & Wells, 1997). Davey and colleagues highlight the importance of metacognitive beliefs in generating ‘stop rules’, rules that govern perseverance or termination of a given task (Davey, Startup, MacDonald, Jenkins, & Patterson, 2005). For example, a stop rule may be “I must continue to exercise until I burn 500 calories”.

Metacognitive knowledge is accessed when appraising mental events (e.g., thoughts) at a conscious ‘online’ level (Wells, 2000). Appraising the meaning of cognitions is regarded as a metacognitive experience (Wells, 2000). Indeed, metacognitive experiences include metacognitive feelings (e.g., feelings of familiarity) and metacognitive judgements (e.g., judgements on the source of these feelings) that can be generated while monitoring the processes or outcomes of a particular task (Efklides, 2006; Wells, 2000). Wells (2000) highlights that individuals with psychological difficulties have a tendency to rely upon their feelings to guide threat appraisal and use of coping strategies.

The responses involved in controlling the activity of one’s cognitive system are referred to as metacognitive control strategies (Wells, 2000). These strategies are used to control or change cognitive processes for the purpose of cognitive and affective self-regulation (Wells, 2009). Individuals’ responses can serve to increase, suppress or alter cognitive activities (Wells, 2009). Once cognitions are appraised as threatening (e.g., “bad things will happen if I continue to have this thought”), metacognitive

strategies are used to control one's thoughts through worry (e.g., "I will focus on other minor worries instead"), distraction (e.g., "I keep myself occupied"), punishment (e.g., "I pinch myself for having that thought"), social control (e.g., "I need to share my thoughts with a friend"), re-appraisal (e.g., "I try to consider the thought from a different perspective") or thought suppression (e.g., "I must stop thinking about this"; Wegner, 1994; Wells & Davies, 1994). Thought control strategies of worry, distraction, punishment, social control, re-appraisal and thought suppression are assessed in the Thought Control Questionnaire (TCQ; Wells & Davies, 1994). Social control and re-appraisal may be beneficial in some circumstances (Wells, 2000; Wells & Davies, 1994). In contrast, perseverative thinking (i.e., worry) is considered as a hallmark of mental illness (Meeten & Davey, 2011). Worry and punishment are associated with neuroticism, and these maladaptive metacognitive control strategies represent metacognitive dysfunction (Wells, 2000; Wells & Davies, 1994).

While reflecting on cognitions may involve processing self-knowledge and meta-beliefs that generate plans for controlling, appraising and monitoring thoughts, metacognitive dysfunction refers to the dysregulation of these processes, which can lead to maladaptive patterns of responding (McDermott & Rushford, 2011; Spada & Wells, 2006; Wells, 2000). Hallmarks of metacognitive dysfunction include perceiving thoughts and worry as dangerous and uncontrollable (e.g., "worrying will make me lose my mind") and presenting with negative beliefs about thoughts (e.g., "I must always control my thoughts"), positive beliefs about worry (e.g., "worrying can help me find solutions to my problems"), low cognitive confidence (e.g., "I cannot trust my memory"), and high cognitive self-consciousness (e.g., "I monitor my thoughts continually"; Cartwright-Hatton & Wells, 1997; Cooper, Grocutt, Deepak, & Bailey, 2007; Lavender, Jardin, & Anderson, 2009; McDermott & Rushford, 2011; Wells, 2000; Wells & Davies, 1994). These features of metacognitive dysfunction are operationalised in Cartwright-Hatton and Wells' (1997) Metacognitions Questionnaire (MCQ).

Spada and Wells (2006) note that an important self-regulatory goal in emotional disorders may involve reaching a particular internal state (i.e., a stop signal), however strategies employed to achieve this may interfere with self-regulation (e.g., individuals may continue to restrict food intake until there is a reduction in anxiety). Research indicates that metacognitive dysfunction is associated with psychopathology (Wells, 2000). The relationship between metacognition and mental health difficulties is explored in the literature, in relation to generalised anxiety disorder (GAD; Wells, 1995), hypochondriasis (Bouman & Meijer, 1999), PTSD (Roussis & Wells, 2006), OCD (Fisher & Wells, 2008; Wells & Papageorgiou, 1998), depression (Papageorgiou & Wells, 2003), pathological procrastination (Ferne & Spada, 2008), substance-related disorders (Nikčević & Spada, 2010; Spada & Wells, 2006), body dysmorphic disorder (BDD; Cooper & Osman, 2007; Kollei, Brunhoeber, Rauh, de Zwaan, & Martin, 2012), and in eating disorders (e.g., Cooper et al., 2007; McDermott & Rushford, 2011; Vann, Strodl, & Anderson, 2013; Woolrich, Cooper, & Turner, 2008).

Predominantly studies on metacognition within the area of clinical psychology have focussed on adult populations; however studies with adolescent samples are emerging. Wilson and Hall (2012) conducted a study assessing meta-beliefs and thought control strategies in adolescents with OCD, with the aim of comparing the results to an equivalent adult sample. The results indicated that adolescents' cognitive processes were somewhat similar to their adult counterparts, for example both groups most frequently used the same thought control strategy (i.e., distraction). Similarly, Welsh led a team comparing the meta-beliefs of 12-17 year olds considered at risk of developing psychosis to adolescent controls (Welsh, Cartwright-Hatton, Wells, Snow, & Tiffin, 2013). Significant differences were observed between the clinical and control groups in terms of unhelpful metacognitive beliefs. Therefore, adults and adolescents with consistent presentations show similar patterns of metacognition dysfunction, while clinical and non-clinical groups of adolescents can be differentiated.

### **1.5. Self-Regulatory Executive Function Model**

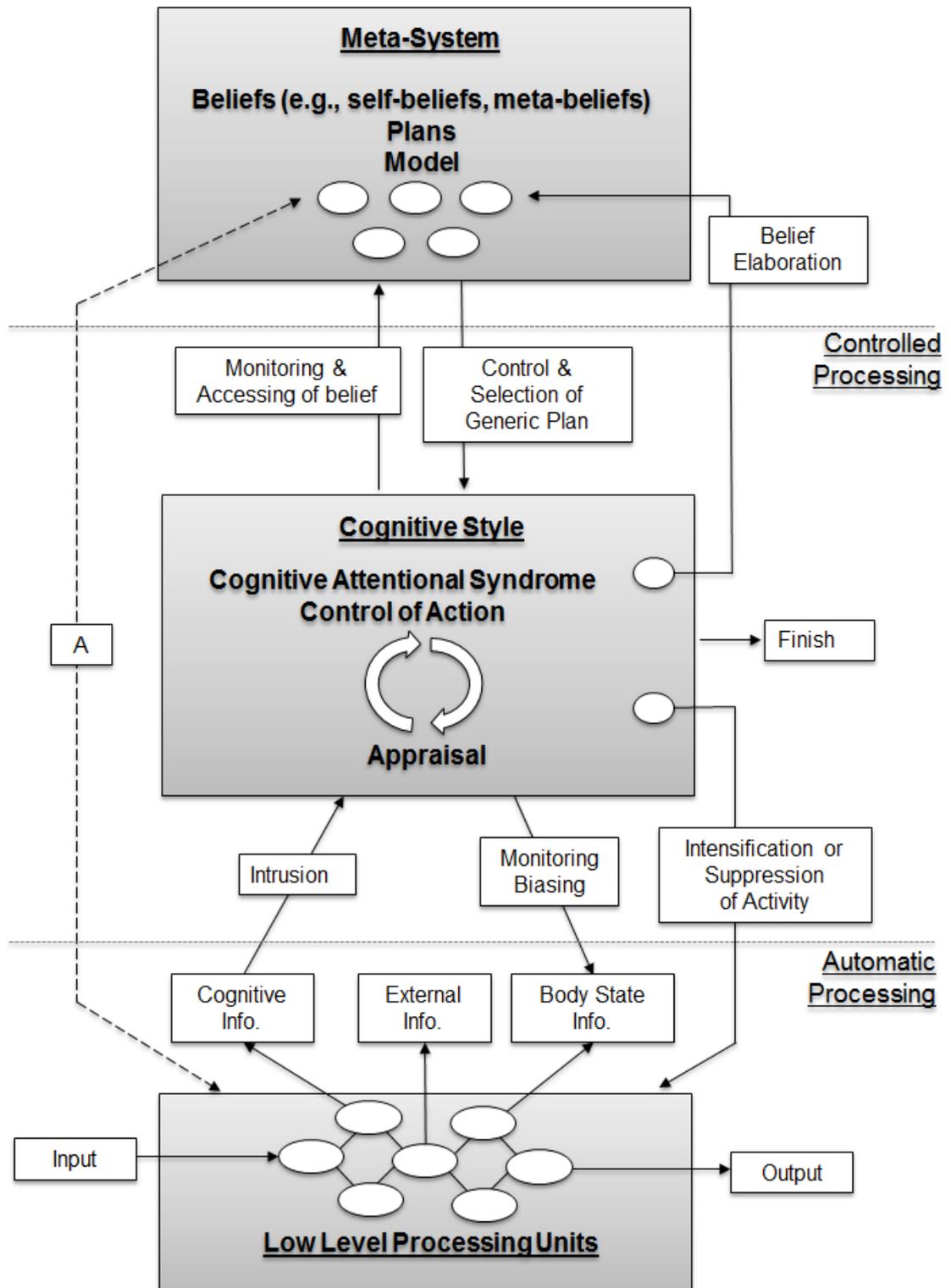
Wells and Matthews (1994) proposed the Self-Regulatory Executive Function (S-REF) model of emotional disorder. Figure 1 integrates two schematic representations of the same model, which shows a multi-level dynamic system whereby higher and lower level cognitive processes interact to regulate cognitions (Wells, 2009; Wells & Matthews, 1994). The aim of this interaction is to reduce any differences between perceived and ideal self-states and to regulate affective responses using both cognitive and behavioural strategies (Wells & Matthews, 1994).

The primary goal of the S-REF is achieved by controlling top-down processing of attention and by appraising the relevance of intrusions from lower level units and subsequently, either dismissing information or adjusting the current processing plan to respond to new information as appropriate (Wells & Matthews, 1994). Processing at one level can influence processing in the other two levels, for example the interplay between the online level and higher-level may reflect suppression of thoughts about eating 'forbidden foods' and this may influence beliefs about one's control. Resolving self-discrepancies is the only means of terminating S-REF system activity (Wells, 2000).

There are capacity limits for S-REF operation, where thinking in the form of worry or rumination has deleterious effects on optimal system functioning (Wells & Matthews, 1994). Within this three-level architecture different 'modes' can be applied which affect resource demands. Modes refer to the viewpoint individuals take in relation to their cognitions and beliefs. The 'object mode' refers to a non-evaluative accepting approach to one's cognitions and beliefs. This mode of operation is particularly relevant to individuals with mental health difficulties, for example an individual with AN who believes that their thoughts offer accurate reflections, will interpret the thought "I am greedy" as threatening (Wells, 2000). In contrast, the 'metacognitive mode' involves evaluation of a thought and appraisal of the reality of the

Figure 1. An adapted version of the Self-Regulatory Executive Function Model.

Adapted from Wells and Matthews (1994, p. 268) and Wells (2009, p. 9).



cognition. Cognitive behavioural therapy (CBT) aims to move individuals to evaluate their cognitions and access the 'metacognitive mode' (Wells, 2000).

The higher level or 'meta-system' can be regarded as "a store of metacognitions" (Kleinbichler, 2013, p. 11). The meta-system is required for all thinking and consists of self-knowledge and self-beliefs which are held in long-term memory and contain plans for processing information (Wells, 2000; Wells & Matthews, 1994). Self-knowledge is regarded as the principal influence on S-REF processing (Wells & Matthews, 1994). Self-knowledge consists of information about oneself (i.e., self-beliefs) and about self-regulatory approaches (i.e., coping strategies). Self-beliefs can be considered in terms of declarative and procedural beliefs, where declarative beliefs are those held about oneself (e.g., "I'm worthless") and procedural beliefs refer to plans for controlling online processing and incorporating meta-beliefs (Wells, 2000). Memories, feelings and one's self-impression are used both as a self-referential regulatory guide and in making appraisals (Wells, 2000). Once metacognitive information is accessed, plans are initiated that lead to threat appraisal and identification and selection of appropriate coping strategies (Wells, 2000). While initiation of a particular plan may lack complete voluntary control, the implementation of a plan is entirely voluntary (Wells & Matthews, 1994). Furthermore, it is the expected success or failure of a selected plan that produces affective responses (Wells & Matthews, 1994).

At the lower level, for the most part processing of information is considered automatic and stimulus-driven (Wells & Matthews, 1994). The stimuli at this level pertain to cognitive (e.g., thoughts about food), external (e.g., visual and olfactory information from food) and body state information (e.g., feeling weak and tired). The result of processing this information can be perceived in conscious awareness once the processing units reach high levels of activation. For example, while information about the body state may be processed on an unconscious level, information pertaining to hunger and cognitions about food would likely be experienced at a conscious level to

enable self-regulation (i.e., eating). Processing complex information can occur without involvement from higher levels in instances where stimulus-response operations are well-rehearsed (Wells & Matthews, 1994). Activation of processing units may also be initiated by input from higher levels, in that beliefs may increase monitoring of particular information. It is possible that a meta-belief such as “if I can’t stop thinking about food I won’t be able to control my eating” may increase attention to cognitions about food at the lower level, in Figure 1, this relationship is depicted by arrow ‘A’.

The online level is labelled as cognitive style in Figure 1 and is positioned in between the meta-system and lower level processing units. Processing at this level is dependent on the availability of attentional resources (Wells, 2000). Once information from the lower level enters consciousness at the online level, information is processed in line with metacognitive beliefs. A cyclical process of appraising information and controlling cognitions, can lead to an increase or decrease in activity and use of thought control strategies, such as thought suppression (i.e., the intention to remove thoughts from conscious awareness; Wegner, 1994).

Typically episodes of S-REF activity in healthy individuals are short-lived as discrepancies between perceived and ideal self-states are resolved successfully with the selection of appropriate coping strategies (Wells, 2000). In psychological disorders, implementing maladaptive strategies may result in failure to meet self-regulatory goals and terminate S-REF processing. Indeed, the S-REF model indicates that “individuals with emotional disorder are “locked into” cycles of maladaptive self-processing, with consequent loss of resources and impaired flexible control over processing” (Wells, 2000, p. 50). Dependent on plans from the meta-system and appraisal of intrusions from lower levels processing units, an unhelpful style of thinking may be initiated (Wells & Matthews, 1994). An example of S-REF functioning integrating information on AN, memory, metacognitive factors is provided later in Section 1.7.

## **1.6. Cognitive Attentional Syndrome**

Psychopathology is associated with a cognitive attentional syndrome (CAS), where one's style of thinking and coping strategies can maintain emotional responses (Wells, 2000). The CAS is at the heart of the S-REF model and is situated at the controlled processing level (Wells & Matthews, 1994). The CAS is a toxic cognitive style that consists of maladaptive coping strategies and is characterised by processing of negative self-beliefs, perseverative thinking in the form of worry and rumination, self-focussed attention, threat-monitoring, and avoidant behaviour (Wells, 2000, 2009). The CAS is borne out of unhelpful meta-beliefs, influences the selection of coping strategies, and tends to prolong a person's sense of threat (Wells, 2009). Individuals with mental health difficulties are prone to executing plans that consist of negative biases (Wells & Matthews, 1994).

Worry and rumination are predominantly verbal in nature and can be defined as "cognitive processes characterised by thinking in an elaborate, repetitive way about personal concerns" (de Jong-Meyer, Beck, & Riede, 2009, p. 547). Individuals can find terminating these chains of negative cognitions challenging (de Jong-Meyer et al., 2009). Wells (1995) highlights that worry can function as a cognitive strategy or as a metacognitive control strategy, where worry may represent an attempt to anticipate or solve problems, or be used as a means of suppressing other unwanted cognitions respectively (Wells, 1995). Perseverative thinking styles are associated with mental health difficulties. Indeed when worry and rumination become excessive, individuals tend to focus on cognitions and processes that interfere with self-regulation and strengthen erroneous beliefs (Wells, 2008, 2009). Several papers have highlighted the role of perseverative thinking in the maintenance of eating disorders (McDermott & Rushford, 2011; Woolwich et al., 2008).

Self-focussed attention refers to ones "awareness of self-referent, internally generated information that stands in contrast to an awareness of externally generated information derived through sensory receptors" (Ingram, 1990, p. 156). Wells (1991)

notes that self-focussed attention can stimulate self-regulation, as one tries to diminish any discrepancy between a perceived and an ideal self-state. Conversely, focussing attention on oneself in an intense and inflexible manner can negatively affect self-regulation. Furthermore, self-focussed attention is considered to increase internal responses resulting in a decrease in both one's processing capacity and the chance of applying adaptive coping strategies (Wells, 1991). Wells and Matthews (1994) suggest that individuals with higher levels of dispositional self-focus are at greater risk of developing the style of thinking characterised by the CAS. Individuals with eating disorders can present with high levels of self-focussed attention (McDermott & Rushford, 2011).

Threat-monitoring can be regarded as an "attentional bias in the form of fixing attention on threat-related stimuli" (Wells, 2009, p. 11). As per the CAS, individuals use a maladaptive coping strategy of focusing on internal or external sources of threat as a means of keeping themselves safe (Wells, 2008). This approach serves to increase both vigilance and awareness of perceived threats, and generates high levels of anxiety (Wells, 2008). Monitoring or searching for threat can reinforce erroneous beliefs and lead to changes in processing that is characterised by threat sensitivity (Wells, 2000). Attention to threat-related information can be observed in patients with AN (McDermott & Rushford, 2011).

Unhelpful coping strategies can include behavioural strategies (e.g., physically escaping a situation where one feels threatened) and using particular thought control strategies (e.g., cognitively suppressing content that generates anxiety). Avoidant approaches are problematic as individuals fail to learn that they hold erroneous beliefs about the dangers of a particular situation, and in turn this tends to increase the likelihood of avoidance in the future (Wells, 2009). Certain thought control strategies are considered to have a negative effect on emotional processing (Wells, 2000). Indeed, thought suppression is ineffective in removing target cognitions and can have the effect of increasing the presence of unwanted thoughts in conscious awareness

(Wegner, 1994). Individuals with AN present with a number of maladaptive coping strategies (e.g., Woolwich et al., 2008).

As emotional disorders are associated with the CAS, an example of the role of CAS in AN is presented (Wells, 2000). A patient may worry about dining at a restaurant for a family celebration, prior to going to the restaurant they may ruminate on negative past experiences of dining out or eating with others. On entering the restaurant, it may be that an individual with AN may monitor what others are eating with a bias on 'forbidden food'. In turn, this may produce intrusive thoughts about being obliged to eat such 'forbidden food' and thoughts about gaining weight, which is experienced as a significant threat. As guided by meta-beliefs (e.g., "focussing my attention on me eating will keep me safe"), the individual may focus on their own bodily sensations while eating (e.g., the feeling of 'fullness'), and estimate the calorie content of the food they consume. However this may generate feelings of uncertainty and serve as a further source of worry. As a result of these cognitive processes, it is likely that the sense of threat about dining at a restaurant will be reinforced and future visits avoided where possible, thus maintaining the pattern of disordered behaviour.

### **1.7. Eating Disorders, Memory, Metacognition, and the S-REF Model**

Wolff and Serpell (1998) proposed that pro-AN beliefs may include "I won't cope without AN" while anti-AN beliefs could be "AN restricts my life". A further study which explored the relationships individuals have with AN, comes from Serpell and colleagues who used grounded theory on pairs of letters authored by individuals with the illness (Serpell, Treasure, Teasdale, & Sullivan, 1999). Patients were invited to write two therapeutic letters, one from the perspective that AN is a friend and the other from the position the illness is an enemy. The positive themes generated in the 'friend' letters indicated the value of AN to the participants, and concerned increases in confidence, sense of control, feelings of specialness, attractiveness, and fitness, for example. However, the letters to AN as an 'enemy' conveyed that the disorder was

tricking or cheating the patient, negatively affecting their social life, compromising their health, taking control from them, and wasting their life, for example.

Similarly, a qualitative study by Skårderud (2007) indicated that one of the perceived advantages of AN is a sense of pride, where patients prided themselves on their thin appearance, their ability for self-control and on being extraordinary (e.g., being thin and able to resist food). In contrast participants also described feelings of shame associated with the disorder. Finally, Tierney and Fox's (2010) qualitative paper identified positive and negative traits associated with the 'anorexic voice' using thematic analysis (TA). Patients described the voice as comforting, protective and a friend, which over time changes to become a bully, manipulator and captor.

The S-REF model and CAS may account for metacognitive dysfunction in this client group (Wells, 2000; Wells & Matthews, 1994). Section 1.9 provides a literature review on metacognition and eating behaviour and disorders; however there are key studies which are important to discuss at this stage which highlight the presence of metacognitive dysfunction in adults with AN. In 2007, Cooper et al. investigated the role of metacognitive factors in the AN. The adult sample consisted of 16 individuals with a current or historic diagnosis of AN, 15 dieters, and 17 non-dieters. In a questionnaire-based study, participants completed the MCQ (Cartwright-Hatton & Wells, 1997) that consists of five subscales, which overall assesses beliefs held about worry and intrusions, cognitive confidence, and cognitive self-consciousness. The findings showed that individuals with AN present with low cognitive confidence, hold beliefs that worry is dangerous, and excessively monitor and control their cognitions. However there were no differences observed between groups on the positive beliefs about worry subscale.

Woolrich et al. (2008) conducted a mixed design study that involved a semi-structured interview exploring meta-beliefs, coping strategies, cognitive processes and thought control strategies in individuals with AN and healthy controls (dieters and non-dieters). Patients and dieters tended to use more metacognitive control strategies than

non-dieters. However there were differences between patients and controls on use of strategies, such as rumination and avoidance, in line with the CAS (Wells, 2000). Content analysis indicated that all groups believed there were advantages and disadvantages to experiencing unpleasant thoughts about eating, weight and shape. There were differences between the clinical and non-clinical groups, in that themes of humility, survival and protection were identified as advantages of having those thoughts for the AN participants. The disadvantages experienced by the patients were expressed as restrictions and interference in their lives.

McDermott and Rushford (2011) aimed to build on earlier studies on metacognition in AN by recruiting a greater number of patients and controlling for the effects of BMI. A shortened version of the MCQ (i.e., the MCQ-30) was administered to 74 patients and 93 healthy controls (Wells & Cartwright-Hatton, 2004). There were significant differences on each subscale as the clinical group presented with a higher level of metacognitive dysfunction. Further analyses controlling for BMI showed that this effect was maintained in four of the five subscales (i.e., there was no significant difference between groups on positive beliefs about worry). Indeed, the control of this factor led to a decrease in effect sizes, whereby the authors concluded that starvation may serve to increase metacognitive dysfunction. The paper refers to a possible metacognitive profile for this client group, the presence of the CAS in AN, and acknowledged the value of the S-REF model (Wells & Matthews, 1994).

In the process of conducting this thesis a further study emerged that used qualitative methods to investigate metacognition in eating disordered groups (Vann et al., 2013). This study tasked patients aged 18-55 with AN, BN and EDNOS to reflect on their internal states (i.e., cognitions and emotions) and used grounded theory to develop a metacognitive model of eating disorders. The transdiagnostic model proposed by the authors suggests that a trigger (e.g., relating to weight) elicits positive meta-beliefs (e.g., “concentrating on negative thoughts will ensure that I remain in control of my eating”) which prompts CAS activity. In turn, the CAS initiates negative

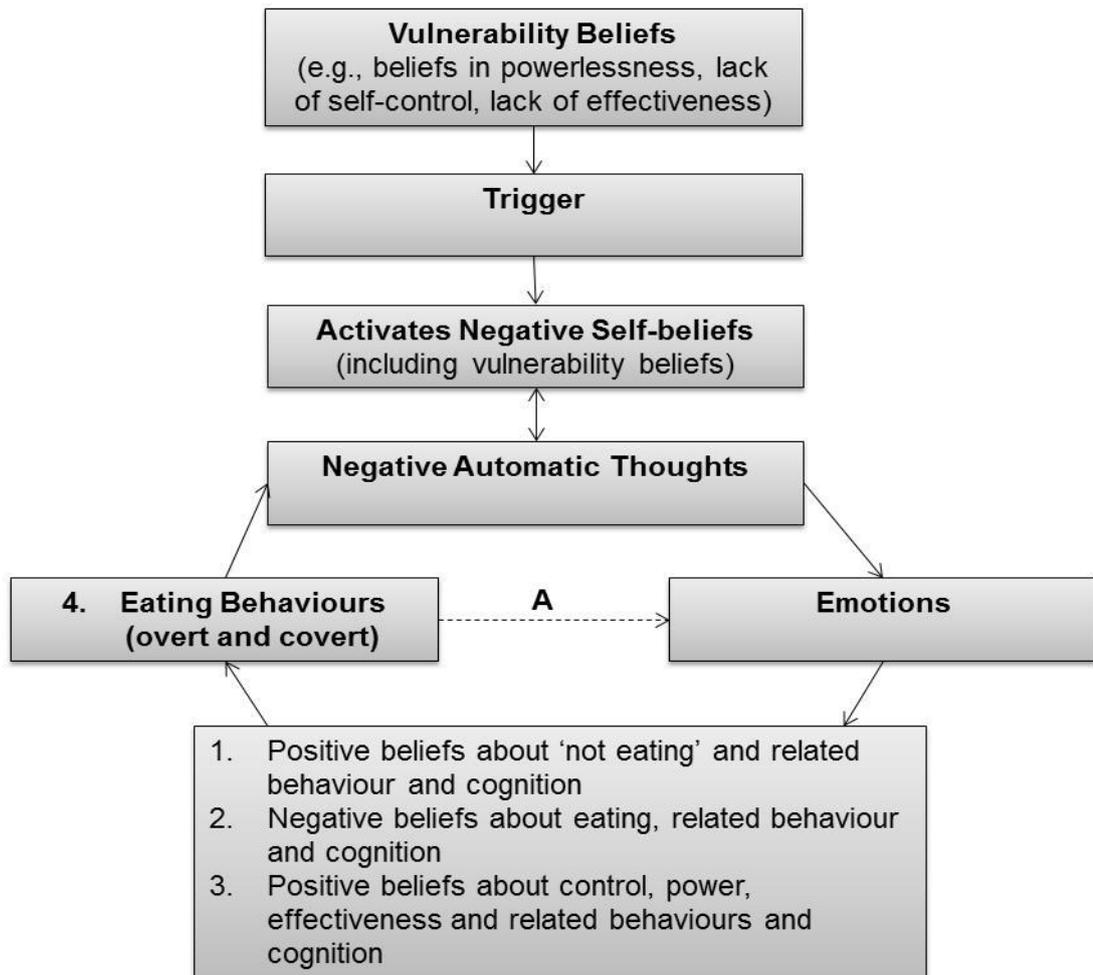
meta-beliefs (e.g., “my thoughts and feelings are uncontrollable”) and as guided by one’s metacognitions, individuals respond by employing maladaptive coping strategies that can prolong distress.

Similarly, Cooper (2012) presented a metacognitive model of AN (Figure 2), which follows the development of the metacognitive model of BN (Cooper, Todd, & Wells, 2009) and integrates metacognitive theory (Wells, 2000; Wells & Matthews, 1994). This model of AN suggests that a precipitating event or trigger (e.g., abuse) activates negative self-beliefs (e.g., “I am a failure”) and existing vulnerability beliefs (e.g., “I am powerless”). This set of beliefs manifests as automatic negative thoughts (e.g., “I am fat”) that generate unpleasant emotional responses (e.g., anxiety). In an effort to manage distressing thoughts and emotions, an individual engages in behaviour (e.g., not eating) as guided by their metacognitions (e.g., “not eating will help me calm my racing thoughts”). Not eating is reinforced as self-beliefs remain unchallenged and the physical effects of starvation reduce arousal, where one’s awareness of cognitions and emotions decreases, reaffirming existing metacognitive beliefs (i.e., not eating calms my thoughts).

Finally, integrating the information on AN, memory, metacognition, and the S-REF suggests that metacognitive dysfunction and the CAS may serve as a maintaining factor in the disorder (Cooper et al., 2007; Kollei et al., 2012; McDermott & Rushford, 2011; Vann et al., 2013; Wells, 2000; Wells & Matthews, 1994; Woolrich et al., 2008). As an example of S-REF functioning, information from the lower level (e.g., feeling bloated) may trigger perseverative processing of weight-related cognitions (e.g., “I hate my fat stomach”) or upsetting personal memories (e.g., being teased about weight) at the online level (Figure 1). As a result, meta-beliefs (e.g., “I must not think about food”) are accessed from the higher level that may lead to a threat appraisal and attempts to suppress ‘target’ food related-thoughts or unpleasant memories (Barnier et al., 2004; Conway & Pleydell-Pearce, 2000; Dalgleish et al., 2005; Mazzoni & Kirsch, 2002; Wells & Matthews, 1994). However, thought suppression is regarded as an ineffective

strategy, where target thoughts are likely to re-emerge and one’s sense of threat maintained, and ultimately individuals remain “locked in” to an unhelpful cycle of dysfunctional processing (Wegner, 1994; Wells, 2000, 2009).

Figure 2. A metacognitive model of anorexia nervosa. Model by Cooper (2012, p. 217).



### 1.8. Psychological Interventions

The National Institute for Health and Clinical Excellence (NICE) recommended that the Department of Health invest £2 million in order to fund studies into treatments for AN (King's College London, 2012; National Collaborating Centre for Mental Health, NCCMH, 2004; Parliamentary Office of Science and Technology, 2007). Tchanturia, Lloyd, and Lang (2013) highlight the need for effective treatments for this clinical group.

The aim of psychological interventions for individuals with AN is to encourage healthy eating patterns and weight gain, to reduce eating disorder symptomology, and manage risk (NICE, 2004). Most individuals with AN will be treated on an outpatient basis, individuals that do not make progress or are at risk of harming themselves should be offered inpatient treatment or treatment as a day patient (NICE, 2004).

A number of interventions are recommended by NICE (2004) for the treatment of this illness. These include cognitive analytic therapy (CAT), interpersonal psychotherapy (IPT), focussed psychodynamic work, systemic therapies and CBT. Treating young people requires the involvement of family members and considering the effects of the disorder on the family system, although practitioners should ensure that young people are offered individual sessions (NICE, 2004).

The effectiveness of these interventions for adolescents and adults with AN are discussed below. However, as there is an absence of studies focussing on the efficacy of CAT and IPT in adolescent samples, only adult studies are presented for these two therapies. Indeed, the evidence concerning the efficacy of treatments for adolescents with AN is limited (Gowers, 2006).

CAT is primarily concerned with patterns in relationships and the processes that affect one's behaviour (Ryle, 1995). There is emerging evidence of the role of CAT in treating adults with AN, as indicated in a study which compared the effectiveness of educational behaviour therapy to CAT in an adult sample (Treasure et al., 1995). The results indicated improvements in both conditions, with self-reports from the CAT group indicating significantly higher levels of improvement than the educational group.

IPT is a form of psychotherapy that considers interpersonal difficulties that may have contributed to the development or maintenance of the disorder (Gowers & Bryant-Waugh, 2004). Interest in interpersonal dysfunction in AN tends to focus on the family system (McIntosh, Bulik, McKenzie, Luty, & Jordan, 2000). Carter et al. (2011) compared IPT, CBT and specialist management of AN in an adult sample. While the results showed non-significant differences in outcomes between the three groups, at

long-term follow-up 64% of patients receiving IPT were considered to have a good outcome. McIntosh et al. (2000) offer caution that IPT may be contraindicated in instances where body weight decreases, particularly as this may affect an individual's ability to fully engage in treatment.

Researchers recruited adolescents with AN to a study comparing family-based treatment to supportive psychotherapy. In a subgroup of participants whose symptoms onset within the last three years, the results indicated improvements for the family-based approach in 90% of cases, opposed to 36% for the psychotherapy group (Eisler, Simic, Russell, & Dare, 2007). While the efficacy of family-based treatment has been demonstrated in adolescent samples; there are limited treatment studies focussing on family therapy for the treatment of adults with AN (Eisler et al., 2003). However, one study reported recovery rates of 35% for adults receiving family therapy on an outpatient basis (Dare, Eisler, Russell, Treasure, & Dodge, 2001).

Gowers and Bryant-Waugh (2004) conducted a review of treatments for AN in young people. The paper indicated that CBT had a moderate effect on AN, although it was noted that there were minimal studies for review. More recently, Fairburn et al. (2013) explored the value of CBT for adults with AN and found that of the 64% of patients who completed the course of therapy, 89% presented with minimal eating disorder symptoms post-treatment.

Researchers suggest that CBT may encourage positive changes in an individual's symptoms, while the source of pathology remains (Gowers, 2006). Wells (2009) attributes the efficacy of CBT to changing meta-beliefs and decreasing the toxic style of thinking (i.e., the CAS) that takes place incidentally during the course of therapy. Indeed, Wells (2008) proposes that negative thoughts simply activate the CAS, the source of pathology.

The value of integrating metacognitive therapy (MCT) with CBT is being increasingly recognised, whereby cognitive restructuring or behavioural experiments can be implemented to reappraise meta-beliefs (Cooper et al., 2009). Moreover, this

emerging integrative therapy is being used in the treatment of BN and binge eating (e.g., Cooper et al., 2009). MCT fits closely with CBT, as cognitive therapies are based on the premise that psychopathology is associated with cognitive disturbance (NCCMH, 2004; Wells, 2000). However, the two therapies differ in terms of treatment, while CBT interventions tend to target cognitions at one level as the focus can be on the content of thoughts and beliefs about oneself (e.g., “I am worthless”), MCT considers individuals’ relationship with their thoughts and thought processes (Wells, 2008, 2009). Wells (2000) highlights the importance of the interaction between self-knowledge, self-regulation and metacognition, whereby MCT focuses on cognitive processes and mechanisms that lead individuals to hold maladaptive interpretations and beliefs. Thus MCT aims to change the way one experiences and regulates cognitions by re-evaluating dysfunctional metacognitive beliefs (Teasdale & Barnard; 1993; Wells, 2008, 2009). In addition to modifying meta-beliefs, there are a number of techniques used in MCT, such as attentional modification strategies (e.g., attention training technique) which serve to develop procedural metacognitions (Wells, 2000). Finally, proponents of MCT argue that metacognitive factors play a significant role in both developing and perpetuating emotional disorders (Wells, 2009; Wells & Cartwright-Hatton, 2004; Wells & Matthews, 1994).

Recently there have been advances in treatment for AN, which considers the role of metacognition and neuropsychological functioning (Lopez, Davies, & Tchanturia, 2012). Individuals with AN present with difficulties in cognitive flexibility and weak central coherence (Lopez et al., 2012), where “weak coherence refers to the cognitive style where there is a bias towards detail accompanied by difficulties in the integrative processing of information” (Lopez, Tchanturia, Stahl, & Treasure, 2008, p. 1393). Therefore the rationale for cognitive remediation therapy (CRT) is that by reflecting on one’s thinking and learning new cognitive strategies, individuals with AN will have improvements in cognitive functioning, metacognitive processing, and self-regulation,

which is consistent with the S-REF model (Lopez et al., 2012; Wells & Matthews, 1994; Wykes & Reeder, 2005).

## **1.9 Literature Review**

This section details the process and outcome of the literature search for articles on metacognitive factors in the study of eating behaviour and eating disorders. The section critically appraises the 20 papers that were yielded from the literature search and presents relevant theory.

### **1.9.1. Aim of the review.**

The aim of the literature review was to search the National Library for Health databases for evidence of a relationship between metacognition and the wider categories of eating behaviour and eating disorders. The review assesses the content, scientific rigour and volume of studies in this research area.

### **1.9.2. Search methodology.**

Databases for psychology, psychiatry, medicine, nursing, and for allied health professionals were selected to search for relevant papers. Therefore, the following databases were chosen for this search: The Allied and Complementary Medicine Database (AMED), The British Nursing Index (BNI), The Excerpta Medica database (EMBASE), MEDLINE, PsycINFO, and Cinahl.

#### **1.9.2.1. Inclusion and exclusion criteria.**

Journals that focussed on metacognitive factors in the context of eating behaviour and eating disorders were included in the review. Key terms were searched for within the title and abstract of articles to allow for a greater number of relevant papers to be selected. Journal articles were limited to those written in English.

#### **1.9.2.2. Refining the journal selection.**

The process of refining the search and reviewing the journals is outlined in Table 1 and Figure 3. Search terms such as 'eating behaviour', 'eating disorders', 'metacognition', 'thought control' and 'thought suppression' were truncated and/or exploded to find a wide range of articles. This search yielded 37 articles that were

reviewed for suitability, and 20 of these papers are discussed as part of this review, the other 17 papers were excluded due to being low relevance. The 17 discarded journals consisted of six book reviews, one paper that focussed on the psychometric properties of a measure and the remaining ten papers related to other presentations or factors (OCD, suicidality, and alcohol use). The final stage involved reviewing the reference lists of the selected papers, however no further relevant papers were identified.

### **1.9.3. Results of the literature review.**

Table 2 presents the results of the literature review. Eighteen of the 20 articles that met the inclusion criteria were quantitative studies. Most of the studies incorporated analogue samples and presented a broad spectrum of eating behaviour by sampling dieters, binge eaters, and those regarded as being either a healthy weight or obese. Seven articles included an eating disordered group, therefore diagnoses of AN, BN, BED and EDNOS are represented in the review. Five of these studies included a sample of individuals with AN.

Only two papers recruited male and female adolescents, seven articles consisted of a mixed-gender adult sample and finally 11 papers assessed adult females. Two questionnaire-based studies and two qualitative studies assessed metacognition as a global construct, and the remaining studies focussed on aspects of metacognition, such as thought suppression.

The papers have been grouped by methodology and design. Firstly, quantitative studies that had an experimental design are critiqued, these papers focussed on the presence of suppression rebound effects and/or the effects of suppression on eating behaviour. Secondly, papers that primarily investigated metacognitive factors using questionnaires were evaluated. Finally, two studies using qualitative methods were reviewed.

Table 1.

*The Stages in Refining the Literature Search*

Stage	Search Term/Process	Reported Hits
1	Metacognition [Exploded term]	4474
2	“Meta-cog*”	751
3	Thought suppression [Exploded term]	425
4	“Thought control”	391
5	1 <b>OR</b> 2 <b>OR</b> 3 <b>OR</b> 4 [Metacognition <b>OR</b> “Meta-cog*” <b>OR</b> Thought suppression <b>OR</b> “Thought control”]	3966
6	Eating [Exploded term] Eating Behaviour [Exploded term] Eating Disorders [Exploded term, including Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Purging (eating disorder)] Eating Patterns [Exploded term]	339720
7	5 <b>AND</b> 6 [Metacognition <b>OR</b> “Meta-cog*” <b>OR</b> Thought suppression <b>OR</b> “Thought control” <b>AND</b> Eating, Eating Behaviour, Eating Disorders, Eating Patterns]	37
8	Reviewed 37 papers for relevance	20
9	Reviewing reference lists	0

Figure 3. Figure to show the process of selecting the journals for the review.

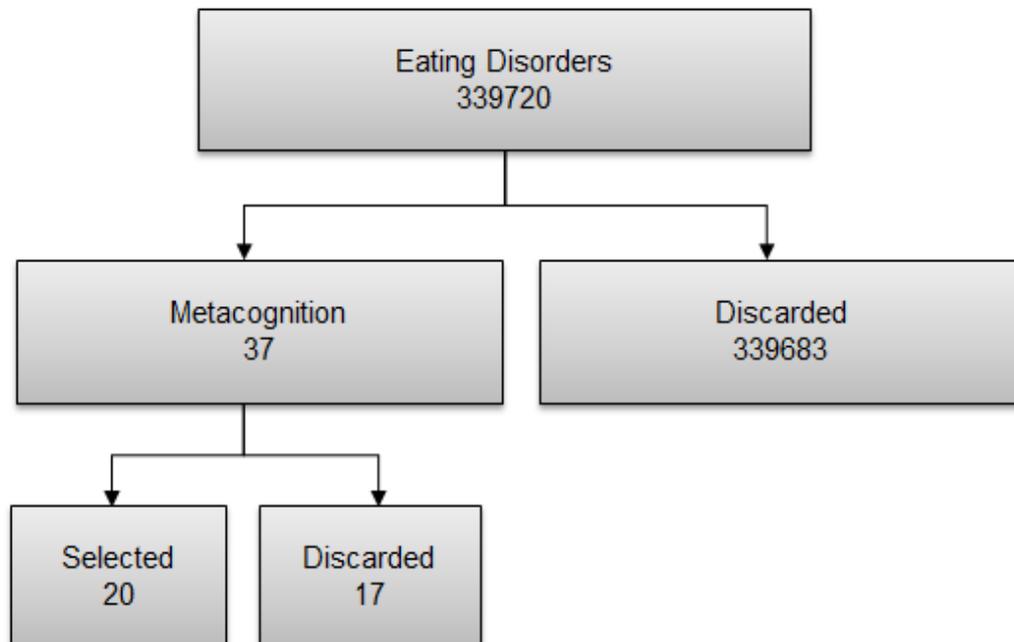


Table 2.

*Summary of the Literature Review Papers*

<b>No.</b>	<b>Author(s)/Year</b>	<b>Participants/Sample</b>	<b>Measures/Assessment</b>	<b>Key Findings</b>
1	Harnden et al., 1997	19 dieters 21 non-dieters Females (age = 20.0, BMI = 22.0)	- Suppression task - Eating Pathology (RS)	Suppression rebound effects were only demonstrated in non-dieters
2	May et al., 2010	39 females 9 males (age = 21.8)	- Suppression task - Suppression (WBSI) - Mindfulness (MAAS) - Eating Pathology (EAT)	No groups demonstrated suppression rebound effects
3	Oliver & Huon, 2001	Suppression groups 18 non-binge eaters and 20 binge eaters Non-suppression groups 19 non-binge eaters and 20 binge eaters Females (age = 20.0)	- Suppression task - Metacognition (TCQ) - Eating Pathology (TFEQ)	No groups demonstrated suppression rebound effects
4	Soetens & Braet, 2006	52 obese (age = 15.1, BMI = 168%) 32 dieters and 20 non-dieters 45 non-obese (age = 16.5, BMI = 104%) 18 dieters and 27 non-dieters Males and females	- Suppression task - Eating Pathology (DEBQ)	Suppression rebound effects were only observed in obese dieters
5	Soetens et al., 2006	19 dieters that binge eat 19 dieters that do not binge eat 39 dieters Females (age = 18.3, BMI = 20.9)	- Suppression task - Suppression (WBSI) - Eating Pathology (DEBQ, EDE-Q, EDI, TFEQ)	Suppression rebound effects were only observed in dieters that binge eat

*Note.* Participants: Assessments: Attitudes towards Chocolate Questionnaire (ACQ), Bulimia Test Revised (BULIT-R), Control of Intrusive Thoughts Questionnaire (CITQ), Dutch Eating Behaviour Questionnaire (DEBQ), Eating Attitudes Test (EAT), Eating Disorders Examination (EDE), Eating Disorders Examination Questionnaire (EDE-Q), Eating Disorder Inventory (EDI), Food Craving Inventory (FCI), Food Thought Suppression Inventory (FTSI), Mindful Attention Awareness Scale (MAAS), Restraint Scale (RS), Structured Clinical Interview for DSM Disorders (SCID), Three-Factor Eating Questionnaire (TFEQ), White Bear Suppression Inventory (WBSI). Age is mean age, BMI is mean BMI.

Table 2.

*Summary of the Literature Review Papers*

<b>No.</b>	<b>Author(s)/Year</b>	<b>Participants/Sample</b>	<b>Measures/Assessment</b>	<b>Key Findings</b>
6	Erskine, 2008	67 females 67 males (age = 22.6)	- Suppression task - Eating Behaviour (food consumption)	The suppression group consumed a greater volume of food than controls
7	Erskine & Georgiou, 2010	116 females (age = 22.6)	- Suppression task - Suppression (WBSI) - Eating Behaviour (ACQ, RS, food consumption)	Dieters in the suppression group consumed more chocolate than dieters in the non-suppression group
8	Johnston et al., 1999	20 chocolate cravers 22 non-chocolate cravers Females	- Suppression/computer task - Eating Behaviour (food craving questionnaire)	The suppression group performed better at the computer task, earning more chocolate than controls
9	O'Connell et al., 2005	32 dieters (age = 20.3, BMI = 23.4) 32 non-dieters (age = 18.7, BMI = 22.5) Females	- Suppression task - Metacognition (TCQ) - Eating Pathology (RS) - Eating Behaviour	There were no differences in food consumption. No groups demonstrated suppression rebound effects
10	Barnes & Tantleff-Dunn, 2010	213 females 99 males (age = 40.0, BMI = 32.6)	- Suppression (WBSI, FTSI) - Eating Behaviour (EDE-Q, FCI)	Food-related thought suppression was identified in females, dieters, and individuals who frequently use general thought suppression
11	Barnes et al., 2011	60 obese with BED 59 obese (non-binge eaters) Females and males (age = 47.7, BMI = 38.7)	- Suppression (FTSI) - Pathology (EDE-Q)	Food-related thought suppression was associated with eating pathology in males and females with BED and female non-binge eaters

Table 2.

*Summary of the Literature Review Papers*

<b>No.</b>	<b>Author(s)/Year</b>	<b>Participants/Sample</b>	<b>Measures/Assessment</b>	<b>Key Findings</b>
12	Barnes et al., 2013	128 females with BED (age = 47.4, BMI = 39.0)	- Suppression (FTSI) - Pathology (e.g., EDE)	Food-related thought suppression was associated with eating pathology and rumination
13	Lavender et al., 2009	219 males 187 females (age = 19.1, BMI = 24.0)	- Suppression (WBSI) - Mindfulness (MAAS) - Eating Pathology (BULIT-R)	While accounting for BMI, high thought suppression and low dispositional mindfulness accounted for 18% of the variance in bulimic symptoms
14	Lavender et al., 2012	296 males (age = 18.9, BMI = 25.4)	- Suppression (WBSI) - Eating Pathology (EDE-Q) - Emotions	Thought suppression mediates the relationships between negative affect and eating disorder symptoms
15	Soetens et al., 2008	44 obese (age = 15.2, BMI = 149.7%) 27 dieters that binge eat 17 dieters that do not binge eat  61 non-obese (age = 15.0, BMI = 102.3%) 26 non-dieters 20 dieters that binge eat 15 dieters that do not binge eat Males and females	- Suppression (WBSI) - Metacognition (TCQ) - Eating Pathology (DEBQ)	Dieters who binge eat scored higher on the WBSI than dieters who do not binge eat and non-dieters (in both weight groups)
16	Cooper et al., 2007	16 history of AN (age = 29.6, BMI = 18.4) 15 dieters (age = 34.0, BMI = 24.2) 17 non-dieters (age = 26.2, BMI = 21.0) Females	- Metacognition (MCQ) - Eating Pathology (SCID) - BMI	AN group reported higher levels of metacognitive dysfunction than both control groups

Table 2.

*Summary of the Literature Review Papers*

<b>No.</b>	<b>Author(s)/Year</b>	<b>Participants/Sample</b>	<b>Measures/Assessment</b>	<b>Key Findings</b>
17	Kollei et al., 2012	32 AN (age = 26.9, BMI = 15.6) 34 BN (age = 25.9, BMI = 21.0) 31 BDD (age = 28.8, BMI = 22.0) 33 Controls (age = 26.9, BMI = 22.7) Females and males	- Metacognition (e.g., CITQ) - Pathology (e.g., SCID) - Emotion	All clinical groups were similar in their use of thought control strategies. There were higher levels of metacognitive dysfunction in the clinical groups than healthy controls
18	McDermott & Rushford, 2011	74 AN (age = 24.3, BMI = 16.7) 93 Controls (age = 27.3, BMI = 22.1) Females	- Metacognition (MCQ) - Eating disorder screening tests	AN group reported higher levels of metacognitive dysfunction than the control group
19	Vann et al., 2013	9 AN (BMI = 17.2) 9 BN (BMI = 22.8) 9 EDNOS (BMI = 20.4) Age = 26.2	- Metacognition (semi-structured interview)	All groups presented with metacognitive dysfunction. Negative internal states were described as reassuring and comforting. Patients described perseverative thinking and self-focussed attention.
20	Woolrich et al., 2008	15 AN (age = 31.3, BMI = 16.2) 17 dieters (age = 29.3, BMI = 25.5) 18 non-dieters (age = 29.8, BMI = 20.5) Females	- Metacognition (semi-structured interview, TCQ) - Eating Pathology (EAT, EDE, DEBQ, SCID)	Metacognitive dysfunction was observed in each group, however the AN group demonstrated greater use of metacognitive strategies

Collectively the contribution, scope and rigour of the studies were evaluated. Quantitative studies were critiqued on the validity of the measures or assessments, controls (e.g., double-blinding) and reviewing the statistical analyses, sample size and power calculations. Qualitative studies were appraised by considering the choice of assessment tools, analyses, and trustworthiness of the data for example.

#### **1.9.3.1. *Suppression tasks.***

The review considers two sets of studies involving a suppression task, first studies investigating suppression rebound effects per se will be presented, followed by papers investigating the effects of suppression on eating behaviour.

Five studies used an experimental paradigm that primarily assessed for increases in 'target' thoughts following thought suppression which typically involved a modified version of the 'stream of consciousness procedure' developed by Wegner (1989). This requires participants to verbalise their thoughts during a series of trials. Usually the first trial requires subjects to think about any subject they wish. The second trial involves participants either suppressing their thoughts on food, eating, or weight (suppression group) or to continue to think about anything (non-suppression group). In the third trial subjects are again instructed to think about anything. This procedure aims to detect an increase in thoughts relating to food, eating or weight following the suppression task, termed the suppression rebound effect (Harnden, McNally, & Jimerson, 1997).

Wegner (1994) proposed the ironic processing theory to account for the paradoxical increase in target thoughts (e.g., about food, eating or weight) following cessation of thought suppression. The theory states that two processes are activated to control thoughts. One of these processes, an 'operating process', promotes the change by suppressing the thought (e.g., "do not think of food"), whereas the other 'monitoring process' involves identifying mental contents inconsistent with the task of thought suppression (e.g., searching for thoughts about food). Following cessation of the operating process (e.g., the instruction to stop suppressing thoughts about food), the monitoring process generates a vulnerability to having certain thoughts (e.g., as it

continues to search for thoughts about food), and as such constitutes metacognitive dysfunction. In the S-REF model, this process could represent input from the meta-system which guides plans to monitor cognitive information from lower level processing units and control cognitions at the online level. One could hypothesise that subsequent failure to fully terminate these processes may be accounted for by a residual discrepancy between a perceived and an ideal self-state for example (Wells, 1991, 2000).

The findings from studies one to five in Table 2 are inconsistent; a number of papers demonstrated increases in 'target' thoughts relating to food, eating, or weight following the suppression task, however this effect was notably absent in other studies. Three studies indicated that the incidence of 'target' thoughts increased after cessation of thought suppression in at least one of the participant groups. This rebound effect was demonstrated in non-dieters, binge eaters, and obese dieters (Harnden et al., 1997; Soetens & Braet, 2006; Soetens, Braet, Dejonckheere, & Roets, 2006). However, in four of the five experimental studies at least one participant group did not exhibit the hypothesised increase in thoughts (e.g., concerning food) following periods of suppression. These groups included dieters, non-dieters, binge eaters, and non-binge eaters (Harnden et al., 1997; May, Andrade, Batey, Berry, & Kavanagh, 2010; Oliver & Huon, 2001; Soetens & Braet, 2006).

Researchers suggested that the absence of rebound effects may be related to the emotional relevance of food, eating and weight-related thoughts in individuals with eating and weight concerns (McNally & Ricciardi, 1996; O'Connell, Larkin, Mizes, & Fremouw, 2005; Roemer & Borkovec, 1994; Soetens & Braet, 2006). Also it may be difficult to detect the presence of rebound effects in dieters who may have previously engaged in a series of suppression and rebound cycles (Harnden et al., 1997; O'Connell et al., 2005). Oliver & Huon (2001) highlighted that binge eaters may present with a greater motivation to suppress 'threatening' thoughts (e.g., related to food). Yet repeatedly failing to suppress cognitions may lead to preoccupation with those thoughts (Wegner, 1992, 1994) and subsequently influence behaviour (e.g.,

Erskine, 2008). Clinically, this research has led clinicians to question the effectiveness of advising patients to suppress unwanted thoughts (Soetens, Braet, & Moens, 2008).

Four studies assessed whether suppression of hyper-accessible cognitions (i.e., thoughts about food) influenced eating behaviour (studies six to nine in Table 2). One of the studies by O'Connell et al. (2005) extended previous research by providing half of the participants with food prior to the suppression task. It was hypothesised that offering palatable foods to dieters would result in subsequent overeating. In contrast, there were no differences in food consumption between groups, and no increases in target thoughts after the suppression task. However, three studies investigating behaviour following thought suppression identified that thought suppression affected subsequent food-related behaviour (e.g., individuals in the thought suppression condition consumed larger quantities of food than controls; Erskine, 2008; Erskine & Georgiou, 2010; Johnston, Bulik, & Anstiss, 1999). Therefore there is evidence that implementing thought suppression as a thought control strategy may influence behaviour.

### **1.9.3.2. Questionnaire-based studies.**

Fourteen studies assessed metacognitive factors by administering questionnaires, however only nine of the papers used this as the main focus of the study. Studies 10-15 in Table 2 explored the relationship between thought suppression and eating behaviour or eating disorders. Barnes and Tantleff-Dunn (2010) administered a measure of food-related thought suppression in addition to the generic thought suppression measures used in the other studies, and found higher levels of food-related thought suppression in females, dieters and those who frequency use thought suppression in general.

One study identified that high thought suppression in part predicted bulimic symptoms (Lavender et al., 2009). A further study by Lavender, Anderson, and Gratz (2012) indicated that the relationship between negative affect and eating disorder symptoms in males was mediated by thought suppression. Metacognitive models of eating disorders suggest that metacognitions (e.g., "I can calm my mind by

suppressing my thoughts”) mediate the relationship between emotions and eating behaviour (Cooper, 2012; Cooper et al., 2009). In individuals with BED, thought suppression (i.e., concerning food) was related to disordered eating and rumination, a key part of the CAS (Barnes, Masheb, & Grilo, 2011; Barnes, Sawaoka, White, Masheb, & Grilo, 2013; Wells & Matthews, 1994). Indeed, binge eaters score highly on measures of thought suppression and tend to use metacognitive strategies including worry, punishment, and distraction (Soetens et al., 2008).

Evidence from three quantitative studies is consistent in demonstrating that individuals with AN score highly on indices of metacognitive dysfunction (papers 16-18 in Table 2; Cooper et al., 2007; Kollei et al., 2012; McDermott & Rushford, 2011). Kollei et al. (2012) aimed to investigate metacognitive control strategies in BDD and used AN as one of three comparison groups. The clinical groups presented with similar levels of dysfunction.

Two of the three quantitative studies that consisted of a sample of individuals with AN were presented in Section 1.7. The first study by Cooper et al. (2007) indicated that individuals with AN score highly on factors relevant to metacognitive dysfunction with the exclusion of positive beliefs about worry. The McDermott and Rushford (2011) paper evidenced that this clinical group score highly on all five indices of the MCQ, although the significant effect of positive beliefs about worry was eliminated by controlling for BMI. The inconsistency between the two studies on positive beliefs about worry in AN may be a result of the difference in symptom severity between the two samples given the impact of controlling for BMI (McDermott & Rushford, 2011). In the first study participants were described as having a history of AN and a mean BMI of 18.4 (Cooper et al., 2007), while most of the patients in the second study had a current diagnosis and therefore a lower mean BMI (16.7; McDermott & Rushford, 2011).

All three papers indicated that metacognitive factors play a role in AN, overall this clinical group tends to excessively monitor and control their cognitions, hold beliefs about the dangers and uncontrollability of thoughts, present with negative beliefs

concerning impact of failure to control one's thoughts, and distrust their cognitive abilities (Cartwright-Hatton & Wells, 1997; Cooper et al., 2007; Kollei et al., 2012; McDermott & Rushford, 2011).

#### **1.9.3.3. Qualitative methods.**

As discussed earlier, two studies focussed on metacognition in eating disordered groups using qualitative methodologies (studies 19-20 in Table 2). Woolrich et al. (2008) conducted a study which involved a semi-structured interview with individuals with AN and healthy controls, using the metacognitive profiling template. The metacognitive profiling template by Wells and Matthews (1994) enables clinicians to gain detailed information on meta-beliefs (e.g., "restricting allows me to relax and focus my thoughts"), coping strategies, and cognitive processes that occur during times of distress (Wells, 2000). The findings were consistent with quantitative studies on metacognitive profiling in AN. The researchers concluded that individuals with AN may try to purposely use cognitive processes to feel worse, in order to create a stable view of themselves which is consistent with their negative self-concept. The authors note that this is in line with self-verification theory, which suggests that individuals instinctively seek to confirm their self-beliefs (Swann, Wenzlaff, & Tafarodi, 1992).

The study by Vann et al. (2013) implemented a rigorous design to investigate patients' cognitions about their own thoughts and feelings, as metacognitive theory can be applied to emotions in addition to cognitions (Manser, Cooper, & Trefusis, 2012; Wells, as cited by Manser et al., 2012). Overall, the results supported previous research and indicated that there may be a transdiagnostic metacognitive profile for eating disorders in adults. This move towards a transdiagnostic metacognitive model is consistent with a cognitive model of eating disorders by Fairburn et al. (2003).

#### **1.9.4. Evaluation of the studies.**

There were a number of methodological problems that had impacted on the rigour of the research. A key problem with a number of the studies is that only one dimension of the construct of metacognition was measured, that of thought

suppression (Lai, 2011). This is further compounded in the experimental studies by using the stream of consciousness procedure that required participants to verbalise their thoughts; researchers argue this can fail to capture implicit cognitive processes, i.e., the mechanisms involved in metacognition (Lai, 2011; Wells, 2000; Whitebread et al., 2009).

Further problems that affected quality of the research are that all studies used cross-sectional data (Elmes, Kantowitz, & Roediger, 2003). Several papers included small sample sizes which Cohen (1992) highlights can affect power (e.g., Cooper et al., 2007). There was evidence of sampling bias (e.g., Dingemans, Bruna, & van Furth, 2002; May et al., 2010) and use of arbitrary cut-off points to identify individuals in the sample as either high or low on binge eating (e.g., Soetens et al., 2008). Furthermore there was non-reporting of demographic variables, such as age (e.g., Johnston et al., 1999) or BMI (e.g., Erskine, 2008; Erskine & Georgiou, 2010).

On a positive note, techniques to reduce error including blinding, randomisation, and a large sample size, which were implemented in studies by Harnden et al. (1997), Soetens and Braet (2006), and Barnes and Tantleff-Dunn (2010), respectively (Cohen, 1992; Kaptchuk, 2001). In terms of the assessments, the metacognitive profiling interview template (Wells & Matthews, 1994) has led to the development of specific models of psychopathology, and was used in the study by Woolrich et al. (2008; Wells, 2000). Furthermore, two papers focusing on metacognition in AN assessed the global construct of metacognition by administering the MCQ (Cartwright-Hatton & Wells, 1997). This measure is widely used in the literature and the authors have demonstrated good psychometric properties. The paper by Vann et al. (2013) implemented a rigorous design and added a further dimension to the research by focusing on thoughts about both cognitions and emotions.

On balance, the best evidence comes from the studies by McDermott and Rushford (2011) and Vann et al. (2013). The former paper identified metacognitive dysfunction in individuals with AN, and benefitted from a large sample size, the use of

well-validated global measure of metacognition, a clinical population and accounted for BMI. Indeed this was the only paper to report effect sizes, which presented moderate to large effect sizes (Durlak, 2009). However, the latter qualitative study boasts a good design, the data supported the proposed metacognitive model of eating disorders and the researchers were reflexive in considering the impact of their beliefs on the interpretation of the findings (Mays & Pope, 2000).

#### **1.9.5. Conclusions from the literature review.**

The purpose of the literature review was to explore the literature on metacognition in eating behaviour and eating disorders. This review included 20 papers, yielded from searching databases from the National Library for Health's website. As an emerging area of research, the quantity of papers relating to metacognition in the context of eating behaviour and eating disorders is limited. The studies assessed either the global construct of metacognition or thought control strategies (e.g., using questionnaires) or one aspect of metacognition (e.g., using an experimental paradigm).

There were inconsistencies both within and between the experimental studies that assessed for increases in target cognitions post-suppression or changes in eating behaviour (Erskine, 2008; Erskine & Georgiou, 2010; Harnden et al., 1997; Johnston et al., 1999; May et al., 2010; O'Connell et al., 2005; Oliver & Huon, 2001; Soetens & Braet, 2006; Soetens et al., 2006). Therefore, it is difficult to draw conclusions from this set of studies regarding a definite relationship between metacognitive factors and eating behaviour or eating disorders.

Researchers indicated that binge eaters present with metacognitive dysfunction (Oliver & Huon, 2001; Soetens et al., 2006; Soetens et al., 2008) and identified a relationship between food-related thought suppression and eating disorders (Barnes et al., 2011; Barnes et al., 2013). The small number of studies assessing the global construct of metacognition evidenced that individuals with AN present with metacognitive dysfunction (Cooper et al., 2007; McDermott & Rushford, 2011). The qualitative papers provided rich data and were consistent with the findings

from the questionnaire-based studies that indicate an association between metacognition and AN (Vann et al., 2013; Woolrich et al., 2008), in line with the S-REF model and metacognitive model of AN (Cooper, 2012; McDermott & Rushford, 2011; Wells & Matthews, 1994).

#### **1.9.6. Summary.**

The literature review consisted of 20 studies investigating the impact of suppression and/or the presence of metacognitive dysfunction.

##### **1.9.6.1. Results for Papers on Eating Behaviour.**

Five papers implemented an experimental paradigm to assess for suppression rebound effects with dieters, non-dieters, binge eaters, and non-binge eaters. However, in four of these studies the hypothesised increases in target thoughts post-suppression was absent (Harnden et al., 1997; May et al., 2010; Oliver & Huon, 2001; Soetens & Braet, 2006).

The impact of suppressing thoughts about food on subsequent eating behaviour was explored in four studies, where three papers found that thought suppression had an impact on food-related behaviour (Erskine, 2008; Erskine & Georgiou, 2010; Johnston et al., 1999).

Four questionnaire-based studies assessed metacognitive factors in analogue populations, where levels of food-related thought suppression were high in dieters for example (Barnes & Tantleff-Dunn, 2010; Soetens et al., 2008).

##### **1.9.6.2. Results for Papers on Eating Disorders.**

Firstly, Lavender and colleagues identified thought suppression as a predictor of eating disorder symptoms, and secondly that negative affect and eating disorder symptoms were mediated by thought suppression in males (Lavender et al., 2012; Lavender et al., 2009).

Food-related thought suppression in individuals with BED was investigated in two questionnaire-based studies, which indicated an association between eating pathology and suppression (Barnes et al., 2011; Barnes et al., 2013).

The presence of metacognitive dysfunction in eating disorders was assessed in five studies. Three quantitative studies found that individuals with AN reported higher levels of metacognitive dysfunction than controls (Cooper et al., 2007; Kollei et al., 2012; McDermott & Rushford, 2011). The data from the Vann et al. (2013) qualitative study was developed into a metacognitive model, while the Woolrich et al. (2008) paper identified themes (e.g., protection and survival). Together these qualitative studies indicated that individuals with eating disorders present with a level of metacognitive dysfunction (Vann et al., 2013; Woolrich et al., 2008).

#### **1.9.6.3. *Rationale for the Current Study.***

The literature review formed the basis for this study and indicated that further qualitative research was required to explore the global construct of metacognition in adolescents with AN.

The evidence-base and metacognitive models together suggested that metacognitive dysfunction may serve as a key maintaining factor in AN (Cooper, 2012; Vann et al., 2013; Wells & Matthews, 1994). However, early studies have primarily relied upon deductive methods to investigate metacognition (Vann et al., 2013). It is argued that these quantitative approaches may have failed to fully capture the metacognitive profile of AN, especially as the questionnaires administered to assess metacognition (e.g., TCQ and MCQ) were developed for anxiety disorders and OCD (Cartwright-Hatton & Wells, 1997; Vann et al., 2013; Wells & Davies, 1994). Indeed, the results of the literature review indicate that there is uncertainty regarding the role of positive beliefs about worry in AN per se and further qualitative exploration may be beneficial at this early stage. Recently researchers have called for further qualitative studies on metacognition in AN (Kleinbichler, 2013; Vann et al., 2013).

Adolescents are under-represented in the literature, only two studies recruited adolescents and this represented an analogue sample. The research on metacognition and AN has focussed solely on adult samples, while the emergence of the disorder is typically in adolescence. Identifying patterns in metacognitive responding in young people is important in considering treatment for this age group.

Indeed, understanding thinking and the way cognition generates our conscious experiences is considered imperative (Wells, 2009).

#### **1.10. Aims of the Study**

The aims of this qualitative study were to explore metacognition and the role of memory in adolescents with AN.

#### **1.11. Research Questions**

The primary and secondary research questions that were the focus of the study are outlined below:

- i. To explore and describe the metacognitive profile of adolescents with AN.
- ii. To understand and capture the role of memory in relation to eating pathology in adolescents with AN.

It was believed that this age group may present with metacognitive dysfunction in line with adults with AN. These findings were anticipated as psychopathology is related to activation of the CAS (Wells, 2000) and as Wilson and Hall (2012) identified comparable metacognitive profiles between adolescents and adults with the same psychiatric diagnosis.

As individuals with AN excessively monitor and control their cognitions (Cooper et al., 2007; Kollei et al., 2012; McDermott & Rushford, 2011; Vann et al., 2013; Woolrich et al., 2008), it was believed that this control of cognitions may extend to memories, where individuals may use recollections of their past experiences to maintain the disorder or reinforce dietary restriction. Individuals may recall adverse life events or systemic influences that are relevant to their presentation.

Overall, the researcher considered that the results may firstly reflect that young people with AN would present with metacognitive dysfunction consistent with the adult population. Secondly, young people diagnosed with AN may describe negative early experiences relevant to their eating disorder diagnosis and may use metacognitive strategies to control these memories.

## **1.12 Chapter Summary**

This chapter provided the background literature to the study concerning AN, memory, and metacognition. Metacognitive theory, the S-REF model and the CAS were applied to AN and key studies on metacognition and AN were presented that indicated adults with AN present with metacognitive dysfunction (Wells & Matthews, 1994). A literature reviewed critiqued the papers concerning metacognitive factors, eating disorders and the wider category of eating behaviour. Finally, the chapter concluded with the rationale and research questions for this thesis on metacognitive factors and memory in young people with AN. The next chapter describes the study's methodology.

## **Chapter Two**

### **2. Method**

#### **2.1 Chapter Overview**

This chapter firstly describes the design of the study, including the participants, recruitment methods, and the way that metacognition and memory were assessed. Secondly, the procedure and ethical considerations for the study are presented. The final sections describe the processes involved in conducting a TA and ensuring quality in qualitative research.

#### **2.2. Design**

Qualitative research aims to understand both processes and experiences (Thompson & Harper, 2012). Qualitative approaches can focus on an individual's account of their experiences, their understanding, and the meanings assigned to a particular phenomenon or occurrence (Berg, 2004). Therefore, these methods can enable investigators to capture the experience and the nature of emotional disorders from an individual's perspective (Barker, Pistrang, & Elliott, 2002; Thompson & Harper, 2012).

This study was qualitative in nature to allow for an in-depth exploration of the metacognitive profile and the use of memory (i.e., the use of cognitive processes involved in memory that may serve to sustain the disorder) in adolescents with AN. The research considered the participants' experiences of using metacognitive processes in controlling thoughts and their recollection of events that may have contributed to the development and maintenance of the disorder. A semi-structured interview was conducted to explore metacognition and memory (Wells & Matthews, 1994). The Eating Attitudes Test-26 (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982) and the Structured Clinical Interview for DSM-IV-TR Disorders, Research Version (SCID-I-RV; First, Spitzer, Gibbon, & Williams, 2002) were used to contextualise the findings of the study. Overall, these two measures provided information on cognitive factors relevant to the study and on the onset, duration and severity of AN.

In qualitative studies researchers need to clarify their philosophical stance, the foundations of which are in ontology and epistemology (Lombardo, 1987; Schuh & Barab, 2008). Epistemology considers the way we access information about what exists, and the relationship between the researcher and research participant (Ponterotto, 2005; Schuh & Barab, 2008), while “ontology concerns the nature of reality and being” (Ponterotto, 2005, p. 131).

The perspective of the researcher is one of critical realism, which is compatible with TA (Braun & Clarke, 2006). Proponents of this paradigm argue that the existence of the real world is independent of human perception, while acknowledging peoples’ understanding of the world is only available through subjective interpretations (Au, 2007; Benton & Craib, 2001; Bhaskar, 1989; Easby, 2010). Therefore the researcher considers there to be one true reality; although recognises the imperfect nature of accessing and subsequently interpreting information (Ponterotto, 2005). The implications of accessing a distorted perception of reality are that individuals are likely to hold differing views (Howitt & Cramer, 2008).

TA was used to explore the entire dataset that was derived from the metacognitive profiling interview that was outlined in Section 2.5.2. TA was regarded as an appropriate way of analysing the data in this study based on the research questions, methodology and strengths of this approach (Braun & Clarke, 2006). In recent years, TA has gained recognition as a frequently used, flexible approach to analysing qualitative data (Braun & Clarke, 2006; Joffe, 2012). This analytic approach is considered to be sophisticated, comprehensive and one that can be well-executed by investing time and resources (Howitt & Cramer, 2008). This method offers ‘theoretical freedom’ as it is compatible with a range of epistemological (i.e., theoretical) perspectives (Braun & Clarke, 2006). The aim of TA is to understand a phenomenon by interpreting and classifying the data into themes. Themes capture patterns or meanings embedded in the data that are considered to be relevant to one’s research questions (Braun & Clarke, 2006).

### **2.3. Participants**

Nine adolescent females aged 15-17 who were receiving treatment following a diagnosis of AN participated in the study. Participants were receiving either inpatient or outpatient support from services specialising in the care of young people with eating disorders. The only exclusion criteria were patients who were medically unwell or those diagnosed with learning disabilities. Practitioners used their risk assessment and clinical judgement to determine whether an individual was medically fit to take part in the study.

The size of the sample was consistent with other qualitative studies assessing the metacognitive profile of individuals with mental health difficulties (Ferne & Spada, 2008, Nikčević & Spada, 2010; Rafique, 2010; Spada & Wells, 2006).

### **2.4. Recruitment**

Services within Norfolk and Suffolk NHS Trust (NSFT) and North Essex Partnership University NHS Foundation Trust (NEPFT) that provided care to young people with eating disorders were approached to recruit participants. These services consisted of Paediatric Eating Disorder Services and Child and Adolescent Mental Health Services (CAMHS). Participants were recruited from a total of three services.

The clinicians provided details of the study and information packs to potential participants and their families. The information packs included information sheets for both the young person and their parents, and a return envelope. There were two ways that potential participants could notify the researcher of their interest in the study. Participants could provide their contact details by post using the tear-off slip from the information sheet or practitioners could gain the families' consent to contact the researcher directly and pass on contact information.

### **2.5. Assessments**

The assessments were conducted by the researcher in sequence, starting with the EAT-26, moving to the SCID-I-IV and finally progressing to the metacognitive profiling interview. By completing the EAT-26 and SCID-I-RV prior to commencing the metacognitive interview, the researcher gained information on possible unhelpful

thinking styles (i.e., perseveration) and information on the precipitators, onset, duration, and severity of the disorder.

### **2.5.1 Eating disorders.**

Individuals' eating disorder symptoms were assessed primarily using the SCID-I-RV (First et al., 2002) and EAT-26 (Garner et al., 1982). The severity of the eating disorder at the point of entry to the service was established either during the interviews or by reviewing the clinical notes. Factors such as weight and height, level of dietary restriction, and disturbance in body perception were also considered.

#### **2.5.1.1. Structured Clinical Interview.**

The SCID-I-RV (First et al., 2002) is comprised of two parts; the first part of this interview concerns demographic information and leads into questions on the presenting problem, while the second part of the interview considers the diagnosis.

The rationale for selecting the SCID-I-RV was that the first section offered the researcher the opportunity to gain qualitative background information on the participants' presenting problems prior to commencing the audio-recorded metacognitive profiling interview (First et al., 2002). Key questions from the SCID-I-RV refer to the onset (e.g., "when did this begin?"), precipitating factors (e.g., "what was going on in your life when this began?"), and treatment history (e.g., "what treatments did you get?") for example (First et al., 2002).

The second section of the SCID-I-RV parallels the DSM-IV-TR and represents the latest version of this clinical assessment tool (APA, 2000; Columbia University, 2014; First et al., 2002). The AN module of the SCID-I-RV aims to identify if individuals are refusing to maintain a medically healthy weight, experiencing a pathological fear of gaining weight, holding a distorted perception of their body or shape, and experiencing amenorrhoea, consistent with the DSM-IV-TR diagnostic criteria for AN (APA, 2000; Davey, 2008; Lee, 1995). For example, one of the questions from the SCID-I-RV is "at your lowest weight, did you still feel too fat or that part of your body was too fat?" This aims to assess whether an individual fulfils Criterion C for AN, that a patient presents with a distorted view of their body size, their

self-evaluation is overly influenced by shape or weight, or that they deny the seriousness of their low weight (APA, 2000; Davey, 2008; Lee, 1995). As the diagnostic tool that aims to parallel the DSM-V remains at the developmental stage; the results of the SCID-I-RV were considered in terms of both DSM-IV-TR and DSM-V criteria (APA, 2000, 2013; Columbia University, 2014; First et al., 2002).

Zanarini et al. (2000) assessed the reliability of SCID to diagnose a range of Axis I and Axis II disorders from the DSM. In terms of diagnosing eating disorders, the authors reported an inter-rater reliability rate of .77 and a test-retest reliability coefficient of .64. Stice, Telch, and Rizvi (2000) tested an eating disorder measure against the SCID to find good criterion validity for diagnosing AN (.93).

#### **2.5.1.2. *Eating Attitudes Test.***

The original 40-item version of the EAT was developed to measure pathology associated with eating disorders (Garner & Garfinkel, 1979). The instrument was revised following factor analysis, thus creating the EAT-26 (Anderson, Lundgren, Shapiro, & Paulosky, 2004; Garner et al., 1982). The EAT-26 is a self-report questionnaire containing 26 items on a six-point Likert scale that assesses for risk of eating disorders, where the scale denotes the frequency of a given thought or behaviour. For instance, individuals can respond to the item “am terrified about being overweight” by selecting an answer ranging from “always” to “never”. Possible scores range from 0-78, and scores of 20 or above indicate that a clinical assessment is required to screen for any eating disorders (Garner et al., 1982).

The primary rationale for selecting the EAT-26 was that this age-appropriate measure consists of subscales that consider cognitive factors (e.g., preoccupation with food or thinness), which was helpful to review prior to the metacognitive profiling interview, especially as perseverating thinking is a key part of the CAS (Garner et al., 1982; Well & Matthews, 1994; Wells, 2000).

The EAT-26 consists of three subscales that are referred to as the dieting subscale (e.g., “give too much time and thought to food”), the oral control subscale (e.g., “cut my food into small pieces”) and the bulimia and food preoccupation

subscale (e.g., “find myself preoccupied with food”). The dieting subscale and the bulimia and food preoccupation subscale consist of cognitive items that are relevant to this study (Garner et al., 1982).

This measure can be used with individuals that are 13 years and above (Garner et al., 1982). There is an alternative version of the EAT for younger children, known as the Children’s version of the EAT or ChEAT (Maloney, McGuire, & Daniels, 1988), however the EAT-26 is suitable for the entire sample and was selected on those grounds. The authors of the EAT-26 demonstrated convergent validity (.61) with the Eating Disorders Inventory-2 (EDI-2; Garner, 1991) and good internal consistency of .90 (Garner et al., 1982). Permission was granted to reproduce this measure for research purposes.

### **2.5.2 Metacognitive Profiling Interview.**

Berg (2004) argued that interviews are an effective method of gaining information in qualitative studies. Semi-structured interviews offer the researcher flexibility during the research process, while ensuring that the participants are asked key questions (Berg, 2004).

The metacognitive profiling template by Wells and Matthews (1994) is a semi-structured interview that enables clinicians to gain detailed information on meta-beliefs, coping strategies, and cognitive processes that occur during times of distress (Wells, 2000).

Research using this interview has led to the development of specific models of psychopathology (e.g., the cognitive model of social phobia; Clark & Wells, 1995; Wells, 2000). This instrument has been used to explore metacognition in BDD (Cooper & Osman, 2007), depressive rumination (Papageorgiou & Wells, 2003), procrastination (Fernie & Spada, 2008), desire-thinking (Caselli & Spada, 2010), substance-related disorders (Nikčević & Spada, 2010; Spada & Wells, 2006) and AN (Woolrich et al., 2008).

The metacognitive profiling template serves as a guide and requires amendments to make the questions appropriate for a particular client group, and age

group in the case of this study (Wells & Matthews, 1994). A comparison between the original metacognitive profiling template to the adapted version used in the study can be found in Appendix A (Wells & Matthews, 1994). The concept of the zone of proximal development (ZPD) was considered in both developing the interview schedule and at the interview stage, where the researcher reflected on the participants' cognitive abilities. The ZPD concerns the developmental abilities of a child that rests between their unassisted and assisted capabilities, where a child's abilities are enhanced by the support of others (Bowler, Large, Beheshti, & Nasset, 2005; Vygotsky, 1978).

As the interview had previously only been used with adult populations, the researcher aimed to simplify interview questions and benefitted from reviewing the *Think Good-Feel Good* book (Stallard, 2003), which delivers CBT ideas to young people using a series of worksheets that are headed with explanations. The presentational style of these worksheets was translated to the interview schedule. Therefore, the interview opens with information about thoughts, and prior to each set of questions a brief explanation was offered to aid the participants' understanding. Consideration was given to presenting ideas on metacognition and the book served as a reference in terms of complexity of language (e.g., "sometimes we think about our own thoughts, for example, when a thought pops into our head, we may start to think about whether we want to have that thought or not"). Simplifying questions tended to involve a process of posing a closed question initially that aimed to determine if a particular phenomenon was present (e.g., "do you concentrate on your thoughts?"), prior to asking open-ended probe questions about their experience to gain rich data (e.g., "how helpful did you find concentrating on your thoughts?")

The interview questions were formed by reviewing previous metacognitive profiling studies, papers on metacognition in eating disorders, and blogs by individuals with AN. These questions were presented to a non-eating disordered 11-year-old girl for feedback, and subsequently amendments were made to establish suitable questions.

While the volume of questions in the metacognitive profiling template may indicate a greater level of structure to the interview, the researcher endeavoured to take a curious stance to the participants' responses and be flexible in using the interview schedule as a guide. Therefore, participants were provided with the freedom to move away from the structure of the schedule. For example, where participants described their early memories at the beginning of the interview, the researcher aimed to facilitate this discussion. This is in contrast to the interview schedule where questions concerning the role of memory feature at the end of the interview (Appendix B).

#### **2.5.2.1. *Anorexia nervosa.***

The interview opened with general questions about the onset, triggers and precipitating factors in AN, and began to explore their thoughts on the disorder (e.g., "what effect does AN have on your life?") Reviewing the findings of the Woolrich et al. (2008) study led to the inclusion of a question about the impact of living with AN, to consider whether young people experienced the disorder as restrictive, consistent with their adult counterparts.

#### **2.5.2.2. *The Cognitive attentional syndrome.***

The presence of the CAS in AN was considered by evaluating the information from the interview as a whole. Each of the domains that form part of the metacognitive profiling template, including meta-beliefs, coping strategies, attention, memory, mood and judgements were explored, as outlined below (Wells & Matthews, 1994).

#### **2.5.2.3. *Metacognitive beliefs and coping strategies.***

In this study, the profiling interview interspersed questions on meta-beliefs with those on coping strategies, therefore this section covers both domains. As described earlier, meta-beliefs refer to beliefs about cognition per se, the meaning one attaches to thoughts, and the perceived consequences of experiencing particular thoughts (Spada & Wells, 2006). Examples of positive and negative meta-beliefs include "not eating helps me to turn my attention away from my thoughts", and "I cannot control these thoughts about food" respectively.

The study explored whether adolescents with AN held both positive and negative meta-beliefs, as per the CAS (Cooper, 2012; McDermott & Rushford, 2011; Vann et al., 2013; Wells & Matthews, 1994; Woolrich et al., 2008). A qualitative paper by Cooper and Osman (2007) that investigated metacognition in BDD was reviewed to consider useful adaptations to the metacognitive profiling template for this study. The authors posed questions to BDD patients such as “when you experience the image, do you have any negative thoughts about it?” (Cooper & Osman, 2007, p. 151). This was helpful in generating the first question about meta-beliefs, which required participants to visualise their whole body in their mind, and then answer the following query “what thoughts are you having about this picture?” The researcher aimed to ask questions that were concrete in nature and easier for this age group to answer than the metacognitive profiling template questions (e.g., “do you have any negative thoughts about your thinking?”; Wells, 2000, p. 108; Wells & Matthews, 1994)

The researcher aimed to gain details on a range of coping strategies used by the participants by exploring the use of overt and covert strategies. Participants were invited to discuss their use of strategies (e.g., “can you tell me what you do to cope with your unhelpful thoughts?”) This was investigated further by asking participants about the use of specific metacognitive control strategies (e.g., “have you ever tried to push unhelpful thoughts away?”)

#### **2.5.2.4. Attention.**

As the CAS is associated with self-focussed attention, it was important to consider participants’ attentional processing (Wells, 2000; Wells & Matthews, 1994). Past research indicates that AN patients focus their attention on internal states, cognitions about not eating, and are less successful than dieters in attending to other people in times of distress (Vann et al., 2013; Woolrich et al., 2008). Therefore it was appropriate to assess for cognitive self-consciousness (i.e., excessive monitoring of thoughts) and to enquire about the impact of concentrating on internal or external information.

Reviewing a paper by Nikčević and Spada (2010) that investigated individuals' focus of attention while smoking, helped in considering the focus of attention in the context of 'not eating' or restricting food intake in individuals with AN.

The metacognitive profiling template included the question "were you focusing on your thoughts, on your feelings or the situation?" (Wells, 2000, p. 109; Wells & Matthews, 1994). The study version considered the focus of attention in the context of restricting food intake, and for simplicity, posed individual questions about thoughts (e.g., "did you concentrate on your thoughts?"), feelings (e.g., "did you concentrate on your feelings?") and the situation (e.g., "did you concentrate on what was happening around you?")

#### **2.5.2.5. Judgements.**

Vann et al. (2013) identified negative judgements about mental events in more than half of the AN sample, one example would be where patients evaluated their thoughts as abnormal. In this investigation, participants were invited to describe both their self-judgements and the evidence considered in forming those judgements. Wells (2000) proposed that individuals with emotional disorders tend to rely on internal information, therefore questions were asked to explore this further (e.g., "what sort of evidence did you look for?") A conversation on the relationship between disordered behaviour and self-judgements was opened by asking "has restricting your food intake ever affected how you judged yourself?"

#### **2.5.2.6. Mode.**

It was helpful to consider the mode of operation, as participants with AN were likely to present in the non-evaluative 'object mode' (i.e., taking an accepting approach to their thoughts) as opposed to the reflective 'metacognitive mode' where individuals are able to recognise their cognitions as distorted (Wells, 2000). Participants were asked two set questions that considered the mode of operation, one of the questions is an abbreviated version of the original question from the metacognitive profiling template, "at that time, did you accept your thoughts as facts?" The other question considered whether individuals were able to take a reflective stance to their thoughts

retrospectively (e.g., “looking back, can you tell me how well your thoughts matched what was really happening in that situation?”)

#### **2.5.2.7. Memory.**

The researcher was interested in exploring early memories and the role of memory. The metacognitive profiling interview was amended from “were any memories activated?” (Wells, 2000, p. 109; Wells & Matthews, 1994) to “when you have unhelpful thoughts, do any memories come to mind?” for simplicity.

Individuals were invited to describe specific autobiographical memories relating to their eating, weight and shape (e.g., “can you describe a powerful or strong memory about your eating, weight or shape?”) and instances of weight-related teasing. This led to a discussion on the use of these memories, and the effects of these experiences on their emotional state and their eating behaviour (e.g., “how did those memories affect your eating?”; Hinrichsen, Morrison, Waller, & Schmidt, 2007).

Finally, attention to eating, weight and shape in the family system was explored. The researcher invited participants to describe the way eating, weight and shape was discussed in the family system when they were younger. Individuals were asked questions about family food rules, and whether food functioned as a means of control (i.e., as a means of reward or punishment).

### **2.6. Procedure**

The clinical care team approached potential participants about the research. Clinicians provided an information pack, offered details of the study, and discussed ways of contacting the researcher. Once notified of a potential participant, the researcher approached the individual and their parents to discuss the study. Those who expressed an interest in taking part in the study were contacted to arrange a time to meet, where the young person and their parent were invited to consent to the study. Once both a young person provided assent (where participants were aged 15) or consent (for those aged 16-17) and their parent provided written or verbal consent as appropriate, the researcher began the study.

The questioning sequence started with demographic information, as this was considered to be non-threatening (Berg, 2004). The assessment then advanced to the EAT-26 and SCID-I-RV followed by the metacognitive profiling interview. The interviewing style aimed to be flexible and curious based on the responses from the participants, while the interview questions served as a guide. All responses from participants during the metacognitive profiling interview were digitally audio-recorded and later transcribed. Following the interview, participants were debriefed as to the purpose of the interview and offered the opportunity to comment on the researcher's interpretation of the data in the future (i.e., participant validation).

Following data analysis, participants were provided with a brief summary of the findings and asked to provide feedback. The participant validation interviews were conducted in person or over the phone and the feedback was digitally audio-recorded.

## **2.7. Ethical Considerations**

This research received NHS ethical approval from the NRES Committee East of England (Cambridge South) and approval from Research and Development departments based in Norwich (NSFT) and Essex (NEPFT; Appendix C). The University of East Anglia (UEA) sponsored the study and provided a Research Passport.

Information sheets were distributed to potential participants and their parents, and individuals were provided with the opportunity to ask questions. Children aged 15 years old who agreed to take part in the study were given an assent form to sign once the parents' consent form had been signed. While young people aged 16-17 were able to provide consent for themselves to join the study, the researcher liaised with their parents to ensure they were agreeable with their child's decision to take part (Appendix D). The researcher negotiated rest breaks and explained that participants had the right to withdraw from the study at any time.

All data were stored securely in accordance with the Data Protection Act 1998 (Parliament, 1998). Participants were informed of the limits of confidentiality at the start of the interview and that personally identifiable information would be removed

from their verbatim responses included in subsequent reports. Individuals were advised that extracts of their interviews would be used as part of a thesis project to be submitted to UEA, and form part of any related publications. Notably all names have been changed throughout this report for the purpose of confidentiality.

As the study focussed on early experiences and cognitive processes, the researcher considered ways of managing possible distress or disclosures that may arise. In the event that individuals presented in a distressed state or disclosed issues of concern, the researcher would offer participants support, remind individuals of their right to withdraw from the study, and share any concerns with others. Indeed, participants were advised that the researcher would liaise with the clinical care team, external professionals and family members for safeguarding purposes, as appropriate.

Most of the participants reported that taking part in the study had been beneficial for them personally, enabling them to reflect on their cognitive processes or experiences. One participant presented with a current, previously documented risk issue. This matter was discussed with the family and the lead clinician responsible for the care of this participant. While there were no changes or ill effects of the interview on the level of risk; this matter was documented to ensure the safety of the participant, in accordance with the protocol.

## **2.8. Conducting the Thematic Analysis**

A well-cited paper by Braun and Clarke (2006) presented a way of conducting a TA in a series of non-linear stages (Table 3). The first stage is considered to be the foundation for the analysis and to be an 'interpretative act' in itself (Braun & Clarke, 2006; Lapadat & Lindsay, 1999). The researcher's approach was to transcribe all the audio-recordings independently to immerse oneself in the data. The use of pedal-controlled transcription software enabled the researcher to listen to sections of tape and type with greater ease.

The researcher aimed to achieve consistency between each recording and transcript. This was accomplished by listening to each audio recording while reading the corresponding transcript (Braun & Clarke, 2006). Subjectivity in the way the

recordings are perceived and interpreted by the researcher is acknowledged, consistent with the critical realist perspective (MacLean, Meyer, & Estable, 2004).

The researcher had listened to the audio tapes on at least three occasions prior to beginning to read through the participants' accounts. The transcripts from participants one to nine were read and re-read in a cycle, several times to familiarise oneself with the dataset. By the end of this process, the researcher's ideas about the patterns in the data were recorded, these included 'the impact and response to thoughts', 'the content, impact and use of memory', the use of coping strategies' and 'the relationships with family and others' (Braun & Clarke, 2006).

Table 3.

*Stages in Conducting a Thematic Analysis*

<b>Stage</b>	<b>Task</b>
1	Becoming familiar with the data Transcribing Reading the data Recording initial thoughts and ideas
2	Producing an initial coding system Systematically coding pertinent parts of the data Reviewing the entire dataset
3	Generating the themes Organising codes into themes Ensuring data relevant to each theme is collated
4	Reviewing the themes Ensuring themes relate to extracts from the data and the dataset as a whole Developing a thematic map
5	Labelling and defining themes Name and define the themes Consider the narrative of the data
6	Completing the research report Ensuring the final report contains extracts from the data Linking the analysis of the data to the original study question and prior research

*Note.* This table is adapted from Braun and Clarke (2006, p. 35).

The researcher reviewed the literature on coding per se, TA, and on metacognitive theory prior to coding. Coding refers to a process of organising segments of the data into categories (Howitt & Cramer, 2008). This process was the focus of stage two of the analysis, where the researcher needed to be immersed in the data; and consider meanings to produce an initial set of codes (Braun & Clarke, 2006; Liamputtong, 2009).

Open coding of two of the transcripts led to the development of an initial coding system that was expanded on, as required. There was an iterative process of coding, reviewing the literature, and then coding. By the end of the initial coding phase, a total of 146 codes were identified from the data. Finally, there was a process of re-coding all the data in relation to all of the identified codes, to ensure this step in the analysis had been conducted in a systematic manner (Braun & Clarke, 2006). From this stage the process of organising the data was completed manually, and therefore the researcher decided to keep a photographic journal to capture key steps in the analysis. As extracts were collated into codes, the researcher's interpretation of these data extracts was supported by keeping surrounding text (i.e., contextual information).

The third stage consisted of organising established codes into themes. The researcher tested out combinations of codes and reviewed the collated data from within each theme to determine if the integration of the information was appropriate and meaningful. An iterative process of organising information and referring back to the transcripts and literature emerged. Six potential themes had been identified at the end of this stage, which needed to be further reviewed and evaluated. An initial 'thematic map' that evolved throughout the analysis, was produced to show relationships between themes, and served as a tool for organising themes into a framework (Braun & Clarke, 2012).

Stage four consisted of two phases that were aimed at reviewing the themes for quality purposes (Braun & Clarke, 2006, 2012). The researcher referred to the literature during this stage, and placed emphasis on the idea of developing an internally consistent narrative, i.e., coherence (Braun & Clarke, 2006; Stiles, 1993). Indeed, the researcher was conscious of ensuring there was coherence within any given theme and that themes were distinct from one another (Braun & Clarke, 2006; Patton, 1990).

Further refinement to the themes involved integrating the potential theme 'Meta-beliefs' into the 'Relationships in Anorexia Nervosa' theme, the key rationale for

this was that conceptually individuals' have a relationship with their own thoughts (Wells, 2008, 2009). The researcher confirmed that the themes reflected the dataset as a whole by re-reading each transcript and coding the data by theme (Braun & Clarke, 2012).

In the penultimate stage of the analysis the aim was to capture the essence of each theme and consider the narrative or story the dataset conveyed (Braun & Clarke, 2006). The process of considering the narrative of each of the themes involved reading the extracts that were relevant to each theme. Due to the volume of information for each theme it was helpful to read and re-read the information within one theme several times to capture the narrative and allow time for reflection. Once the narrative of the theme was considered, the themes were re-named where necessary, for example, the theme 'Ways of Responding' was renamed as 'Coping Strategies'. Following this, the codes and themes identified by the researcher were reviewed by a psychologist who has experience in using TA. The psychologist provided positive feedback on the analysis of the data, which aided reflexivity.

The researcher decided to present four of the five themes identified during the analysis in this report, as only four of the themes were relevant to the research question (e.g., the other theme concerned the trials and tribulations in the road to recovery). The final part of the process involved choosing and analysing key extracts to include this report (Braun & Clarke, 2006). Notably, the extracts presented in Chapters 3 and 4 are quoted 'verbatim' to reflect the participants' responses.

## **2.9. Quality in Qualitative Research**

Producing quality research is a key concern in both quantitative and qualitative studies. Several researchers have argued that the reliability of a qualitative study is established by demonstrating validity, given that reliability and validity are interconnected (Golafshani, 2003; Lincoln & Guba, 1985; Patton, 2002; Spencer & Ritchie, 2012). However, there is some debate on whether it is appropriate to use the terms reliability and validity in the context of qualitative research, as this can conflict with the philosophical stance of the researcher (Spencer & Ritchie, 2012). Instead,

researchers consider the quality of qualitative studies in terms of trustworthiness (i.e., the trustworthiness of the data and interpretations; Stiles, 1993).

Stiles (1993) presented a number of strategies for best practice in qualitative research that aim to contribute to trustworthiness of the observations or interpretations; these will be discussed in turn.

### **2.9.1. Orientation.**

The first recommendation concerns disclosing one's theoretical position, expectations and beliefs to enable the reader to consider the perspective of the researcher and the meaning attributed to the data (Stiles, 1993). The researcher's expectations and philosophical position were considered earlier; the following section describes the researcher's early conceptualisation of AN.

Sharing one's early conceptualisation of AN may offer the reader an insight into the perspective of the researcher. Although the researcher has worked clinically with individuals with eating disorders in the roles of assistant psychologist and trainee clinical psychologist, clinical experience is limited to a handful of cases. Prior to gaining an understanding of metacognitive theory (Wells, 2000), the researchers' initial conceptualisation of AN was informed by therapeutic work that involved using a CAT approach that is described below.

CAT was developed over 30 years ago and focuses on patterns in relationships and behaviour (Ryle, 1995). Integrated into the CAT framework is the concept of reciprocal roles, which refers to patterns of responding that are learned in childhood through interactions with one's parents (Ryle, 1995). Infants develop knowledge of the roles of both the child and parent in these exchanges and over time they re-enact these roles in relationships with others and the self (Ryle, 1995).

A 'critical-criticised' reciprocal role indicates that an individual experienced early parental criticism and felt criticised, as the child ages they learn to be critical towards others, and more crucially in eating disorders to themselves (Newell, 2012; Ryle, 1995). There are a number of other dominant reciprocal roles in AN, which

include controlling-controlled, rejecting-rejected, and conditionally accepting-striving (Newell, 2012; Treasure & Ward, 1997).

### **2.9.2. Internal processes.**

It is suggested that the researcher's internal processes activated during the study are presented to the reader. This concerns the impact of the research on the researcher, specifically the aspects of the study that posed challenges or changed one's perspective (Stiles, 1993). This criterion is particularly interesting to the researcher as the study focuses on internal processes (i.e., cognitions). This aspect of the study will be revisited in Section 4.3.1.2.

### **2.9.3. Engagement.**

Stiles (1993) promotes immersion and engagement with the data and research process, which lies in contrast to the idea of a detached researcher. While the price of engagement is considered to be possible distortions in the observations or interpretations, the disclosures made by the researcher about one's orientation and internal processes may enable the reader to in part compensate for distortions (Stiles, 1993). Furthermore, the approach to qualitative research needs to be reflexive in order to examine one's use of representation. This was achieved by using a reflexive journal, supervision, and attendance at the Qualitative Research Forum held at UEA (Woolgar, 1988). In this context, reflexivity refers to the influence of the researcher and the research process on the data obtained (Mays & Pope, 2000). Use of the reflexive journal involved documenting key aspects of designing and conducting the study and considering personal factors that could influence the study. Entries from the researcher's reflective journal can be found in Appendix E. Finally, gaining feedback from the psychologist who reviewed the coding and themes, presented a further opportunity for reflexivity (Johnson, 1997; Mays & Pope, 2000).

### **2.9.4. Questioning.**

This recommendation concerns the style of questioning employed by the researcher, where "what" questions are considered appropriate and preferable to "why" questions (Stiles, 1993, 1999). While the former can access a participants'

knowledge-base, the latter may require individuals to articulate their theories for a particular action or event (Stiles, 1993). As the research questions do not concern participants' attributions, the researcher aimed to refrain from using "why" questions, as demonstrated in the pre-set interview questions (Appendix A).

#### **2.9.5. Iteration and grounding.**

Iteration refers to a cyclical process where the researcher alternates between observation and interpretation of the findings (Stiles, 1999). This process can start at the interview stage and involves checking one's understanding of the participant's account. At the analysis stage, investigators are expected to cycle between reading and interpreting the text (Stiles, 1993). The participant validation stage offered the researcher a further opportunity to check understanding and interpretations with the participants.

The aim of grounding is to support any abstract interpretations by presenting concrete examples in the form of interview excerpts (Stiles, 1999). While the sixth stage of the TA involves offering the reader extracts, the researcher aimed to provide concrete examples consistent with this recommendation.

#### **2.9.6. Triangulation.**

Triangulation aims to strengthen a study by gathering data using several approaches or sources (Thurmond, 2001). In this study, the researcher triangulated the quantitative information gathered on eating disorder symptoms. This consisted of information from the EAT-26 (Garner et al., 1982) and SCID-IV-RV (First et al., 2002), which served to contextualise the findings of the study.

#### **2.9.7. Coherence, consensus and uncovering.**

Stiles (1993) notes that the reader should be presented with a narrative that demonstrates understanding, coherence (i.e., an internally consistent story) and integration of the data (Elliott, Fischer, & Rennie, 1999; Stiles, 1993, 1999).

Coherence is similar to the term resonance used by Lincoln and Guba (1990), which refers to the fit between the data and the researcher's theories and beliefs (Stiles, 1993).

An interpretative account or narrative is expected to 'uncover' an answer to a question and to change a reader's perspective (Stiles, 1993). The validity of the interpretations is supported when both the researcher and reader consider the narrative to be 'right' and self-evident once presented (Rosenwald, 1988; Stiles, 1993).

It is recommended that interpretations are presented to other researchers who have knowledge of the data in order to consider whether the narrative is convincing and if there is consensus amongst professionals on the findings (Stiles, 1993). Presenting and discussing the interpretations with a psychologist and the research team provided the opportunity to test interpretations, coherence and consider whether the findings were self-evident (Appendix E). Indeed, the researcher gained positive feedback from other professionals regarding the findings of the study (Sections 4.3.1.4 and 4.3.1.7.)

#### **2.9.8. Testimonial validity.**

Testimonial validity or participant validation involves presenting participants with the researcher's interpretations of the data to establish whether the findings reflect the participants' experience (Lincoln & Guba, 1985; Mays & Pope, 2000). Kotre (1984) suggested that a participant's reaction during the validation process can indicate support for one's interpretation. Responses that can be regarded as supportive of the findings include the participants indicating that they felt understood, their reactions being consistent with the narrative, and where the individual offers greater detail (Kotre, 1984; Stiles, 1993). The feedback provided during the participant validation stage can facilitate reflection as to whether the themes capture the important aspects of the data. The responses from the participants will be discussed in Section 4.3.1.5.

#### **2.9.9. Catalytic and reflexive validity.**

There is support for catalytic validity when a participant changes or demonstrates growth in response to hearing the researchers' interpretations (Stiles, 1993, 1999). This concept is similar to that of uncovering, although the focus is on the response of the participants as opposed to the reader (Stiles, 1993). In contrast,

reflexive validity considers the way the data changes the researchers' thinking or the underlying theory (Stiles, 1993). A discussion that focusses on these factors is provided in Sections 4.3.1.6. and 4.3.1.7.

## **2.10. The Researcher**

Allan and Goss (2012) suggest that eating disordered patients may compare themselves with a clinician, especially where the practitioner is female. The literature indicates that physical characteristics and age may affect the way this client group responds to an individual (Lowell & Meader, 2005; Rance, Clarke, & Moller, 2013). Indeed, the way the data is interpreted may be influenced by personal factors pertaining to both the researcher and the psychologist reviewing the findings. Therefore, for the benefit of the reader, the researcher that conducted the interviews was a 30-year-old white British female. The psychologist was a 38-year-old, white South African male that works as a clinical psychologist in the UK, and has an interest in psychodynamic and systemic models. It appears pertinent to mention that the researcher and the psychologist have a BMI in the normal range and have a healthy body image.

## **2.11. Chapter Summary**

This chapter described the design of the study and discussed adaptations to the metacognitive profiling interview for this research (Wells & Matthews, 1994). The procedure for conducting a TA (Braun & Clarke, 2006) was described and consideration was given to quality in qualitative research and the strategies employed at different stages of the study, from using a reflexive journal to reflecting on the participants' response to the findings. Finally, it is acknowledged that personal factors may have influenced the interview process or interpretation of the findings; therefore personal factors concerning the researcher and psychologist were presented. The next chapter focuses on the interpretation of the findings and the four themes identified in the dataset as a whole.

## Chapter Three

### 3. Interpretation of the Findings

#### 3.1. Chapter Overview

Firstly, information regarding the sample of participants will be discussed. Following this, the four themes of 'Relationships in Anorexia Nervosa', 'Cognition', 'Coping Strategies', and 'Early Experiences and Memory', that were identified in the data will be presented. Finally, there will be a discussion on the relationship between the themes.

#### 3.2. Participant Information and Descriptive Statistics

All nine participants satisfied the DSM-V criteria for a diagnosis of AN (APA, 2013). While only three participants would have fulfilled the stricter DSM-IV-TR criteria for the disorder, the remaining participants would be considered to have AN restrictive EDNOS (APA, 2000). Most of the participants received treatment on an outpatient basis, although one person was accessing support as an inpatient at the time of the assessment. Historically, two-thirds of the participants had been admitted to inpatient facilities for their eating disorder. Participants typically reported receiving one of two dominant therapies, CBT (67% of the sample) and family therapy (33% of the participants).

The participants' biographies are presented in Table 4, while Table 5 provides details on their presentation. The age of the participants ranged from 15-17 years ( $M = 16$ ,  $SD = .7$ ) and the BMI ranged from 15.4-19.1 ( $M = 17.8$ ,  $SD = 1.1$ ). The mean duration of the illness was 25.8 months ( $SD = 13.9$ ) while participants had been in treatment for an average of 19.3 months ( $SD = 14.0$ ). Six of the participants reported a family history of eating disorder symptoms. A table summarising this information can be found in Appendix F.

Table 4.

*Participants' Biographies*

'Name' (age)	Participant Information
Amy (16)	Amy had a BMI of 15.4 that reflected the lowest BMI of the sample, and she fulfilled the stricter diagnostic criteria for AN. Her difficulties with AN began in August 2012 following the loss of her grandmother and her families' relocation. She had been receiving outpatient treatment for three months and she had been working to a meal plan. Recently, she had been unable to attend school, however she was determined to overcome the illness and her personal ideal weight represented a higher BMI of 18.3.
Beth (16)	Beth described a family history of AN. She reported that her symptoms of AN arose in July 2012. One of the stressors at that time included exam pressures at her new school. Last year she was unable to attend school for a three month period, however by the time of the interview she had returned to school and she was working to a meal plan. She had a BMI of 17.8, although her personal ideal weight denoted a BMI of 17.2.
Cara (16)	Cara described experiencing difficulties at school at the time when her illness began in October 2010. At her lowest weight, Cara was unable to attend school for at least four months while she accessed support from a specialist inpatient eating disorders unit. Cara was attending school at the time of the interview and she presented as the most advanced in terms of recovery. There was no difference between her current and personal ideal weight (51kg; BMI of 18.7).
Dana (15)	Dana reported a history of EDNOS in the family. Her eating difficulties began in December 2012 when she experienced the loss of an important relationship. Following her CAMHS referral, she was hospitalised and subsequently transferred to an inpatient unit for four months where she required nasogastric tube feeding. Dana had since returned to school and she presented as motivated to recover; however there is a 5kg difference between her personal ideal weight (that denoted a BMI of 16.6) and current weight (that represented a BMI of 19.1).

*Note.* 'Personal ideal weight' refers to the participants own view of their personal ideal weight and does not reflect their medically ideal weight.

Table 4.

*Participants' Biographies*

'Name' (age)	Participant Information
Emily (16)	Emily had been receiving inpatient care to manage her eating disorder at the time of the interview. She also met the stricter diagnostic criteria for AN. She acknowledged experiencing the divorce of her parents as difficult and subsequently following a period of depression, her difficulties with AN emerged in June 2013. Emily expressed her hopes to overcome AN, although at the same time her reported personal ideal weight represented a BMI of 14.2.
Fiona (17)	Fiona reported a family history of eating disorders. In 2011, she encountered negative attention to her weight and problems in her peer group that triggered her AN. When she entered the service she was restricting her intake to 1000 calories per day and she was subsequently hospitalised. Following a six-week absence she returned to school. While Fiona was working hard on her recovery, her personal ideal weight was consistent with a BMI of 17.2.
Gemma (15)	Gemma reported that she began comparing herself to others which led to an increase in existing weight concerns in January 2013. She weighed 44.9kg (BMI of 17.5) when she entered the service. At times Gemma had restricted herself to 500 calories per day. Her BMI had increased to 18.3 by the interview and she was managing her difficulties while attending school. She reported that her personal ideal weight was below her current weight of 46.7kg (BMI of 18.3).
Helen (17)	Helen had a BMI of 16.9 and her symptoms fulfilled the stricter criteria for AN. Helen described a family history of disordered eating. Her difficulties began in November 2010 when she was experiencing several stressors. At the height of her restricting she consumed 60 calories per day and she had accessed support from an inpatient unit in the past. Helen voiced her hopes to recover although her personal ideal weight was 7kg below her current weight of 47.2kg, which reflected a BMI of 14.3.
Isabelle (16)	Isabelle reported a family history of eating disorders and that her difficulties started in May 2012 after she was assaulted. At the time she entered CAMHS, she was consuming 900 calories per day and her BMI was 17.1. She received inpatient care and missed school for over four months. She had since returned to school and her BMI had increased to 18.2. Her personal ideal weight of 40kg was consistent with a BMI of 15.4.

Table 5.  
*Information on the Severity of Anorexia Nervosa Symptoms*

Participant	Age	BMI	Height	Weight (Kg)				EAT-26 Scores				Duration of Illness
				Current	Lowest	Highest	Ideal	1	2	3	Total	
Amy*	16	15.4	1.60	39.5	38.1	51.7	46.9	3	0	3	6	18
Beth	16	17.8	1.59	45.0	41.8	57.6	43.5	21	7	16	44	19
Cara*	16	18.7	1.65	51.0	29.0	53.0	51.0	0	0	1	1	48
Dana*	15	19.1	1.60	48.8	35.6	58.0	42.5	8	0	2	10	16
Emily	16	17.2	1.57	42.4	37.8	43.0	35.0	35	12	16	63	9
Fiona	17	18.4	1.68	52.0	44.5	-	48.5	37	12	12	61	33
Gemma	15	18.3	1.60	46.7	41.9	-	< 46.7	31	14	15	60	16
Helen	17	16.9	1.67	47.2	42.6	65.8	40.0	35	12	14	61	46
Isabelle	16	18.2	1.61	47.1	40.0	48.5	40.0	24	9	13	46	27

*Note.* For the EAT-26, factor 1 is 'dieting', factor 2 is 'bulimia and food preoccupation', factor 3 is 'oral control'. Duration of the illness is in months. \* Amy, Cara and Dana presented with low scores on the EAT-26, this will be discussed further in Section 4.3.2.4. 'Ideal' weight refers to the participants own view of their personal ideal weight and does not reflect their medically ideal weight.

The EAT-26 scores ranged from 1 to 63 with a mean score of 36.4 ( $SD = 26.4$ ), where a score of 20 indicates eating difficulties (Garner et al., 1982). The mean scores for the dieting, bulimia and food preoccupation and oral control subscales of this measure were 21.5 ( $SD = 14.5$ ), 7.3 ( $SD = 5.9$ ), and 10.2 ( $SD = 6.3$ ) respectively. A discussion of these scores is provided in Section 4.3.2.4. The Cronbach's alpha level for the dieting (.97), bulimia and food preoccupation (.93), and oral control (.89) subscales indicated good internal consistency (Pallant, 2001).

### 3.3. Themes

Four key themes were identified during the TA, these included Relationships in Anorexia Nervosa, Cognition, Coping Strategies, and Early Experiences and Memory. Each theme contained responses from each participant in the study. Table 6 provides greater detail on the themes and highlights that all of the subthemes are derived from the accounts of eight or nine participants.

The three themes of Relationships in Anorexia Nervosa, Cognition, and Coping Strategies are particularly pertinent to the primary research question concerning the metacognitive profile of AN, whereas the Early Experiences and Memory theme is relevant to the secondary question on the role of memory. Further evidence to support the themes can be found in Appendix G.

Table 6.

*Themes and Subthemes from the Thematic Analysis*

Theme	Subtheme	<i>N</i>
1. Relationships in Anorexia Nervosa	Relationships with the Self and Anorexia Nervosa	9
	Relationships with Negative Thoughts and Worry	9
	Relationships with Others	9
2. Cognition	Focus of Attention	9
	Memory, Concentration, and Confidence	9
3. Coping Strategies	-	9
4. Early Experiences and Memory	Emergence of Weight Concerns	8
	Systemic Factors	9
	Stressors	9
	Role of Memory	8

*Note.* The final column refers to the number of participants' account that contributed to the development of each subtheme (or theme in the case of Coping Strategies).

### **3.4. Research Question One: To Explore and Describe the Metacognitive Profile of Adolescents with AN.**

As indicated above, the primary question concerning the metacognitive profile in AN is considered in terms of the Relationships in Anorexia Nervosa, Cognition, and Coping Strategies themes. The key findings are that individuals described a number of unhelpful beliefs about the self, AN, worry, and cognitions. Participants tended to present with an internal focus of attention at times of distress, which appeared to impact their abilities and confidence in their cognitive functioning. Individuals tried to cope with negative internal states by using a number of coping strategies (e.g., thought control strategies). These findings are discussed in further detail below.

#### **3.4.1. Relationships in Anorexia Nervosa.**

This theme consists of three subthemes of 'Relationships with the Self and Anorexia Nervosa', 'Relationships with Negative Thoughts and Worry', and 'Relationships with Others'. The overarching narrative provided an account of current dysfunctional relationships that generate internal conflict or distress within the young person and may serve to maintain the disorder. There is a consistent pattern in these relationships of control and deception.

##### **3.4.1.1. *Relationships with the Self and Anorexia Nervosa.***

This subtheme considers both the relationships with the self and the relationships with AN. The participants described AN as a part of themselves and the narrative indicated that the self and AN are intertwined. Fiona and Helen had been coping with AN for 33 and 46 months respectively, and presented AN as a part of their identity: "I think it's become sort of part of me" (Fiona, 4, 112), "it's safe, it's become comfortable... it's such a big part of me" (Helen, 2, 42).

##### **3.4.1.1.1. *Relationships with the Self.***

This section concerns the relationships the participants possess with themselves emotionally and physically with their bodies and includes their beliefs about themselves. The participants voiced self-beliefs of being a bad person, a failure,

worthless, weak, unlikeable, and not being good enough. Beth's comment regarding her self-beliefs indicated a level of self-reflection: "even when... I got all A\*s in my grades and... I'd lost weight and I was fit, I still didn't feel good enough, so it makes me question at what point you do feel good enough?" (Beth, 10, 328).

Individuals expressed feeling angry or frustrated with themselves and described self-hatred, self-disgust, self-deception, self-punishment and self-criticism. These negative relationships with the self at times affected emotional and behavioural responses, as indicated by Helen (BMI of 16.9) and Isabelle (BMI of 18.2): "if I'm thinking about like my size, or my body in a negative way, I'll get angry at myself for thinking like that because it's caused so much unhappiness (Helen, 3, 112), "I punish myself by not eating" (Isabelle, 5, 200).

Participants expressed being disgusted by their bodies, particularly in response to visualising their whole body in their mind. While some of the sample named this emotional response, others' vocalisations conveyed the same message. Accounts from Gemma (EAT-26 score of 60) and Helen (EAT-26 score of 61) demonstrate these reactions: "it's just horrible and disgusting... I shouldn't look like that, I should be smaller" (Gemma, 2, 30), "eugh!... horrible... it's too big, just big, fat" (Helen, 2, 56-62).

Individuals talked about misleading or convincing themselves of 'false truths'. One example is convincing themselves that the calorie content or volume of food is higher or lower to help them increase or decrease their food intake, dependent on their motivation to recover. This is evidenced in the extract from Dana who presented with the highest BMI of the sample (BMI of 19.1).

I used to think... this has got so many calories in it because that's what it says on the wrapper... but then... I'd change what I was thinking and think, well actually no, it's going to have way more in because I think, because I say so... because I say so it's going to have more calories in

it, even though obviously it's not, but I make myself believe that it's going to have more calories in it. (Dana, 15, 278)

Fiona who had been coping with AN for 33 months, provided a further example of this process. She described changing the way she perceives her body to intentionally make the image bigger in their mind's eye, maintaining the beliefs about being fat, and consequently the illness: "I'm almost fabricating that [image of myself] making it look bigger in my mind" (Fiona, 5, 146). Participants explicitly or implicitly described self-control (e.g. restricting): "I think it's... controlling yourself, so putting yourself kind of in a box where you can keep hold of everything and keep your eye on everything so nothing's out of your reach" (Beth, 8, 229).

Individuals reported a punitive relationship with the self, punishing themselves mentally and physically in response to having negative thoughts per se, thoughts about wanting to eat or for a perceived lack of self-control (i.e., eating "too much"). This is demonstrated by Gemma and Amy who had been managing the disorder for 16 months and 18 months respectively: "I tell myself off for having thoughts as in, like wanting to have something to eat or that kind of thing" (Gemma, 4, 104), "you sort of frown at yourself I guess in a way, saying like you don't, shouldn't think that, you know better" (Amy, 15, 401).

Finally, there was a sense that participants were self-critical at times: "[my body is] far too big and that my legs are too fat and my stomach sticks out too much" (Isabelle, 1, 30). Amy presented with a BMI of 15.4 and reflected on her relationship with herself during the interview. While initially dismissing the idea that she may be hard on herself, she reflected on her perfectionist traits and concluded that there may be some self-critical tendencies: "I don't think that I am hard on myself or hard enough on myself, but in the way I'm a perfectionist I guess I must be" (Amy, 16, 421).

#### **3.4.1.1.2.** *Relationships with Anorexia Nervosa.*

This section relates to both the positive and negative aspects of the relationships the participants have with their illness, where the adolescents voiced

their beliefs about AN. Emily was accessing inpatient care with a BMI of 17.2 and expressed her views on AN below.

Well it's ended me up in here [the inpatient unit], because of it I'm having to gain weight, it's like, at first... it makes you feel good when you do lose weight... and you've got the control, but then you realise that it has all the control and you don't have any of it. (Emily, 1, 26)

Individuals valued AN as a companion that makes them feel superior, powerful, in control and as though they are achieving, which appeared to generate a sense of pride. They believed that in return, AN pushes for perfection, thinness, and offers safety, comfort, and understanding. The illness led them to believe that they will gain admiration and respect from others due to being thin, in control and having a "strong will". After coping with the disorder for 16 months, Dana offered her perspective on AN.

I thought that I was going to be getting skinny, and I thought other people will think I will have so much control, other people will respect me because I've got so much control, and look up to me... anorexia was the subject I was interested in... I used to [think]... that's the only thing that actually understands me, because I thought, if I told this to anyone else, they might not get me, it was the only thing that understood, and it was... like a real passion, or a hobby... it was something that I thought about all the time, so it meant a lot to me. (Dana, 7, 118)

Finally, Cara (BMI of 18.7) who was successfully working towards recovery reflected that having AN made her a stronger person: "I think the advantages were... I came stronger out of it, having anorexia" (Cara, 5, 134).

Individuals expressed the belief that restricting initially had a positive impact on their cognitions, anxiety, and the way they viewed themselves. Dana reported that restricting had a calming effect and made her feel as though she could cope with other stressors.

I think the more I restricted my food... I think it put my mind at ease... I thought... this is happening and this is happening, but it's okay I've only had this amount of calories it's all fine. I used to find comfort in not eating or [occasionally] I'd get stressed about something that isn't food and I'd be like, it's alright though I feel like I've got an empty stomach, it's fine, it could be worse... not having a lot of food or having certain foods at a certain amount, really made me feel in control and safe.

(Dana, 13, 430)

At the same time participants acknowledged that there were disadvantages to having the disorder. Individuals described AN as deceptive, as though they felt betrayed by unfulfilled promises. AN reduced their sense of control, confidence and spontaneity, and had an impact on education, stress levels, mood, health (e.g., fertility), relationships, energy levels, and led to social isolation. The disorder maintained itself by perpetuating concerns about eating, weight and shape and elicited feelings of embarrassment and shame. In essence, it was acknowledged that AN was ruining their lives and could ultimately prove fatal. The negative aspects of the disorder are conveyed by Fiona and Isabelle, who scored 61 and 46 on the EAT-26, respectively: “ [I'd] probably say it's more unhelpful, just like making me feel more isolated and sort of breaking up relationships with family and friends... sort of demolishing everything” (Fiona, 3, 72), “it's quite negative, because it means I can't enjoy social events, and my energy is often very low and it affects my mood as well” (Isabelle, 1, 16).

The narrative concerning the participants' relationships with the 'anorexic voice', at times suggested they experienced the voice as an external entity. Some of the participants' accounts indicated that the voice may dictate rules concerning eating and exercise. Overall, their descriptions presented the voice as critical, controlling, punishing, and deceptive. Indeed, a number of these qualities can be identified in the narratives of Gemma and Emily who both presented with EAT-26 scores of 60 and 63 respectively.

If you're doing something that that voice... thinks you shouldn't, then you'd always be made to feel bad, and so kind of have to keep it happy even though that doesn't make people around you happy, but I think keeping the voice happy is a lot easier because... you're the only one who really has to deal with the negative thoughts if you do something you shouldn't or eat something you shouldn't, it's like really controlling I'd say. (Gemma, 3, 94)

It's just constantly there, it's telling you what's wrong and what's right, why you control... it's trying to convince you that it's trying to help you, but if you listen to it then you'll be better.... if you do eat, do a lot more exercise, just doing what you can to just get rid of any food and any calories. (Emily, 4, 128-130)

#### **3.4.1.1.3.**     *The Battle between the Self and Anorexia Nervosa.*

This section concerns the participants' experiences of an internal battle between their authentic 'old' self (or 'first brain') and their anorexic self (or 'anorexic brain'). In essence individuals described a divided sense of self where over time they tended to experience the strengthening of their anorexic self and the resultant

weakening of their authentic self. The accounts of Amy (BMI of 15.4) and Fiona (BMI of 18.4) demonstrated this internal battle.

When I go to eat something, I start thinking oh I shouldn't be eating this, it's sort of like having a fight with yourself... I have to sort of tell myself the only way I'm going to get better is to... eat a normal amount... eating more is going to be healthy and you were eating an unhealthy amount before. It's just sometimes hard like having two different brains fighting each other, sort of split in half. (Amy, 6, 138)

I'd probably say that it was probably a part of me that I probably had like, two conflicting sides because I had... anorexia on one side, and then like a more rational sort of my old self... [and they were] battling against each other all the time but... the illnessy one was like always the stronger one.... one side would be saying, oh you don't need that you're really big already, you don't need to have that, and the other side would be like well you need to have that because you need some more nutrients, you need to get better... and then it would just be those two things... contrasting the whole time. (Fiona, 4, 102-104)

#### **3.4.1.2. Relationships with Negative Thoughts and Worry.**

This subtheme reflected the relationships the participants experienced with their own thoughts and worry. This section presents the participants' positive and negative beliefs about worry. Participants' relationships with their thoughts are discussed where individuals conveyed the importance of controlling thoughts. Finally, participants' views on the trustworthiness of their thoughts and perceptions are presented.

Participants identified themselves as worriers and conveyed their experience of the process of worrying, the extract below from Dana (EAT-26 score of 10) indicates that 'important' worries were evaluated and elaborated in detail until the stage where individuals were focussing on minor concerns.

Worrying about like things [that] are worth worrying about would lead me to worry about things which aren't so important, which would then lead me to worry about silly little things, which would lead me to worry about ridiculously silly things.... I'll think of a worry and then I'll dissect that and split that into little bits and I'll think of those little bits, then I'll dissect them and split them up and it just keeps going until you get down to like stupid, little, minor details. (Dana, 14, 266-268)

Positive and negative beliefs about worry were discussed. Participants held beliefs that worrying showed care for others and generally was helpful in terms of planning, preparation, predictability, safety, and acted as a reminder and motivational mechanism to do certain tasks. Emily who has been coping with AN for 9 months, conveyed her beliefs concerning worry: "you worry about things then you won't forget to do them... if everything is pre-planned and structured... then it's just easier because you know when things are going to happen and it's not unpredictable" (Emily, 6, 201).

As evidenced by Beth (BMI of 17.8), participants expressed that focusing on minor worries was helpful in distracting them from greater concerns, whereby worry was used as a metacognitive control strategy.

I think worrying can help you, it can work in two ways it can help the intrusive thoughts by worrying about what unhealthy things are going in your mouth and... it can help to combat those by worrying about...how it's hurting other people. (Beth, 16, 509)

Many of the sample voiced their beliefs that worrying about eating or the weight was helpful, which is demonstrated by Emily and Gemma who had been coping with the disorder for nine and 16 months respectively: “in a way because if you worry about it then you can just stop eating and lose weight” (Emily, 6, 214), “well to me worrying about my weight is helpful... I don’t like my weight and how I look like so worrying about it is another incentive to lose weight and change how I look” (Gemma, 4, 120). When considering the impact of being unable to worry, participants described this as a scary and worry-inducing prospect. Overall they conveyed a sense that worry was an asset and being unable to worry would be experienced as a loss.

Participants held beliefs that worry was uncontrollable and dangerous. Participants reported experiencing worry as overwhelming and difficult to stop: “I can’t really stop worrying once I’ve began... until whatever I was worrying about... is sorted... then I will continue... [to] worry, so I can’t stop worrying” (Gemma, 4, 132). They believed worrying had a negative effect on thinking processes, mood, behaviour, health, stress levels, and their eating behaviour. Participants indicated that worrying influenced their sense of control: “you’re worrying about not being in control, and then the worry... becomes out of control anyway and then you’re still worried but you’re not in control” (Emily, 7, 233).

Individuals reflected on the presence and experience of certain thoughts. Participants described negative relationships with their thoughts, feeling as though their thoughts controlled their life, and subsequently responding by ignoring their cognitions for example. Participants discussed the negative impact of certain thoughts on their mood and well-being. Dana highlights that thoughts could be misleading and described the process where one thought can lead to a cascade of cognitions and ultimately have an effect on her self-esteem: “well, they could be misleading... they could then lead to other unhelpful thoughts, like restricting thoughts... it’s not very good on my self-esteem” (Dana, 13, 242).

The adolescents expressed their anxiety, frustration and disappointment with the presence of eating disordered thoughts. These cognitions were problematic for individuals who were making strides towards overcoming the illness, as they believed their recovery suffered as a result of these thoughts and this generated concerns about the possibility of a relapse. Indeed, this can be evidenced in the account of Amy who reported that her ideal weight would be 46.9kg, representing a BMI of 18.3, several points higher than her current BMI of 15.4.

To me, I think it like slows progress... you can persuade yourself [to restrict]... you start eating less [and]... it just really brings your mood down... so I just think it really like slows sort of any road to recovery.  
(Amy, 7, 172)

I don't like thinking that sort of stuff because it makes it harder for me to stick to the meal plan... it really bothers me that I still have thoughts like that... you always like to think that you're getting better but... [these thoughts make] you always think that it is sort of a relapse... that's what makes it difficult. (Amy, 15, 411)

Participants offered their perspective on the consequences of failing to control their thoughts and described being overwhelmed by negative thoughts: "I think [I'd] probably just descend into like losing weight and being completely consumed and preoccupied by food and other things and just like swamped by negative thoughts" (Fiona, 9, 266), "you spend your whole day just worrying and thinking about negatives and you can't... go out or do anything, you're just consumed by the thoughts" (Isabelle, 3, 94).

The evidence used to reinforce or refute these thought processes is discussed. Participants tended to initially respond to thoughts as though they were

facts. They tended to base their judgements on their beliefs (e.g., about being right), their feelings (physical and emotional), and at times their assessment of their body (e.g., body-checking or comparing themselves to others) to consider whether their thoughts were factual or distorted. The extract below from Dana (BMI of 19.1) provides an account of accepting thoughts as facts in the face of evidence to the contrary.

I wouldn't believe it, I'd dismiss it entirely [any evidence that contradicts the thought I'm fat and lazy]... I said to one of the nurses... I'm just so fat, and I can't believe I'm so fat and we did this thing called a string test and she put like string around my wrist and around my leg and she took it away and she showed it, and it was so... tiny, then I just thought, no that's not me... you've obviously changed the string... I just wouldn't believe it even though the solid evidence was right in front of me, I wouldn't let myself believe it, I'd make myself believe the negative stuff.  
(Dana, 23, 493)

Participants acknowledged they looked for evidence to support their unhelpful thoughts or beliefs at times: "I'd normally look for the evidence that supports me being fat and lazy... I'd look at myself and think yes, my arms, my legs, yes, that's proof, and then I'd think, yes I've eaten that, that proves it" (Dana, 23, 489).

I... almost clarify that that was true [that I'm not good enough].... just trying to find things that I wasn't good at, so whether that was like at school or other areas. (Fiona, 13, 421-423)

Only three participants were able to recognise that their thoughts were distorted upon later reflection, and these individuals were further along in their journey

to recovery. However, many of the participants appeared to experience difficulties in re-evaluating unhelpful thoughts. As can be observed in the extract from Beth (EAT-26 score of 44), there was a sense of cognitive inflexibility that may contribute to this effect, where seeing their cognitions from another perspective was challenging.

I think maybe because I don't... have enough strength to see it from another perspective... I can get part way there but then I falter... it's like breaking like a little bit out of my barrier, but I can't go that far out my comfort zone. (Beth, 25, 815)

#### **3.4.1.3. Relationships with Others.**

This subtheme is about the relationships the participants have with others, such as family, friends, and their peers. This section focusses on the impact of AN on the participants' relationships with others. Descriptions of problems in relationships are presented, particularly in terms of control, trust, understanding and the experience of loss of relationships. Finally the effect of relationships on eating behaviour is discussed.

Participants described the loss of trust between themselves and others, particularly in the context of food and eating. Some participants reported that they were treated differently to their siblings at meal times, and this appeared to elicit emotions of anger or disappointment. Both Beth (BMI of 17.8) and Cara (BMI of 18.7) described their difficulties with trust in relationships.

I can't trust people in preparing [food], I let my parents prepare my food but I don't really believe what they say.... other people don't trust you either and it... puts relationships in jeopardy because they're like, you just doubt everything we do. (Beth, 15, 497-501)

If my brother says he's full, they're kind of like that's fine... normally they don't believe me when I say I'm full... they kind of think oh she just doesn't want to eat because she's stressed... they kind of treat me and "Christopher" a little bit differently when it comes to food. (Cara, 25, 731)

Participants described feeling controlled in their relationships with family and friends at times, which evoked feelings of anger: "I think it's just like if... I'm just not very hungry or something and they'll ask, they'd be like you need to eat more, and I'd be like, you don't need to force me to eat!" (Cara, 14, 430), "I felt very kind of imprisoned and like someone else was deciding what I should and shouldn't do, not me... like I was a baby again, and my parents were just telling me what to do" (Beth, 7, 177-179).

There were both positive and negative comments about other people's understanding of their difficulties. The views of Helen and Cara are provided below, notably their illness duration was the highest of the sample (46 and 48 months respectively): "my parents definitely are helpful, because they definitely understand because they've gone through it for about four years now" (Cara, 20, 583).

Well people don't understand it... people just don't know, it's not talked about... they see things on TV or in magazines and assume that's what it is, and I think a lot of people forget about the mental side of it and just think oh it's just a very skinny person... and it's not. (Helen, 2, 38)

Finally, individuals described their concern for the effect AN has on their significant others per se or their relationships. They acknowledged that restricting elicited a negative response from others and it appears the anxiety about this response acted as a signal to stop restricting: "I just felt... worried that like my parents would get upset about it if I'd lost a bit a weight or something, but normally I think

about the consequences of like losing weight... because I feel like, oh what... effect will that have on my parents?" (Cara, 22, 635).

### **3.4.2. Cognition**

This theme was divided into two subthemes, the first is labelled 'Focus of Attention' and the second is referred to as 'Memory, Concentration, and Confidence'. This theme relates to the both the changes in attentional processing of eating, weight and shape information, and this appeared to have an impact on memory and concentration. The overarching narrative of this theme concerns the role of attention and the way these cognitive processes may contribute to social isolation.

#### **3.4.2.1. Focus of Attention.**

This subtheme primarily concerns the participants' internal focus of attention. This section describes the participants' tendency to focus on themselves, being more aware of their thoughts or their body and feeling self-conscious during times of distress.

Participants described their self-focussed attention and acknowledged that at times they were ruminative or preoccupied with thoughts related to eating, weight and shape as this was at the forefront of their minds. This is evidenced in the account by Dana, who presented with an EAT-26 score of 10.

I think I was quite, I don't know if it's right to say a selfish time, but a lot of it rotated around... a lot of my thoughts were rotated about me and what I was eating and my body shape and how my body looked and self-consciousness,... normally I think of others, I don't think I'm a selfish person, but... I did think quite a lot about my food... that was what I prioritised in thinking. (Dana, 17, 350)

Individuals tended to reflect that focussing their attention internally was unhelpful. Participants' self-focussed attention appeared to contribute to social

isolation: “I couldn’t have conversations because I was constantly being bombarded with other thoughts... I didn’t talk to anyone... I couldn’t talk to anyone” (Dana, 6, 106), “I was spending more time on my own, because I just wanted to be on my own... there wasn’t actually anything else to think about, you just sort of dwell on it” (Amy, 10, 268).

Many participants reported feeling self-conscious. Indeed, Fiona (EAT-26 score of 61) indicated that these feelings were present while she alone, while Isabelle (EAT-26 score of 46) experienced this when in public: “even though I was sort of with my own thoughts as it were, I wasn’t with anyone, I still felt as though I was worrying about what I looked like and things and worrying what other people see” (Fiona, 10, 328), “I feel a lot of embarrassment, so I feel almost embarrassed for thinking the way I do and embarrassed for not being able to focus and just embarrassed in general” (Isabelle, 4, 140).

Emily who was the only inpatient in the sample, described the impact of her perseverative thinking on her levels of concentration, and the emotional response to this.

Just thinking about it... what I’ve just eaten and then I’m... like, why are you thinking that? It’s just going to make you worse, and then I can’t concentrate on anything, and then I just get angry, upset and worried, just want to stop thinking about it but I can’t. (Emily, 4, 140)

#### **3.4.2.2. *Memory, Concentration and Confidence.***

This subtheme focuses on difficulties with concentration and memory and considers participants’ cognitive confidence. This section concerns the impact of restricting on the participants’ cognitive abilities. Participants tended to report that restricting had a negative impact on concentration and memory, particularly at school (e.g., in classes, revision, and exams): “if I haven’t eaten then I’m just tired, can’t concentrate” (Emily, 5, 174).

I can remember back to when I was a lot younger... but since I've been ill I can't remember like what I did yesterday or last week, or like with revision I can't remember what I revised and I can't remember what I've done very much since I've been ill. (Isabelle, 6, 240)

Beth who presented with an EAT-26 score of 44, appeared to hold beliefs about the impact of restricting on her ability to concentrate. She acknowledged that she was distracted at times, however she did not believe this affected her concentration on her school work: "I find myself quite... I'm very, what's the word, I'm not focussed, I'm distracted, that's it" (Beth, 12, 390), "I think it [restricting] sometimes helps me to work more... because I'm not as distracted by kind of... the whole social element around food" (Beth, 14, 464).

When asked if they trusted their memory, participants tended to respond by affirming their confidence in their memory. When the question was more specific to eating disorders (e.g., querying whether the young person is able to trust their memory when counting calories), the responses were different and participants reported questioning their memory or cognitive abilities. These concerns appeared to generate feelings of uncertainty and anxiety, which led to checking behaviour. This can be identified in the accounts of Helen and Isabelle who reported an ideal weight of 40kg, which represented a significantly low BMI for both participants (of 14.3 and 15.4 respectively): "I panic a lot about [my memory], and then I constantly check to make sure it was what I thought it was" (Helen, 7, 277), "if I... know the calories, it's the thing I always check even if I know it" (Isabelle, 5, 164).

### **3.4.3. Coping Strategies.**

This theme refers to adaptive and maladaptive coping strategies that are used by participants, typically in response to experiencing negative thoughts. This section

describes the participants' use of a range of coping strategies. Overt coping strategies included self-harm and eating disorder behaviours (e.g., restricting and purging).

I think I mostly just wasn't eating... I think I ate... porridge for breakfast... and then like soup for lunch and then I just wouldn't, I barely ate any supper or anything.... I think I was having about 600, 700 [calories]. (Cara, 7, 200-202)

Participants described using avoidance as a coping strategy, for example avoidance of triggers or events that may generate anxiety. These triggers included food per se, social situations, dieters, mirrors, showing their body, and media (e.g., magazines, the internet, and social media). Some of these triggers can be identified in the accounts from Helen and Fiona, who both presented with EAT-26 scores of 61: “[I avoid] meal times with other people... certain friends, certain foods” (Helen, 5, 158), “I tend to avoid... going... on my phone, going on Facebook, or Google, or... magazines... I try not to do that so that I don't see anything that could set it off” (Fiona, 7, 190). Participants also shared that they used sleep as an avoidance strategy. Some of the coping strategies used by the participants to manage negative thoughts included relaxation, reading, drawing, journaling, studying, doing puzzles and playing or listening to music: “I'd draw or listen to music or like play music” (Isabelle, 2, 40). Occasionally participants coped with negative thoughts with support from others to help manage their disorder: “I'm usually at home so I go and... start talking to my sisters [to] keep my mind off it” (Amy, 7, 158).

Participants conveyed the sense they needed to use strategies to cope with their negative cognitions. Participants used cognitive strategies of re-evaluating or challenging cognitions, thought suppression, or replacing negative thoughts with positive thoughts: “I try to think more positively about things, like if I have a negative thought I kind of put it into perspective” (Cara, 18, 534).

When I was doing okay in recovery... I'd like write down the kind of eating disorder thoughts and then write a challenge to it.... But then if I'm struggling I'll just try and justify my behaviour, just one time, or it's not that bad. (Helen, 5, 174-176)

### **3.5. Research Question Two: To Understand and Capture the Role of Memory in Relation to Eating Pathology in Adolescents with AN**

The second question concerning the role of memory centres on the Early Experiences and Memory theme. This considers the participants' recollections of attention to weight and shape, systemic factors, and stressors which collectively appeared to represent predisposing and precipitating factors. The key aspect of this theme is the Role of Memory subtheme, which directly addresses the research question.

The Role of Memory subtheme consists of the triggers, emotional responses and impact of the participants' memories, which through negative cognitions appeared to lead to restricting. There were instances where participants used their memory to make themselves feel worse, while a couple of participants felt as though their memories instilled them with a sense of pride about their progress.

#### **3.5.1. Early Experiences and Memory.**

As indicated, this theme refers to the narrative the participants described concerning their early experiences and the role of memory. Overall, this theme focuses on the early experiences and events that shape the participants' responses to food, eating and their body. This theme is divided into four parts, the 'Emergence of Weight Concerns', 'Systemic Factors', 'Stressors' and the 'Role of Memory'.

##### **3.5.1.1. *The Emergence of Weight Concerns.***

This subtheme captures the participants' early experiences that appeared to lead to their weight concerns. Their accounts indicated they tended to compare

themselves physically and less favourably to others. This section describes the participants' experiences of negative comments or attention from others and associated negative emotional responses (e.g., shame). There is a discussion concerning the impact of negative comments, where participants conveyed a sense of wanting to reject an enforced identity (e.g., of being the "big-boned one") by changing the narrative about themselves through a process of restricting.

Many participants provided accounts of specific incidents where they experienced negative attention from others relating to their eating, weight or shape. Participants reported that peers directed negative comments towards them about their size and at times compared them less favourably to others. In some instances, indirect comments from peers were interpreted as critical and led to concerns about their weight or shape. Isabelle who scored 46 on the EAT-26, described a specific incident that occurred at the age of seven or eight that appeared to represent the origins of her weight concerns.

I've had this memory of my mum saying to me once I'm getting podgy she denies it but....I was....just standing there and I remember we were talking about how I was going out and I didn't like what I was wearing and she said, oh you're getting a little bit podgy now.... [I was] seven or eight. (Isabelle, 174-180)

Some participants provided generalised memories of their early experiences of weight-related teasing: "just mainly at like primary school I think, just like passing comments of oh you're a bit chubby" (Fiona, 13, 397), "I think I felt pressured to look a certain way... a few people had commented on things to me.... I'm not sure if they were jokes but people had commented" (Gemma, 1, 6-8).

Individuals believed they were considered to be “always eating” or the person who “loved” their food, this tended to present as synonymous with being greedy and appeared to elicit frustration and guilt. Participants felt as though they had been labelled them as either a “big-boned”, “fat”, or “podgy” person, which appeared to generate unspoken feelings of resentment. Beth described her experience of being labelled as the “big-boned” person in the family: “out of me and my sister, my sister has always been... [the] really tiny one and so I was always classed as like the big-boned one” (Beth, 3, 79).

I remember saying... how it was so embarrassing that I was like the third biggest out of the four bridesmaids... and then my dad saying, well you know you're just a big-boned person, you're never going to be tiny!  
(Beth, 4, 89)

Participants described their response to being labelled or teased about their weight. As indicated earlier, there was also a sense that the participants wanted to change the story about themselves, to reject their enforced identity and no longer be considered, in their words the “big-boned”, “fat”, or “podgy” person by others. This response can be identified in the narrative below from Helen (BMI of 16.9) and Beth (BMI of 17.8). Indeed, this interpretation from participants’ accounts was discussed in the participant validation process and gained further support (Appendix E).

I think only once when I was about seven or so, and I was at the swimming pool, I had a very skinny friend and... two boys behind had said... that's “Heather's” sister, and he was like oh what the fat one, and I just always remember that..... I just don't want to be the fat one.  
(Helen, 8, 295-301)

I remember specifically once dad saying to me, oh well you'll always be a bigger build because... that's just the "Jones" build whereas my sister isn't... that kind of made me think I don't want to do what everyone says I am, and says that I have to be. (Beth, 3, 81)

### **3.5.1.2. Systemic Factors.**

This subtheme concerns the role of systemic factors in AN. This section consists primarily of accounts concerning the families' attitude to food, family food rules, use of food as a means of control, and the presence of weight concerns or disordered eating in the system.

Many of the participants described their families as having a healthy attitude towards food and eating. Amy (BMI of 15.4) indicated that her family had a flexible relationship with food by including both healthy and unhealthy products in their diet.

It's never really been a big thing... it's not really something we've ever super concentrated on... we like cooking, we're not exactly junkies but we're not really super healthy eaters either. We're just sort of a happy medium, like we eat chocolate but then we eat salad at the same time, it's not like we're either way... we're sort of... quite open, like we'll have fast food but we'll also cook home foods, it's just varied and it's never been like [a] big deal. (Amy, 12, 331)

It appeared that accounts of family members' healthy relationship with food were inconsistent with mentions of eating difficulties or weight concerns in the system. Indeed, there was a sense of wanting to protect the family by dismissing the impact of systemic factors: "my mum has always had trouble with being overweight, she is often... on diets... I guess my older brother and older sister have both been on diets, nothing like major but just trying out Weightwatchers" (Amy, 13, 349), "me and my

sister did a diet, my mum did a diet, but we never really cared too much” (Helen, 8, 281).

Participants provided details on normal family food rules concerning the timing of meals, sitting at the table, eating as a family and limiting unhealthy foods for example. At times people described flexibility in the rules, but at other times there appeared to be greater perceived rigidity, characterised by “always” and “never” statements: “I’ve never been allowed to leave the house without having breakfast” (Beth, 20, 677).

Participants described times where food was offered as a reward, and usually this occurred on special occasions or to celebrate achievements. Individuals recalled memories where food functioned as a reward: “they were called rapid checks at school so there were like your report... so if you had a good rapid check we might have like donuts for pudding” (Beth, 22, 747).

### **3.5.1.3. Stressors.**

This subtheme concerns the difficult life events that were experienced by the participants. Some participants experienced a series of stressors prior to the onset of AN and one person reflected on this at the participant validation stage. The section discusses these stressors, which represent possible triggers for AN.

The participants experienced loss (e.g., of a relationship), change (e.g., transition to a new school) or increased pressure (e.g., exams). Amy (BMI of 15.4) described the loss of a family member, while Helen (BMI of 16.9) identified the transition to a new school as a stressor: “my granny died... she was only 55” (Amy, 2, 28), “I think there’d been like the transition to secondary school... things were a bit unstable” (Helen, 1, 10). Participants reported feeling that other aspects of their life felt out of control and one person voiced the belief that not eating was synonymous with control, which meant that AN was perceived as a way of coping with these stressors.

When I found out we were moving... I got quite depressed and I guess it was sort of like I felt everything else was sort of out of my control, so I sort of... subconsciously, started controlling the only thing that I could, which was obviously how much I was eating. (Amy, 1, 8)

#### **3.5.1.4. Role of Memory.**

This subtheme is the primary focus of the second research question on the role of memory in adolescents with AN. This aspect of the Early Experiences and Memory theme concerns the triggers, processing and impact of unpleasant memories. Participants typically referred to their memories of receiving critical comments from others or memories related to the earlier stages of their illness. The accounts allude to the earlier narrative concerning the enforced identity.

This section is primarily concerned with the recollections of weight-related teasing that were both consciously and unconsciously brought to mind, that typically triggered cognitive processes that led to restriction as a way of coping, maintaining the disorder.

Firstly, individuals reflected that their internal states had an impact on the presence of unpleasant memories concerning their weight and shape. Cara (BMI of 18.7) and Gemma (BMI of 18.3) described their experience: "when I have unhelpful thoughts they kind of come back, I kind of remember just me, just not eating and just completely restricting my diet" (Cara, 22, 653).

I think when I feel bad, it makes me think of like when people said stuff to me... I always remember, even from... nine [years old], I've always hated my thighs, so it just reminds me of like how bad I felt even when I was that age. (Gemma, 7, 207)

Participants identified feeling hungry, preparing to eat, weighing themselves, and exposure to dieters as further triggers to unpleasant memories.

I think it just kind of brings back my memories of how I used to be... oh if they're going on a diet I probably should not eat as much chocolate or something, so it... makes me in some ways restrict my food as well.  
(Cara, 11, 331)

Yes, I used to get them [memories]... at the times I was hungry, like when I was hungry at my house... and I was about to go to the fridge, and... I was looking in the fridge and I was like, what can I eat, and then I thought... do I really want to be big-boned again, do I really want to go back to being the little chubby child, do I really want all those comments, and then I'd think no, and then I'd close the fridge and I'd just go back to doing what I was doing. (Dana, 18, 389)

Memories triggered unhelpful thoughts and were used as evidence to support existing concerns about weight and shape: "I think like if I already feel quite bad... about something I use it [my memory] as like qualifying why I should feel bad and then making that worse" (Fiona, 11, 352). These recollections reportedly elicited negative emotional states, where participants described feeling distressed or saddened: "I think back two or three years ago and I remember people saying to me like, you're not fat you're just big-boned, and I just remember that and it really, it really distresses me" (Dana, 2, 34).

Participants indicated that memories of their pre-AN weight or negative attention could be used as a mechanism or incentive to restrict. The narrative presented by Isabelle (BMI of 18.2) and Gemma (BMI of 18.3) indicated that these unpleasant recollections generated negative thoughts and this led to restriction: "I think

about how I was really fat before I got ill..... to drive myself to lose more weight”  
(Isabelle, 4, 152-154).

Thinking about well, how big I used to be and using that as a way to think, well I don't want to get to that again... and feeling guilty about ever being like that, so... using that as an incentive to restrict more. (Gemma, 7, 219)

Fiona who presented with an EAT-26 score of 61, described trying to cope with unpleasant memories through suppression and the problems with this strategy, where suppressing memories has paradoxical effects of increasing the intensity of the memory.

I'll push them [memories] to the back and then they'll come back later, worse.... I think they'll... feel like a bit stronger so then that'll... reinforce that more... I think that makes it feel stronger and have more of an impact. (Fiona, 2, 40-42)

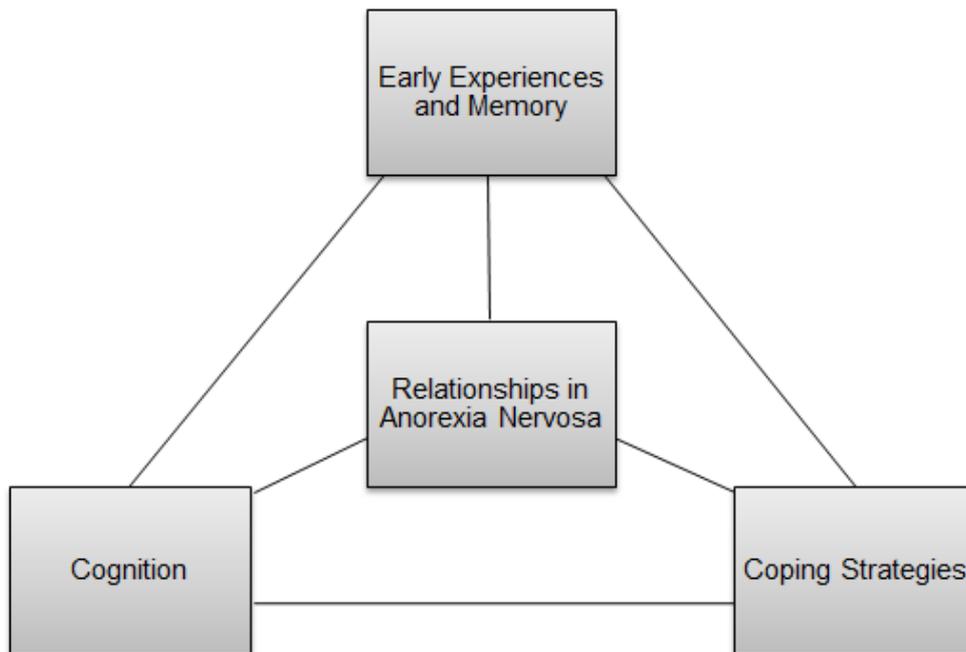
In contrast to the above accounts of unpleasant memories negatively influencing behaviour and their emotional state, a couple of participants indicated that their memories acted as a reminder of their negative experiences associated with the illness and this provided an incentive to recover and a sense of pride, interestingly Helen and Cara had the longest illness duration of all the participants (46 and 48 months respectively): “if I'm like kind of gaining weight and not feeling so good about it, I could think back to some of the really horrible days and think this is why I'm gaining weight, and... try and rationalise with them” (Helen, 7, 249), “I've obviously come a long way... so I kind of feel proud thinking back to my memories” (Cara, 22, 653).

### 3.6. The Relationship between the Themes

Figure 4 shows a thematic map of the four themes most relevant to the research questions and the relationships between the themes. The four inter-related themes are Relationships in Anorexia Nervosa, Cognition, Coping Strategies, and Early Experiences and Memory. For example, early experiences of negative attention pertaining to weight may affect an individual's relationship with themselves (e.g., triggering feelings of self-disgust), which may have an impact on their focus of attention (e.g., excessive focus on their body) and lead to maladaptive coping strategies (e.g., restricting).

Figure 4.

*Thematic map to show the relationship between the four key themes.*



### 3.7. Chapter Summary

In this chapter information on the sample was presented. Following this, the themes of Relationships in Anorexia Nervosa, Cognition, Coping Strategies, and Early Experiences and Memory from the TA were discussed in relation to the research questions. These themes indicated a level of metacognitive dysfunction in

adolescents with AN and captured the content and impact of unpleasant memories.

While this chapter focussed on presenting the findings of the analysis, the next chapter considers the findings in the context of prior research and the implications of the study.

## Chapter Four

### 4. Discussion

#### 4.1. Chapter Overview

Firstly, this chapter considers the preliminary findings of the study on the metacognitive profile and role of memory in AN in the context of past research.

Secondly, the strengths and weaknesses of the research are presented and finally the implications of this study are discussed.

#### 4.2. Summary of the Findings

The aim of this study was firstly to explore and describe the metacognitive profile of adolescents with AN and secondly to understand and capture the role of memory in this clinical group. Nine adolescents with AN participated in this qualitative study.

##### 4.2.1. Research question one.

The three most relevant themes to this question were the Relationships in Anorexia Nervosa, Cognition, and Coping Strategies themes. The key findings were that adolescents with AN presented with metacognitive dysfunction and a toxic style of thinking that consisted of perseverative thinking (e.g., worry), self-focussed attention (e.g., self-consciousness), threat-monitoring (e.g., attention to food-related information), avoidant behaviour (e.g., avoidance of certain foods), and processing negative self-beliefs (e.g., I'm a failure; Wells, 2000).

##### 4.2.1.1. *Relationships in Anorexia Nervosa.*

The narrative of the Relationships in Anorexia Nervosa theme centred on dysfunctional relationships characterised by control and deception, which generated internal conflict and distress.

##### 4.2.1.1.1. *Relationships with the Self and Anorexia Nervosa.*

Self-beliefs (i.e., declarative beliefs) captured in the participants' responses reflected feelings of being worthless, not good enough, weak, unlikeable, a bad person, and a failure. They described a negative relationship with themselves that

was characterised by self-hatred, self-disgust, self-deception, self-control, self-punishment and self-criticism. Researchers have identified similar negative self-beliefs and relational patterns in individuals with AN (Cooper et al., 1998; Newell, 2012; Treasure & Ward, 1997). These relational patterns influenced their affective (e.g., low mood) and behavioural responses (e.g., not eating). For example, participants described consciously misleading themselves with ‘false truths’ about the calorie content of foods or about the size of their body. This pattern of self-deception was primarily aimed at sustaining dietary restriction. Using cognitive processes in a negative way to maintain the disorder has been identified in adults with AN (Woolrich et al., 2008).

Participants punished themselves physically and mentally for experiencing cognitions about hunger, eating or as a result of perceived ‘poor’ self-control (i.e., failure to restrict). Thoughts about food are likely to enter conscious awareness during periods of restriction, however as these cognitions may lead participants to punish themselves by not eating (e.g., “I restrict as a punishment for having thoughts about eating”), this appears to perpetuate an unhelpful cycle. Despite this, restriction is experienced as a positive in terms of managing negative mood states or anxiety (e.g., “restricting relaxes me”).

The relationship between the self and AN was described as enmeshed, which presented implications for sense of self, identity and generated an inward battle, as acknowledged in the literature (Higbed & Fox, 2010; Kitson, 2012). Participants’ account of the internal battle between the ‘old’ self and the ‘anorexic’ self appeared to reflect the experience of being overpowered by the disorder. Higbed and Fox (2010) argued that this internal conflict reflects cognitive dissonance that is ongoing during the process of recovery. The authors considered the battle to represent an attempt to generate separation between the self and AN (Higbed & Fox, 2010). Indeed, it is hypothesised that individuals need to psychologically distance themselves from the disorder to make progress in recovery (Higbed & Fox, 2010; Tierney & Fox, 2010).

The 'anorexic voice' was presented as an external source of criticism, control, deception and punishment (e.g., "you're greedy, you should be ashamed of yourself" or "you're a failure, you'll never be skinny"), consistent with the study by Tierney and Fox (2010) that identified negative characteristics of the voice. Adherence to the demands of this punishing voice appeared to take precedence over the needs of others. Indeed, the anorexic voice adopted a dictatorial role, which is in accordance with research in adult populations (Tierney & Fox, 2010).

This 'anorexic voice' appeared to dictate stop rules that direct perseverance or cessation of a task, for example reaching an upper limit of 300 calories acted as a signal for one of the participants to stop eating, while the same participant reported being unable to stop exercising despite pain and exhaustion (Davey et al., 2005). An adaptive response to experiencing these physical effects of exercise would be to terminate the session; however the rules in AN appear to override these mechanisms, for example, in favour of burning as many calories as possible. Davey et al. (2005) suggests that meta-beliefs (e.g., "losing weight reduces my negative thoughts") guide stop rules (e.g., "I must exercise until I am in 'negative calories'").

Participants described beliefs concerning the illness, where AN was cherished and considered to be a companion that offers superiority, power, control, safety, comfort, understanding, admiration, and weight loss. Participants held beliefs that restricting had a positive impact on anxiety and beliefs about the ability to cope with other stressors. However, individuals recognised the negative impact of AN on them emotionally, socially and in terms of the confidence and education. Participants reflected that AN was ruining their lives and on the life-threatening nature of the illness. This study produced comparable results to a study by Serpell et al. (1999) that considered the advantages (e.g., increased sense of control) and disadvantages of the AN (e.g., negative impact on health). Finally, participants conveyed a sense of pride and shame as positive and negative aspects of the disorder, which is in accordance with research by Skårderud (2007).

#### 4.2.1.1.2. *Relationships with Negative Thoughts and Worry.*

Participants described the use of worry as a cognitive and metacognitive strategy, in accordance with Wells' (1995) conceptualisation of worry. A couple of participants indicated that they managed other concerns (e.g., the well-being of family members) by worrying about their eating, weight, or shape. Their narratives indicated that worry pertaining to AN was less threatening than non-AN related worry. This may reflect the idea that for participants, AN offers 'safety' from external sources of threat (i.e., worry about their family). Indeed, research indicates that the disorder is perceived as offering security and protection from the world (Tierney & Fox, 2010).

Participants were able to reflect on and describe the nature of the worry process; where elaboration of 'important' worries generates a cascade of minor concerns that are further evaluated in detail. Interestingly, when the participants were asked about the impact of being unable to worry, they tended to express their concern and indicated that this would trigger worry, i.e., meta-worry (or Type 2 worry). There is emerging evidence for the role of meta-worry in eating disorders, as indicated by Sassaroli and Ruggiero (as cited by Sassaroli & Ruggiero, 2011).

Worry appeared to be regarded as valuable, while its absence would represent a loss. There was a consistent response to the findings at the participant validation stage, where participants expressed 'needing' worry. It may be that worry offered a sense of control, and therefore the idea of relinquishing worry may be threatening.

This study indicated that adolescents held both positive and negative beliefs about worry. The 'generic' beliefs that are typically seen across psychological disorders will be presented prior to the beliefs relevant to AN. Firstly, the generic positive beliefs about worry were that it was beneficial for planning, preparation, predictability, safety, motivation and functions as a memory prompt. The beliefs specific to AN were that worrying or thinking about their weight led to not eating, or acted as an incentive to restrict and prevented them from being overweight. It may be

that for participants, worry is instrumental in helping them either achieve or maintain weight loss. Overall, the importance placed upon worry and the positive meta-beliefs presented by the participants are likely to increase the use of worry as a cognitive or metacognitive strategy (Wells, 1995). Finally, adults with AN have reported advantages to experiencing thoughts about eating, weight and shape (Woolrich et al., 2008).

The generic negative beliefs concerned the uncontrollable and dangerous nature of worry. Individuals voiced concerns that worry was difficult to stop (e.g., “I can’t stop worrying”), interfered with their thinking, and had implications for health, mood and behaviour. It was believed that worrying about one’s weight would negatively affect their recovery and appeared to lead to anxiety, frustration and disappointment. This may in part reflect the internal battle between the self and AN that appears to occur during the recovery process (Higbed & Fox, 2010). Overall, excessive worry and rumination appeared to interfere with self-regulation, reinforce unhelpful beliefs; and has been implicated in the maintenance of eating disorders (McDermott & Rushford, 2011; Wells, 2008, 2009; Woolrich et al., 2008).

Individuals reflected on the presence, experience and impact of certain thoughts on their mood and well-being. Participants described negative relationships with their thoughts and related feelings of frustration. Participants conveyed the importance of controlling their thoughts as suggested by Klaczynski (2005). They presented negative beliefs about the uncontrollability of thoughts and described being consumed or overwhelmed by negative cognitions, which is characteristic of metacognitive dysfunction and perseverative processing (Wells & Matthews, 1994).

It may be helpful to reflect on the meanings attached to both eating and restricting. Participants appeared to believe that eating would lead to difficulties in coping with negative thoughts or their anorexic voice. In contrast, restricting was described as synonymous with a perceived reduction in negative cognitions or the ability to cope better with their thoughts (e.g., “restricting puts my mind at ease”).

Therefore, individuals may present with dual beliefs that reflect both negative beliefs about eating and positive beliefs about restricting, as identified by Cooper (2012).

As Wells (2000) suggested, individuals primarily used internal information (e.g., their feelings) to determine the reality of their thoughts. At times they sought to prove their negative thoughts about themselves consistent with self-verification theory (Swann et al., 1992). Participants tended to appraise cognitions as factual (Wells, 2000). Woolrich et al. (2008) indicated that individuals with AN are less successful in re-appraising their cognitions than healthy controls. Indeed, the participants' description of the barriers to challenging their thoughts indicated a level of cognitive inflexibility, which may possibly influence their ability to re-evaluate their thoughts (Lopez et al., 2012; Wells, 2000).

The participants' relationships with thoughts appeared to evolve over the course of the illness. It appeared that the presence of eating disordered thoughts (e.g., "I'm fat") during recovery were interpreted as threatening, interfering with recovery, and generated frustration and anxiety about the possibility of a relapse. However, the ability to reflect on the validity of a thought and recognise the distortion or deceptive nature of thoughts appeared to be possible at a later stage in the journey to overcoming the illness. This is consistent with the view that starvation exacerbates metacognitive dysfunction (McDermott & Rushford, 2011).

#### **4.2.1.1.3.** *Relationships with Others.*

Participants provided an insight into their relationships with others. They primarily described relational patterns centred on issues of control, understanding, and trust. Individuals described the dynamic nature of relationships where they experienced loss or changes in relationships as a result of the disorder. These findings are in accordance with systemic models of understanding eating disorders, where family interactions are affected by the illness (Simic & Eisler, 2012).

It may be that CAT theory could account for these relational patterns (Newell, 2012; Ryle, 1995; Treasure & Ward, 1997). The concept of reciprocal roles can be

used to understand patterns in relationships, for example, participants described high levels of self-control (e.g. restricting) and experienced control in relation to others, which could be presented as a controlling-controlled reciprocal role (Newell, 2012; Ryle, 1995; Treasure & Ward, 1997).

Relationships appeared to play a role in the cessation of restricting as participants held concerns that continued restriction would produce a negative response from others. In the early stages, it may be that periods of cessation are prompted by positive feelings associated with 'successful' restriction or weight loss (Spada & Wells, 2006). However, at this stage the participants' concern regarding potential conflict presented a barrier to restricting.

#### **4.2.1.2. *Cognition.***

The Cognition theme primarily concerns the role of attention, the effects of self-focus on mental abilities, and the way cognitive processes contribute to social isolation.

##### **4.2.1.2.1. *Focus of Attention.***

Participants engaged in threat-monitoring as evidenced by the vigilance to information on eating, weight and shape. Attention to threat-related information is consistent with research in AN and studies on information processing biases (e.g., eating disorder specific schema; McDermott & Rushford, 2011; Vitousek & Hollon, 1990). Wells and Matthews (1994) argue that individuals with emotional disorders have a tendency to execute plans that are comprised of negative biases.

Individuals tended to monitor their internal processes and described feeling self-conscious. Participants described feeling concerned about the way others may perceive their body. The experience of feeling self-conscious in individuals with AN is recognised in the literature (Legrand, 2009).

Participants described self-referent processing, where they focussed their attention on either their feelings or thoughts about themselves (e.g., their body, eating, weight, or shape). These findings are comparable to the adult studies, where

individuals with eating disorders reported high levels of self-focussed attention (McDermott & Rushford, 2011; Vann et al., 2003; Woolrich et al., 2008). This intense and inflexible way of focussing attention may interfere with self-regulation (Wells & Matthews, 1994).

Participants' self-directed attention appeared to influence their ability to engage socially. Social isolation means that others may have limited opportunity to reduce the emphasis placed on weight-controlling behaviours, as indicated by Fairburn et al. (2003).

#### **4.2.1.2.2. *Memory, Concentration and Confidence.***

At times participants reflected that self-focussed attention affected their cognitive abilities (e.g., attention and memory). Individuals described difficulties concentrating during conversations and on school work (e.g., in class, revision and during tests). When individuals were asked about their memory in the context of their eating disorders, their responses tended to indicate that they questioned their memory or were unable to trust their cognitive abilities and this influenced their behaviour (e.g., re-checking the calorie content of foods). It may be that beliefs about cognitive confidence (e.g., "I can't trust my memory when it comes to food") influenced the selection of coping strategies (e.g., checking behaviour; Wells & Matthews, 1994). Wells (1995) highlighted that negative beliefs concerning one's memories are implicated in the development of compulsive checking. Overall, these unhelpful patterns of responding may compromise an individual's cognitive abilities by limiting the availability of processing resources (Wells, 2000; Wells & Matthews, 1994).

#### **4.2.1.3. *Coping Strategies.***

The Coping Strategies theme incorporated adaptive and maladaptive strategies. Individuals responded to negative cognitions by using a range of coping strategies. Maladaptive approaches were implemented, such as avoidance and eating disorder behaviours (e.g., restricting and purging). Participants described many situations that they avoided, such as triggers of being around food and dieters, the

media (e.g., magazines), looking in mirrors, and at times described sleeping as means of escape or avoidance. The use of unhelpful coping strategies in AN has been described in several papers (e.g., Woolwich et al., 2008). The key problem with avoidance is that individuals fail to learn that their beliefs are erroneous, and subsequently the chances of a person selecting this unhelpful coping strategy in the future are increased (Wells, 2009; Wells & Matthews, 1994).

Most thought control strategies are considered to have a negative effect on processing (Wells, 2000). The strategies implemented by the sample were consistent with the TCQ by Wells and Davies (1994) and involved strategies such as social control, re-appraisal, thought suppression and distraction. Participants described being distracted by reading, writing, drawing, puzzles, revision, and music. Typically they believed in the effectiveness of these strategies.

#### **4.2.1.4. *Metacognitive profile of anorexia nervosa.***

Overall, this set of responses amounts to a toxic style of thinking (i.e., the CAS) and incorporates unhelpful meta-beliefs, perseveration, threat-monitoring, self-focussed attention, and unhelpful coping strategies (Wells, 2000, 2009).

At the outset, it was suggested that participants with AN would present with a metacognitive profile that is consistent with their adult counterparts, as per the S-REF model and the CAS (Wells & Matthew, 1994). Prior research by Cooper et al. (2007) and McDermott and Rushford (2011) identified that adults with AN scored highly on indicators of metacognitive dysfunction, whereby individuals held beliefs that thoughts and worry were dangerous or uncontrollable, presented with low cognitive confidence and tended to excessively monitor their cognitions. However, there were discrepancies between studies on positive beliefs about worry. The paper by McDermott and Rushford (2011) indicated that the controlling for BMI diminished the significant effect of positive beliefs about worry.

The results of this study with adolescents are similar to the results produced with adult samples. However the finding that the participants hold positive beliefs

about worry and consider worry as valuable is discussed further due to the inconsistencies between adults studies on this factor (Cooper et al., 2007; McDermott & Rushford, 2011). There are several elements to consider in regards to comparing adolescents and adults on positive beliefs about worry. There is the issue of BMI where participants in this study presented with a mean BMI of 17.8 ( $SD = 1.1$ ) which falls between the mean BMI of the samples in the two conflicting studies  $M = 16.73$ ,  $SD = 2.0$  (McDermott & Rushford, 2011) and  $M = 18.4$ ,  $SD = 3.1$  (Cooper et al., 2007). This study may have produced comparable results to the McDermott and Rushford (2011) paper as starvation is believed to increase metacognitive dysfunction.

There are further factors that may contribute to these results; in part they may reflect the different approach to assessment whereby qualitative methods enabled the researcher to explore worry beliefs by asking questions, for example concerning the impact of being unable to worry that elicited positive beliefs. Age per se may be a factor given that a study with healthy adolescents showed that positive beliefs about worry are at their highest at 16 years of age, which parallels the mean (and modal) age of the participants in this research (Barahmand, 2008). Finally, a further consideration may be that one's relationship with worry may change over the lifespan (Basevitz, Pushkar, Chaikelson, Conway, & Dalton, 2008; Fialko, Bolton, & Perrin, 2012; Vasey, 1993).

#### **4.2.2. Research question two.**

The first theme, Early Experiences and Memory captured the content and role of memory in adolescents with AN. The narrative of this theme reflected the experience and impact of negative early events on the participants' weight concerns. Several participants were able to provide rich accounts of at least one of their early memories; however overgeneral descriptions of life events were also offered at times (Brockmeyer et al., 2013; Kovács et al., 2011; Nandrino et al., 2006). Indeed, two of three participants with a BMI below 17.5 appeared to experience difficulties recalling early experiences associated with eating, weight or shape. This observation appears

to be in accordance with research that demonstrated a relationship between BMI and retrieval of distressing life events in individuals with AN (Brockmeyer et al., 2013). Finally, the affect regulation model indicates that this phenomenon of over-generality protects individuals from negative emotions associated with painful memories (Raes et al., 2003; Williams et al., 1996).

#### **4.2.2.1. Emergence of Weight Concerns.**

Participants recalled holding concerns about their size from as young as five. A key predisposing factor appeared to be others' direct or indirect negative comments regarding eating, weight or shape. Individuals described attention to weight-related factors in the family, the experience of being labelled as "big-boned" or greedy and conveyed the desire to reject this enforced identity. Participants described the role of their peers in the development of their weight concerns, where they reported weight-related teasing and being compared less favourably to others. Overall, these experiences appeared to generate feelings of embarrassment, shame, sadness, resentment, and frustration. These findings are in accordance with past studies that suggest eating disordered beliefs and symptoms are associated with negative comments from the system (Cooper et al., 1998; Eisenberg et al., 2003; Leung et al., 1996; Sweetingham & Waller, 2008).

#### **4.2.2.2. Systemic Factors.**

Participants described their families' relationship with food. Individuals were able to offer an account of their family food rules that involved the timing of certain meals, eating together at the table, snacking, eating the food they were given and food choices. Although family food rules are normal, Schmidt & Treasure (2006) suggested that individuals with AN are 'rigidly rule-bound', therefore it is possible that these family food rules are interpreted and subsequently applied in an inflexible manner in eating disordered populations (De Bourdeaudhuij & Van Oost, 1995, as cited by De Bourdeaudhuij, 1997).

While participants described times where parents used food as a reward (e.g., on special occasions), there were no accounts of food being used as a means of punishment. Evidence of a relationship between parental use of food as a reward and eating disorder symptoms has been presented in several papers (Brink et al., 1999; MacBrayer et al., 2001; Puhl & Schwartz, 2003). Puhl and Schwartz (2003) argued that using food as a reinforcer or punisher to control behaviour is considered effective. They postulate that parents are encouraged to use food to shape behaviour by the media, parenting books and psychologists (Schaefer & DiGeronimo, 1997).

There was a sense that participants wanted to protect their family from potential criticism by negating the influence of systemic factors. Typically individuals identified their families as having a healthy attitude towards food. At the same time, participants indicated that others in the wider family system experienced weight concerns or eating disorders, which corresponds to research on the systemic factors and familial transmission of the disorder (Davey, 2008; Strober et al., 2000).

#### **4.2.2.3. Stressors.**

Participants described at least one stressor that triggered their eating difficulties, these life events reflected loss, change or increased pressure. These precipitating factors of loss, change and increased pressure correspond to those identified by Carr (2006). School was a particular source of stress for the participants (e.g., transition to a new school or pressure from exams), while AN presented itself as the solution by way of control. Overall, this is consistent with the findings by Cooper et al. (1998) in that individuals with eating disorders described negative early experiences. For example, the case study the researchers presented indicated that one participant experienced a number of stressors such as the divorce of her parents and the change in living situation (Cooper et al., 1998).

#### **4.2.2.4. Role of Memory.**

The Role of Memory subtheme focussed on the triggers, processes and effects of experiencing unpleasant memories. Participants reported that their

memories can be accessed intentionally or unintentionally. The content of these memories primarily consisted of episodes of weight-related teasing that occurred prior to the onset of AN, however there were also references to negative experiences that occurred in the earlier stages of the disorder.

Participants reported a number of triggers to unpleasant memories. One factor that affected recall of negative memories appeared to be their emotional state. They tended to recall negatively valenced memories (e.g., about their weight) in depressed mood states. This is in accordance with studies of mood-congruent memory, which demonstrated the impact of mood on memory (Blaney, 1986; Lau et al., 2004; Teasdale, 1983).

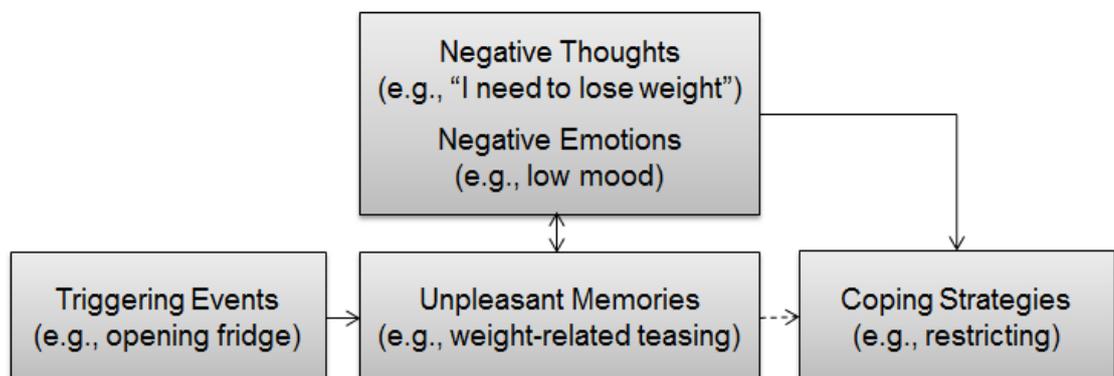
Participants reported that their recollections were experienced as distressing. However some participants described using their memories (e.g., of their premorbid state) to support their negative beliefs, eating disordered thoughts (e.g., "I'm fat") or to make themselves feel worse. The interaction between memories and cognitive processes appeared to elicit restriction. These findings are consistent with the researcher's suggestion that individuals may use their negative memories to maintain dietary restriction and their disorder. Past research proposed that individuals with AN may try to make themselves feel worse by using cognitive processes and that memories may play a role in strengthening self-schemas which affects eating disorder symptoms (Conway & Pleydell-Pearce, 2000; Habermas & Bluck, 2000; Markus, 1977; Woolrich et al., 2008).

Contrary to the above accounts of memories maintaining distress and the disorder, two participants indicated that they used memories of their worst times with AN to serve as an incentive to overcome the disorder and these recollections elicited feelings of pride. These individuals had experienced AN for 46-48 months, which represented the longest illness period in the sample. It is as though at this stage in recovery they have been able to reflect on the course of the illness or their progress, and as a result the memories are interpreted in a different way. Therefore, memories

may be considered to play a role in the development and maintenance of the illness in the earlier stages; however the use of memory may become more adaptive during recovery (Brink et al., 1999).

Figure 5 was developed while the researcher was reviewing the subtheme of Role of Memory. This diagram served to aid the researcher in synthesising the findings and understanding the mechanisms that underpinned the relationship between unpleasant memories and restricting for example. Therefore, Figure 5 summaries the information on memory where unpleasant memories appear to be initiated by triggering events (e.g., weighing themselves) or negative internal states (i.e., cognitions and emotions). In turn, experiencing these negative recollections can influence an individual's thought processes and affective responses (e.g., reinforcing existing negative thoughts). It appears that memories provided an incentive to restrict and exerted their influence on behaviour through cognitions and emotions. For example, (in Section 3.5.1.4) Gemma described her memories of “how big” she perceived herself at her pre-AN weight, this led to an appraisal of this memory, thoughts about not wanting to return to her earlier weight, and feelings of guilt, together these mechanisms appeared to be the catalyst for dietary restriction.

Figure 5. The Role of Memory.



One of the researcher's suggestions was that individuals may use thought control strategies to suppress their memories from conscious awareness. While participants did consciously bring memories to mind, only one person endorsed

memory suppression as a means of coping with unpleasant memories, which resulted in an increase in the intensity of the memory. This phenomenon is comparable to research on theories of thought suppression (i.e., ironic processing theory) and models of autobiographical memory where regulatory strategies are implemented to suppress unpleasant memories (Barnier et al., 2004; Conway, 1996; Conway & Pleydell-Pearce, 2000; Dalgleish et al., 2005; Mazzoni & Kirsch, 2002; Wegner, 1994).

### **4.3. Strengths and Weaknesses**

The section presents the strengths and weaknesses of the study, key considerations included the study's contribution to the literature, the design of the study, the quality of the qualitative research and the positive responses from participants, the psychologist and clinicians regarding the findings.

#### **4.3.1. Strengths of the study.**

##### **4.3.1.1. Contribution.**

One of the strengths overall is that this thesis contributed to the knowledge on metacognition and memory in this clinical group. This is the first study to consider metacognitive factors in adolescents with AN or with an eating disorder per se. As indicated in the earlier literature review (Section 1.9), the majority of papers used an analogue adult sample, while only five studies assessed metacognition in adults with AN (e.g., McDermott & Rushford, 2011). Therefore, this study benefitted from a clinical sample that focussed on adolescents, a previously under-researched group. Furthermore, this thesis also reflected the call for further qualitative research by others in this field (Kleinbichler, 2013; Vann et al., 2013).

A further benefit of the study concerned the exploration of memory. While memories may be considered to be predisposing and precipitating factors in eating disorders (Brink et al., 1999), there appeared to be a dearth of studies on the role of memory in this population. Research tended to focus on early negative experiences per se as opposed to the impact of experiencing those memories, while this study suggests memories may affect food intake and mood for example.

#### **4.3.1.2. *Internal processes and engagement.***

These extracts from the reflexive journal provide details of the researcher's internal processes (Appendix E) and engagement with the research. The researcher's thoughts in organising the data into themes are provided in the extracts below as an example.

The papers on TA highlight the iterative process of coding and consistency within themes. This consistency within themes has been a helpful guide in organising the data. At times I have used my knowledge of theory to organise the data, for example the subtheme of Relationships with Negative Thoughts and Worry forms part of the Relationships in Anorexia Nervosa theme. Conceptually this was placed here as I recall Adrian Wells at a conference on metacognition in 2012 explaining that we have a relationship with our thoughts.

I have spent time thinking about the Relationships with the Self and Anorexia Nervosa subtheme. I have been wondering whether this subtheme should be presented as one subtheme or divided into two. My sense from the data is that it is one subtheme as the self and AN are presented as intertwined in a way, and AN is considered to be a part of them. The participants also described an internal battle between the self and AN and therefore again it makes sense to present this as one subtheme. My thoughts at this stage are that this challenge may have presented itself as participants may have a divided sense of self?

#### **4.3.1.3. *Coherence.***

As described earlier, coherence and resonance can correspond to the fit between the data and the theoretical position and belief system of the researcher

(Lincoln & Guba, 1990; Stiles, 1993). As indicated from the above extract from the reflexive journal, there were theoretical reasons for placing the Relationships with Negative Thoughts and Worry within the Relationships in Anorexia Nervosa theme. The reasoning was primarily based on metacognitive theory; however this organisation was also consistent with the relational way that the researcher sees the world (i.e., from a CAT perspective; Ryle, 1995).

#### **4.3.1.4. *Consensus and uncovering.***

This quality aspect considers whether the findings uncover an answer to a question or change another's perspective (Stiles, 1993). One of the clinicians provided feedback on the findings, which may be helpful to consider. This clinician was presented with findings and some of the extracts from the previous chapter, one being the example where a participant described consciously "fabricating" the image of herself in her mind's eye to make herself appear bigger. This uncovered information about body image that the clinician felt could be used clinically for example.

I feel that this is a very relevant and a clinically useful piece of research that can inform clinical practice... I was particularly interested in the body image feedback and that I have made the assumption in the past that this was an integral part of the disorder that I would be highly unlikely to directly influence. I will now rethink my practice and review ways in which we may be able to assist the young person in directly influencing that image. Some of the narrative you quoted is helpful in enhancing the clinicians' ability to understand and in turn empathise with the position of the young person as without that there is a limited therapeutic relationship/alliance. The greater the insight into their distress and cognitions the greater the opportunity to work with the young people in managing change conveying a sense that you do

understand their position... this valuable piece of work can inform practice.

#### **4.3.1.5. Testimonial validity.**

The findings were presented to the participants for feedback. As discussed earlier, Kotre (1984) and Stiles (1993) suggest that the responses of the participants can indicate support for one's findings, for example where participants convey being understood or where the individual offers further details for example. Eight participants were involved in the participant validation process. All eight participants provided positive feedback on the findings and expressed that they felt understood and that the findings captured the discussion from their interview (see Appendix E), here are some of the participants' reactions: "I think they hit on everything I talked about... I thought they were really good and... in detail... basically everything I said you definitely got in the findings" (Cara, 31, 2-4), "I think they definitely reflect how I feel and how like I think about food and... definitely about me worrying. I certainly feel it has been helpful to me so I think that's very interesting" (Gemma, 10, 2).

#### **4.3.1.6. Catalytic validity.**

Catalytic validity is where a participant's response to the findings demonstrates change or growth and this represents a further source of evidence in support of the study's findings (Stiles, 1993, 1999). Many of the participants expressed change or growth in response to the findings. Some of the sample presented with greater metacognitive awareness. They conveyed that they had learned about their cognitive processes or themselves from the findings.

I think I've learned that the kind of impact of how much I worry and what the impact of that is on myself, because before... I worried quite a lot but I didn't realise what the impact was and that there are some positive

aspects to it but also there's quite a lot of negative aspects to it as well.

(Emily, 11, 14)

I suppose I've learned that a lot of different people have different experiences but they can all relate, like they're all very similar in the way people think... I do find that I can like relate more to myself about how I worry and that. (Isabelle, 7, 14)

The response below indicates that Dana feels she can be more compassionate with herself in the face of setbacks in her recovery, while Cara described her emotional response to the findings of feeling proud.

I think I've learned that it's kind of okay that fair enough I fell down but I'm getting up again, and it's okay that I fell down because I'm getting back up again and there's... reasons... it wasn't just random. (Dana, 25, 18)

I think that I just can kind of... feel proud that I've gone through it and everything and I think that it's been like a really long journey and I think the findings definitely show how hard it is for someone that has anorexia and how quite a lot of people don't understand how much you go through... I definitely think the findings... they've definitely shown that I've come a long way and everything so, I thought they really helped me. (Cara, 32, 18)

#### **4.3.1.7. Reflexivity and reflexive validity.**

One of the strengths of the study was the development of the questions during the research process. The researcher reflected on the value of certain

questions during the study. At times, re-phrasing questions or adding questions had a significant impact on the richness of the data and the conclusions one could draw regarding the metacognitive profile (Appendix E).

Discussing the findings and narrative of the study with a person with prior experience of TA was beneficial for reflexivity. Therefore, one of the strengths of this study is that the codes and themes of the researcher were reviewed by a psychologist who provided feedback in support of the analytic claims made by the study. The psychologist's feedback and interpretations were provided following a review of the themes (Appendix E). An example of this feedback is below and refers to the Relationships with the Self and Anorexia Nervosa subtheme.

Anorexia nervosa purports to replace or provide what is missing: control, acceptance, safety. However it in itself is the opposite of those things. It is perpetuated by the promise it provides: perfection, which is eternally out of reach.

Anorexia nervosa takes on the persona of the other self, placing itself within the spaces created by self-loathing and self-hatred. It becomes a toxic surrogate that takes the place of self-acceptance. As you "feed" the anorexic self it becomes fatter, starving and emaciating the old self into nothingness, invisibility.

The findings have also changed the perspective of the researcher. There were inconsistencies in prior research regarding the presence of positive beliefs about worry in adults with AN. However, the individuals in this study did not only endorse positive beliefs about worry, they presented worry as valuable. Indeed, when presenting the findings back to the participants, several of the participants commented on their relationships with worry and reflected on the importance of worry to them.

I wasn't really aware that I considered worrying to be helpful and it that it was that important to me, so I've learned that I'm someone who needs worrying... I don't know what I'd do without it and I didn't know that it was that important to me. (Gemma, 10, 8)

#### **4.3.2. Weaknesses of the study.**

##### **4.3.2.1. *Clinical sample.***

Few studies have explored the relationship between metacognition and eating disorders. While one of the strengths of the study was use of a clinical sample, the participants were at different stages in their recovery, from residing in an inpatient unit to striving to overcome the disorder. While this may be considered a negative in terms of a lack of a homogenous sample, in some ways the research benefitted from this variety as this may have uncovered an answer to another question, the change in metacognition throughout the stages of AN. At the initial stages of recovery, the participants' level of metacognitive dysfunction appeared to be higher, consistent with research by McDermott and Rushford (2011) that indicated starvation may have an impact on metacognitive dysfunction. Furthermore, individuals that were further along in their journey to recovery were able to reflect upon and provide detailed accounts of their past and present experiences.

One further consideration concerns comorbidity of diagnoses. While the primary diagnosis for the participants was AN, several participants presented with comorbid symptoms of depression. It is acknowledged that there are metacognitive factors relevant to depression and that excluding participants with symptoms of depression or major depressive disorder would be a consideration in future studies (Papageorgiou & Wells, 2003). However, in practice this presents a challenge as rates of comorbid depression in AN are as high as 71% or 47% in adolescents (Bühren et al., 2014; Godart et al., 2007).

#### **4.3.2.2. Scope of the study.**

This study has produced a number of interesting results and expanded the knowledge of AN by increasing one's understanding of the role of early experiences and memory, although arguably it may have been helpful to have focussed the study solely on metacognitive factors (e.g., excluding questions related to family food rules). This may have enabled the researcher to gain greater information on metacognition by also using quantitative measures.

One of the clinicians raised an interesting question about the possible responses the interview would have generated in healthy adolescents, particularly in terms of relationships with others and early experiences. Therefore it may be helpful to address the non-inclusion of a comparison group. It is beyond the scope of this thesis to consider memory and metacognitive factors in both individuals with AN and healthy participants. Indeed, the rationale for selecting a solely clinical sample was that differences between clinical and non-clinical groups have already been established in prior research and the primary aim of this study was to explore, describe and understand the nature of dysfunctional cognitive processes.

#### **4.3.2.3. Triangulation.**

Eating disorder symptoms were assessed using information from the EAT-26 (Garner et al., 1982) and SCID-IV-RV (First et al., 2002), which the aim of contextualising the findings from the metacognitive profiling interview. However, it would have been more useful to have administered the MCQ for Adolescents (MCQ-A; Cartwright-Hatton et al., 2004), as a means of triangulating the qualitative information from the metacognitive profiling interview, to support the qualitative findings (Thurmond, 2001). This measure parallels the adult version (i.e., the MCQ-30), although differs in terms of language, where certain items have been re-phrased to be more age-appropriate (Cartwright-Hatton et al., 2004; Wells & Cartwright-Hatton, 2004). The Cronbach's alpha level of each of the five subscales of the MCQ-A ranged from .66 to .88, while the reliability co-efficient for the scale overall was high at .91

(Cartwright-Hatton et al., 2004). This questionnaire would have been a useful addition to the study by providing a means of triangulation and support for the findings.

#### **4.3.2.4. *The assessments.***

One of the weaknesses of the study involved the use of a self-report measure of eating disorder symptoms, the EAT-26 (Garner et al., 1982). For example, one person that fulfilled the stricter diagnostic criteria for AN gained a score of 6, while a score of 20 or above indicates disordered eating. There appeared to be two broad reasons for low scores, one is under-reporting (e.g., social desirability response bias or difficulties in acceptance of the illness) and the other relates to the scoring system. Responses to items rated as “always”, “usually” and “often” are scored as 3, 2, and 1 respectively, while responses to “sometimes”, “rarely” and “never” equate to a score of zero. The three participants that gained a low score tended to tick the category “sometimes” and subsequently this significantly affected their overall score. This measure has received criticism due to poor sensitivity and specificity (Goss et al., 2012).

An alternative measure that could be administered is the Eating Disorder Examination Question (EDE-Q; Fairburn & Beglin, 1994), which was designed to correspond to the widely used interview-based assessment of eating disorder symptoms, the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987; Fairburn & Cooper, 1993; Garner, 2002). The EDE-Q is a 36-item self-report questionnaire that measures eating disorder symptoms over a period of 28 days. The measure uses a seven-point scale, for example responses to the item “have you felt fat?” range from “no days” to “every day”. The clinical range corresponds to scores of four or above on certain items (Mond, Hay, Rodgers, Owen, & Beumont, 2004). There are high concordance rates between the EDE and EDE-Q subscales of Restraint (.71), Eating Concern (.68), Weight Concern (.77), Shape Concern (.78) and Global (.84; Mond et al., 2004).

The SCID-I-RV was the most up-to-date version of the clinical interview at the time the researcher was collecting data (First et al., 2002). However, this correlates with DSM-IV-TR as opposed to DSM-V (APA, 2000, 2013). The researcher aimed to overcome this weakness by indicating the number of participants that would have had a diagnosis of AN from a DSM-IV-TR and DSM-V perspective in the results section. The updated version of the SCID-I-RV is in development and would be the most appropriate assessment tool to use once available (Columbia University, 2014).

#### **4.3.2.5. *Quality in Qualitative Research***

Quality control in qualitative research is an important issue that attracts much debate (Mays & Pope, 2000). The need to assess quality in qualitative studies has generated volumes of checklists, which can feel confusing to a novice investigator (Kitto, Chesters, & Grbich, 2008; Mays & Pope, 2000). In this study the researcher used the principles from the Stiles (1993) paper to guide the study and demonstrate quality. On reflection it may have been more appropriate to use a contemporary set of criteria, as this would have reflected the advances in understanding and assessment of quality in qualitative research. For example, more recent papers include the principle of 'fair dealing', which can refer to presenting a range of participant perspectives and paying attention to contradicting views (Cooper & Endacott, 2007; Cooper, Endacott, & Chapman, 2009; Mays & Pope, 2000). While negative cases were discussed, there was an over-reliance on quotes from a couple of participants in earlier drafts of this thesis. However the researcher has since aimed to address this balance, in accordance with this quality principle (Cooper & Endacott, 2007; Cooper et al., 2009; Mays & Pope, 2000).

Spence and Richie (2012) presented three overarching principles for ensuring quality, which were developed following a review of the literature. One of the key principles concerned the contribution or the value of the study in terms of enhancing understanding of a given topic (Spence & Richie, 2012). This criterion can be regarded as fundamental, albeit seemingly absent from the Stiles (1993) paper.

However as indicated above, this study has contributed to understanding, and therefore fulfils this criterion (Section 4.3.1.1.).

#### **4.3.2.6. *The Approach to Qualitative Research.***

It may be that the researcher's perspective and decisions were influenced by prior research experience in quantitative approaches, for example the researcher considered the metacognitive profiling interview (Wells & Matthews, 1994) to be semi-structured and flexible. The benefit of using this type of interview was that key questions were asked concerning metacognition, which enabled the researcher to consider the metacognitive profile of the participants (Berg, 2004). However, on reflection it is acknowledged that the use of this interview may be considered a weakness, as the volume of potential questions may have influenced the content of the interview. It may be that a less structured approach may have been more appropriate. Nevertheless, the researcher made every effort to be responsive and curious to the participants' stories during the interview process (Appendix B).

Overall, these reflections have led one to consider the journey from quantitative to qualitative researcher. At times this transition may have presented a challenge at several stages in the research process, for example selection of interview questions or the initial inclination to over-extend the findings and consider MCT as an appropriate clinical implication. However the experience of using qualitative approaches has been positive, and in some ways parallels the analytical processes involved in therapy (Braun & Clarke, 2013).

#### **4.4. Future Directions**

Further research is required to explore metacognition in adolescents with AN. It may be that some form of replication of this study may be beneficial. As this thesis offers a description of the metacognitive profile of AN, it may be appropriate for future studies to use quantitative approaches as guided by the work of McDermott and Rushford (2011), incorporating the MCQ-A (Cartwright-Hatton et al., 2004) and TCQ (Wells & Davies, 1994). Indeed, it may be useful to recruit both males and females

with the disorder as a next step, firstly as males are under-represented in the literature (as evidenced in Section 1.9) and secondly, as there may be gender differences in metacognitive processing and strategies in AN. In a sample of healthy adolescents, females endorsed greater positive beliefs about worry than males (Barahmand, 2008). Moreover, Bacow et al. (2009) identified that adolescent females with anxiety disorders scored significantly higher on an adapted child version of the MCQ than their male counterparts.

The participants in this study held a number of beliefs about worry. It may be that the mechanisms that are presented as maintaining the worry process for individuals with GAD, may be relevant to AN patients who described meta-worry (Wells, 1995, 1997). Therefore, a study with individuals with AN and GAD could identify if there are any similarities and differences in the processes that maintain the cycle of worry in these clinical groups.

Future research that investigates the changes in metacognition at different stages of the illness would be interesting based on the preliminary results from this study and the McDermott and Rushford (2011) paper. Furthermore, it may be appropriate to consider an intervention study concerning the effectiveness of MCT in AN in the future. Preliminary MCT effectiveness studies to date have focussed on depression, GAD, social phobia, and OCD for example (Wells, 1995; Wells et al., 2009; Wells et al., 2012; Wells & King, 2006; Wells & Papageorgiou, 1998; Wells et al., 2010).

As the participants described rules for continuation or cessation of eating or exercise behaviour, it may be interesting to explore stop rules in greater detail (e.g., “I must stop eating before I reach 300 calories” or “I must continue exercising for at least two hours”; Davey et al., 2005). Investigating the content, impact, and indeed the failure to abide by these rules may be clinically useful to explore.

One further development from this study may be exploring the role of memory in eating disordered populations using qualitative methods with the aim of devising a

questionnaire. The new measure may assess the presence, use and impact of memories and could then be used to assess memory in a large eating disordered sample to establish if these preliminary results translate to the wider population and to make comparisons between clinical and non-clinical groups (e.g., dieters and non-dieters).

Finally, there is emerging research on an intervention to reduce the distress associated with recalling unpleasant memories. Denkova et al. (2014) demonstrated that diverting one's attention away from the distressing or emotional aspects of a memory, and instead considering non-emotional content (e.g., timing and location) helped to reduce the negative affective response of the memory. It may be interesting to assess the effectiveness of this intervention in AN in the future, as in this study participants reported experiencing their memories as distressing at times. It may be possible that if the emotional response of a memory were reduced, the negative role of memory of eliciting maladaptive responses (e.g., restricting) may in part be attenuated.

#### **4.5. Clinical Implications**

This section focusses on the clinical implications of this preliminary study. The researcher emphasises that further research is required to investigate the appropriateness of any metacognitive interventions. However, at this stage it may be useful to start to consider the way this study may provide some tools that can be used during therapy.

The researcher provided feedback on the outcomes of study to the teams involved in the research. This feedback was aimed at presenting the findings and implications of the research, and generating discussion on the study's implications at the local level.

Clinically, it may be helpful to consider the relationship that individuals possess with the disorder (e.g., "AN understands me") and the anorexic voice (e.g., "the voice is controlling"; Wolff & Serpell, 1998). Clinicians could use a decisional matrix containing the advantages and disadvantages of AN, consistent with

recommendations from the literature (Cooper et al., 2009; Wolff & Serpell, 1998). This approach can demonstrate an understanding of the individuals' perspective and experiences, and may meaningfully contribute to the formulation (e.g., maintaining factors) and building rapport (Cooper et al., 2009; Wolff & Serpell, 1998). Indeed, it may be helpful to ask questions about whether they experience an 'internal battle' or feel divided between the disorder and their old self, particularly during the recovery process.

The participants in the study described improvements in meta-awareness as a result of the research. Therefore, asking questions regarding patients' thinking may be helpful. Clinicians could potentially enquire about the way individuals are focussing their attention (i.e., internally or externally), the stance they adopt in relation to their thoughts (e.g., "do you accept your thoughts as facts?"), or enquire about their worry beliefs. The latter may involve asking questions to young people on the advantages and disadvantages about worry. It may be useful to consider whether an individual possesses positive beliefs about worrying about eating, weight and shape. Finally, it may be beneficial to consider whether worry serves as a cognitive strategy or as a metacognitive strategy (Wells, 1995).

#### **4.6. Conclusion**

Nine adolescent females aged 15-17 participated in this study exploring the metacognitive profile and role of memory in AN. Key studies that investigated metacognition in AN using an adult sample identified a pattern of responding that was characterised by dysfunctional processing routines and consistent with a toxic style of thinking, i.e., the CAS (Cooper et al., 2007; McDermott & Rushford, 2011; Vann et al., 2013; Wells & Matthews, 1994; Woolrich et al., 2008).

The literature review highlighted that using inductive methods to assess metacognitive factors and memory in adolescents, a previously under-researched population may represent a valuable contribution to the evidence-base. A qualitative methodology was selected with the main aim being to explore the content, use and

impact of memory, the relationship the participants' possess with their thoughts and worry, and the strategies they employ to cope with distressing mental events.

The process of conducting a TA was consistent with the paper by Braun and Clarke (2006). This approach led to the identification of four key themes from the dataset as a whole, these themes were referred to as Relationships in Anorexia Nervosa, Cognition, Coping Strategies, and Early Experiences and Memory.

The Relationships in Anorexia Nervosa theme concerned relational patterns characterised by control and deception that were experienced in the relationships with the self and anorexia, with others, and with negative thoughts and worry. Participants described self-focussed attention and deficits in their mental abilities, as indicated by the Cognition theme. The Coping Strategies theme consisted of overt and covert behaviours that the participants engaged in to manage their distress.

The narrative of the Early Experiences and Memory theme centred on the negative impact of early experiences (e.g., weight-related teasing), which appeared to be a predisposing factor in the development of AN. Recalling unpleasant experiences tended to have an impact on their cognitions, emotions and behaviour, for example individuals appeared to interpret their memories as distressing and use them as an incentive to restrict their food intake, further perpetuating the disorder.

The key conclusions from the study were that participants described negative self-beliefs, perseverative thinking, self-focussed attention, threat-monitoring and avoidance. They presented with metacognitive dysfunction which is consistent with their adult counterparts. The level of metacognitive dysfunction appeared to be related to the level of starvation, for example individuals that were making progress in their recovery appeared to be able to reflect on their cognitions at times. Participants described positive beliefs about worry and presented worry as valuable commodity. Furthermore, individuals with AN described negative early experiences that ultimately served to influence their behaviour.

One of the possibilities for future research included forms of replication of this study with a larger clinical sample to support these preliminary findings. While acknowledging further research is required, the potential clinical implications of the thesis were discussed, which were largely based on tools for generating meta-awareness in individuals with AN.

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## APPENDICES

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## Appendix A: Metacognitive Profiling Interviews

## Metacognitive Profiling Interviews

### Metacognitive profiling template (Wells & Matthews, 1994)

#### Meta-beliefs/appraisals.

1. When you felt anxious/panicky/depressed, did you have any thoughts about your mental state?
2. What were these thoughts?  
*Probes: Did you have any negative thoughts about your own thinking?  
What thoughts did you have?  
Did you notice that you were worried or ruminating about something?  
What was your rumination like?*
3. Do you think there are any advantages to worrying/ruminating/negative thinking?  
*Probes: What are the advantages?*
4. Do you think there are any disadvantages to worrying/ruminating/negative thinking?  
*Probes: What are the disadvantages?*
5. Can worrying/ruminating/negative thinking in certain ways be harmful or dangerous?  
*Probes: In what way could it be dangerous or harmful?*

#### Coping strategies.

6. When you felt anxious/depressed, what did you do to cope with the situation?  
*Probes: Did you do anything to deal with the threat or danger?  
What did you do?  
Did you do anything to control your thoughts?  
What did you do?  
Did you do anything to deal with your feelings?  
What did you do?*
7. What was your goal in using your coping strategies?
8. That is, what were you hoping to achieve?  
*Probes: How did you know that you had accomplished your goals?  
How would you know when coping is effective?  
What was the effect of your coping strategies on your feelings and thoughts?*

#### Cognitive processes, attention.

9. What were you paying most attention to in that situation?  
*Probes: What was most salient?  
Were you focusing on your thoughts, feelings or the situation?  
Were you self-conscious?  
What were you most conscious of?  
Are there any advantages to focusing your attention in that way?  
What are they?*

#### Cognitive processes, memory.

10. Were any memories activated?
11. What were they?  
*Probes: Did you use your memory to try and work out what was happening and/or how to deal with the situation?  
How did you use your memory?*

### **Cognitive processes, judgements.**

12. How did you form your judgements in that situation?  
*Probes: What sort of evidence did you look for?*  
*Where was your evidence coming from to support your thoughts?*  
*Were your judgements influenced by your physical feelings?*  
*Which feelings?*  
*Were you influenced by mental feelings?*  
*Were you influenced by your emotional feelings?*
13. If your feelings had been different, would you have judged the situation differently?
14. How confident were you in your own mental abilities?

### **Mode.**

15. Did you accept your thoughts and judgements as facts, based in reality?
16. Could you see your thoughts as distortions of what was really happening in the situation?
17. Can you keep your distance from these negative thoughts and feelings when they occur?

### **Adapted Metacognitive Profiling Interview for this Study**

*I am going to ask you a number of questions. There are no right or wrong answers and feel free to ask me to ask the question in a different way or repeat a question. The questions I'm going to ask you are about your eating difficulties, your thinking and your memories. It is important to say that sometimes our thoughts can be in words, and other times our thoughts can be in pictures. At times we can have unhelpful thoughts, and I will be asking you a bit about this today.*

#### **Questions about anorexia nervosa.**

It would be helpful to start by talking about your eating difficulties/anorexia nervosa.

1. Can you tell me about your eating difficulties/anorexia nervosa?  
*When did your difficulties start?*  
*What happened at that time?*
2. What are your thoughts about having eating difficulties/anorexia nervosa?  
*What do you think keeps your eating difficulties going?*
3. What effect does anorexia nervosa have on your life?

#### **Meta-beliefs/appraisals and coping strategies.**

Sometimes we think about our own thoughts, for example, when a thought pops into our head, we may start to think about whether we want to have that thought or not.

I would like you to picture your whole body in your mind. Okay?

4. What thoughts are you having about this picture?  
*Can you tell me more about these thoughts?*  
*Do you have any unhelpful thoughts about this picture?*  
*You noticed that a thought came into your mind about..., what do you think about that?*  
*What does this picture mean to you?*

Unhelpful thoughts can make people feel worried or unhappy.

5. Can you tell me what you do to cope with your unhelpful thoughts?
6. Have you ever tried to cope with unhelpful thoughts by restricting your food intake?  
*Can you tell me more about this?*  
*What was your main goal in doing this?*  
*How did restricting your food intake affect your thinking?*

7. Have you noticed any advantages to unhelpful thinking?  
*Are there any advantages to having unhelpful thoughts about your eating, weight or shape?*  
*What are the advantages?*
8. Have you noticed any disadvantages to unhelpful thinking?  
*Are there any disadvantages to having unhelpful thoughts about your eating, weight or shape?*  
*What are the disadvantages?*
9. Can worrying be helpful?  
*How can it be helpful?*
10. Can worrying can be unhelpful?  
*How can it be unhelpful?*
11. Can worrying or having unhelpful thoughts be dangerous or feel out of control?  
*In what way could it be dangerous or feel out of control?*

Sometimes people try to change the way they think about things to make themselves feel better.

12. In what ways have you tried to change the way you think?
13. Have you ever tried to push unhelpful thoughts away?  
*Can you give me an example?*  
*How successful were you in pushing your thoughts away?*
14. Have you ever tried to distract yourself from having an unhelpful thought?  
*Can you give me an example?*  
*What did you do to distract yourself?*  
*Did you try to restrict the amount you ate to distract yourself?*

Sometimes people try to change the way they think by replacing an unhelpful thought with a more positive thought.

15. Have you ever tried to cope with an unhelpful thought by trying to bring a more positive thought to mind?  
*Can you give me an example?*  
*How did this affect how you were feeling?*

#### **Cognitive processes, attention.**

I am going to ask you some questions about concentration.

I would like you to think back to the last time you restricted your food intake. Okay?

16. Can you tell me what you were concentrating on most at that time?
17. Did you concentrate on your thoughts?  
*How helpful did you find concentrating on your thoughts?*
18. Did you concentrate on your feelings?  
*How helpful did you find concentrating on your feelings?*
19. Did you concentrate on what was happening around you?  
*How helpful did you find concentrating on what was happening around you?*
20. How much did you monitor (or notice) your thoughts?  
*How helpful did you find concentrating on thoughts?*
21. How much did you concentrate on yourself?  
*How helpful did you find concentrating on yourself?*

#### **Cognitive processes, memory.**

Sometimes our memories of past events or experiences come to mind. I'm interested in your thoughts and memories about your eating difficulties.

22. When you have unhelpful thoughts, do any memories come to mind?

I would like you to think of the last time you felt hungry. Okay?

23. What memories or thoughts came to mind?  
*How did those memories/thoughts affect your eating?*  
*What were you aiming for?*

24. What memories or thoughts did you have about your eating, weight, or shape?  
*How did those memories affect your eating?*  
*What were you aiming for?*

People tend to grow up with rules about food and eating that are learned from their families.

25. What rules did your family have about food and eating when you were growing up?

26. Can you describe how eating, weight and shape were talked about in the family when you were growing up?

Sometimes food is used to reward or punish our actions.

27. Do you remember a time when food was used as a reward?

*Can you give me an example?*

28. Do you remember a time when food was used as a punishment?

*Can you give me an example?*

29. Do you have any memories about anyone in your family dieting or having eating difficulties as you were growing up?

*Can you tell me more about that?*

30. Have you ever been teased or made to feel unhappy about your weight, shape or eating?

*Can you tell me more about that?*

*Can you tell me your earliest memory of this?*

Memories can be important and powerful at times.

31. Can you describe a powerful or strong memory about your eating, weight or shape?

*How does it make you feel?*

*How often does this memory come to mind?*

*In what way does it affect your eating?*

### **Cognitive processes, judgements.**

Sometimes we judge ourselves or view ourselves in a certain way.

I would like you to think about the last time you had an unhelpful thought. Okay?

32. **Mode:** At the time, did you tend to accept your thoughts as facts?

33. **Mode:** Looking back, can you tell me how well your thoughts matched what was really happening in that situation?

34. What judgements did you make about yourself?

*What did you base your thoughts on?*

*What sort of evidence did you look for?*

*Can you tell me how judging yourself in that way made you feel?*

35. If your feelings had been different, how might you have judged the situation differently?

36. Has restricting your food intake ever affected how you judged yourself?

Table 1.

*Adaptations to the Metacognitive Profiling Template*

No	Metacognitive Interview	Adapted Metacognitive Interview
1	<p>When you felt anxious/panicky/depressed, did you have any thoughts about your mental state?            What were these thoughts?  <i>Did you have any negative thoughts about your own thinking?</i>  <i>What thoughts did you have?</i>  <i>Did you notice that you were worried or ruminating about something?</i>  <i>What was your rumination like?</i>            Do you think there are any advantages to worrying/ruminating/negative thinking?  <i>What are the advantages?</i>            Do you think there are any disadvantages to worrying/ruminating/negative thinking?  <i>What are the disadvantages?</i>            Can worrying/ruminating/negative thinking in certain ways be harmful or dangerous?  <i>In what way could it be dangerous or harmful?</i></p>	<p><b>I would like you to picture your whole body in your mind. Okay?</b>            What thoughts are you having about this picture?  <b>Unhelpful thoughts can make people feel worried or unhappy.</b>            Can you tell me what you do to cope with your unhelpful thoughts?            Have you ever tried to cope with unhelpful thoughts by restricting your food intake?  <i>How did restricting your food intake affect your thinking?</i>            Have you noticed any advantages to unhelpful thinking?  <i>Are there any advantages to having unhelpful thoughts about your eating, weight or shape?</i>            Have you noticed any disadvantages to unhelpful thinking?  <i>Are there any disadvantages to having unhelpful thoughts about your eating, weight or shape?</i>            Can worrying be helpful?  <i>How can it be helpful?</i>            Can worrying can be unhelpful?  <i>How can it be unhelpful?</i>            Can worrying or having unhelpful thoughts be dangerous or feel out of control?  <i>In what way could it be dangerous or feel out of control?</i></p>
2	<p>When you felt anxious/depressed, what did you do to cope with the situation?  <i>Did you do anything to deal with the threat or danger?</i>  <i>What did you do?</i>  <i>Did you do anything to control your thoughts?</i>  <i>What did you do?</i>  <i>Did you do anything to deal with your feelings?</i>  <i>What did you do?</i>            What was your goal in using your coping strategies?            That is, what were you hoping to achieve?  <i>How did you know that you had accomplished your goals?</i>  <i>How would you know when coping is effective?</i>  <i>What was the effect of your coping strategies on your feelings and thoughts?</i></p>	<p><b>Sometimes people try to change the way they think about things to make themselves feel better.</b>            In what ways have you tried to change the way you think?            Have you ever tried to push unhelpful thoughts away?  <i>Can you give me an example?</i>            Have you ever tried to distract yourself from having an unhelpful thought?  <i>Can you give me an example?</i>  <b>Sometimes people try to change the way they think by replacing an unhelpful thought with a more positive thought.</b>            Have you ever tried to cope with an unhelpful thought by trying to bring a more positive thought to mind?  <i>Can you give me an example?</i></p>

Note. The first column refers to domains: (1) Meta-beliefs and appraisals (2) Coping Strategies

Table 1.

*Adaptations to the Metacognitive Profiling Template*

No	Metacognitive Interview	Adapted Metacognitive Interview
3	<p>What were you paying most attention to in that situation?  <i>What was most salient?</i>  <i>Were you focusing on your thoughts, feelings or the situation?</i>  <i>Were you self-conscious?</i>  <i>What were you most conscious of?</i>  <i>Are there any advantages to focusing your attention in that way?</i>  <i>What are they?</i></p>	<p><b>I would like you to think back to the last time you restricted your food intake.</b>            Okay?            Can you tell me what you were concentrating on most at that time?            Did you concentrate on your thoughts?  <i>How helpful did you find concentrating on your thoughts?</i>            Did you concentrate on your feelings?  <i>How helpful did you find concentrating on your feelings?</i>            Did you concentrate on what was happening around you?  <i>How helpful did you find concentrating on what was happening around you?</i>            How much did you monitor (or notice) your thoughts?</p>
4	<p>Were any memories activated?            What were they?  <i>Did you use your memory to try and work out what was happening and/or how to deal with the situation?</i>  <i>How did you use your memory?</i></p>	<p><b>Sometimes our memories of past events or experiences come to mind. I'm interested in your thoughts and memories about your eating difficulties.</b>            When you have unhelpful thoughts, do any memories come to mind?            What memories or thoughts came to mind?            What memories or thoughts did you have about your eating, weight, or shape?</p>
5	<p>Did you accept your thoughts and judgements as facts, based in reality?            Could you see your thoughts as distortions of what was really happening in the situation?            Can you keep your distance from these negative thoughts and feelings when they occur?</p>	<p><b>Sometimes we judge ourselves or view ourselves in a certain way. I would like you to think about the last time you had an unhelpful thought. Okay?</b>            At the time, did you tend to accept your thoughts as facts?            Looking back, can you tell me how well your thoughts matched what was really happening in that situation?</p>
6	<p>How did you form your judgements in that situation?  <i>What sort of evidence did you look for?</i>  <i>Where was your evidence coming from to support your thoughts?</i>  <i>Were you judgements influenced by your physical feelings?</i>  <i>Which feelings?</i>  <i>Were you influenced by mental feelings?</i>  <i>Were you influenced by your emotional feelings?</i>            If your feelings had been different, would you have judged the situation differently?            How confident were you in your own mental abilities?</p>	<p>What judgements did you make about yourself?  <i>What did you base your thoughts on?</i>  <i>What sort of evidence did you look for?</i>  <i>Can you tell me how judging yourself in that way made you feel?</i>            If your feelings had been different, how might you have judged the situation differently?            Has restricting your food intake ever affected how you judged yourself?</p>

## Appendix B: Interview Extracts

## Interview Extracts

The researcher aimed to be responsive, flexible, and curious to the participants' contributions, and use the interview schedule as a guide. Therefore, the aim of providing segments from the interviews is to offer the reader a sense of the interview format and style.

### Extract from Interview with Participant 2.

1. R. So I am going to ask you a number of questions. There are no right or wrong answers and feel free to ask me to ask the question in a different way, reword it. The questions I'm going to ask are about your eating difficulties, your thinking and your memories... It's important to say that sometimes our thoughts... can be in words, or they can be in pictures or images... at times we have unhelpful thoughts, you might have called them negative thoughts or bad thoughts and I will be asking a bit about this today. Is that okay?
2. P. Yes.
3. R. Okay. So it would be helpful to start by talking at your eating difficulties or anorexia...?
4. P....Well it started around my Year 10 GCSEs exams because we have like modular exams.
5. R. Okay.
6. P....When I suddenly kind of had a drive to better at everything and then I applied that to my school work and applied that to myself as well and I was like oh I must get healthier, must get fit and everything so I started on like a healthy diet kind of craze, and then I just kind of lost control of it.
7. R. Okay...
8. P. Yes, trying to make every part of my life better.
9. R. Perfectionist tendencies...?
10. P. Very much so yes! I don't like settling for something below perfect.
11. R.... Okay, so you mentioned... being in Year 10 would that have been July [year]?

12. P. Yes, that's the time.
13. R. ...Can you tell me what happened...?
14. P. Well... I think I kind of have a different perception of this to other people, because mum would say it kind of developed in like January [year], but I very much sensed it since kind of October, so I kind of would start restricting what I would eat at lunchtime... until I would realise that, oh you don't need lunch, oh you can survive fine without it, and then kind of the lead up to Christmas was really bad, and I spent the whole time trying to convince myself, oh it's okay we'll have a good Christmas, because you know Christmas is all about eating and then afterwards with the new year, like, diet crazes then I just went kind of downhill and it was, started to be like oh I've got dance rehearsal at school, oh I eat my tea on the way home so I don't need anything mum, so then it was more than one meal I'd miss and...
15. R. So were you eating that meal, or were you telling your mum..?
16. P. I was telling my mum that I was and I wasn't.
17. R. Okay.
18. P. So it went very downhill from there and then I had to go and have like blood tests and things. I found it very hard to understand like, I couldn't, I didn't feel physically ill.
19. R. Right.
20. P. So, I was, it was just annoying I was like I'm fine I'm not ill everyone... and then we had to go to hospital one day because my pulse was really low.
21. R. Oh okay.
22. P. It was like 42 or something.
23. R. Oh it sounds low...
24. P. I used to be like, when I was in Year 10 and 11 I used to do quite a lot of exercise so I would do, umm, we had like Zumba on the Wii so every morning I would get up at six o'clock in the morning then do, like 45 minutes of Zumba before like my breakfast, and then I would did dance GCSE at school.

25. R. Gosh.
26. P. So I had three lessons a week of that, I did dance twice a week after, well once a week after school, all day on a Saturday and PE, and then I would go for a run every Sunday.
27. R. So your exercise... was a lot...?
28. P. Yes.
29. R. ...Excessive.
30. P. And then in January mum started to get like, worried so I would have to go and see the school nurse and things, umm, and she rang, and I think she ring like CAMHS or something, and they were like you have go and check in her room and I'd like hidden all of like my lunches and things and that...
- ...
49. R. Okay... so ... you'd gone to the hospital you'd had loads of tests...
50. P....And that was when they like gave me a diagnosis.
51. R. Yes, they gave you the diagnosis, they got you to follow the meal plan and then you kind felt [that] if I follow it then I can get back to the diet I want to do?
52. P. Yes.
53. R. And also...
54. P. Very much so.
55. R. Yes. And then I can go on holiday?
56. P. Yes.
57. R....What happened after the holiday...?
58. P. Yes.
59. R. ...So tell me about that.
60. P. Well I still kind of struggled with it when we were there, like everyone would, oh wait, like we had this thing, and they'd umm, out of the team budget you could buy your meal but if you wanted a pudding you had to pay for it yourself, and so everyone would usually get pudding like every night because, it, we got pretty hungry. But I would like never buy my own pudding, I was like no, no I

don't need pudding, I don't need pudding. But then when I got it was, I was okay, umm, but then it was kind of when I started back at school, the 6<sup>th</sup> form and things, I was doing like crazy amounts of everything... I was so busy I didn't have time for lunch, and then suddenly I was like I don't need lunch, oh I can do this. And then I just started to, it was very much like out of control, so I was like, I didn't have control of my school work so then I was like well, you know, don't need lunch anymore.

61. R. How did you feel...?

62. P. I feel like I suddenly switched back to something, I was like I feel absolutely fine without it and like it's quite hard when, you have, a week when you haven't eaten lunch and you get good grade, I'm like oh maybe that helped my grade, like, maybe something else is preoccupying my body if I have the food.

63. R. Did you feel it made you feel powerful, because that's what?

64. P. Yes.

65. R. I might be hearing?

66. P. Yes, it felt like...

67. R. Yes, okay.

68. P. It made me feel like I had something up on everyone else, if I'd eaten less than them, then I was superior to them in a non-big headed way.

69. R. No, that makes sense... that's what I was hearing.

70. P. Yes.

...

76. R. Were there any other significant life events that you think may possibly [triggered the eating disorder]...?

77. P. I think... contributory factors is like out of me and my sister, my sister has always been, like, she's like really tiny one and so I was always classed as like the big-boned one and, not to say this was the stimulus of it...

78. R. No.

79. P. But... I remember specifically once dad saying to me, oh well you'll always be a bigger build because, you know, that's just the "Jones's" build whereas my sister isn't, hasn't got that... and I think that kind of made me think I don't want to do what everyone says I am, and says that I have to be.
80. R.... How powerful [is] that memory...?
81. P. I can remember specifically when it was, it was when we were at my nanny's house, I think it was probably, March [year], umm, I remember even where I was sitting [laughs].
82. R. Yes... if you could describe...that.
83. P. I was sitting on the sofa and my nanny just got one of these new walker things so he was sitting on that, and... we were talking [about when]... I was bridesmaid, me and my sister were bridesmaid for both of them and... there was us... the other [family member] who I have always likened to her, she's called [family member's name], and she's quite a big-build person.
84. R. Right.
85. P....We were always said to be twins basically... whereas my other [family member]... she's had anorexia too, she's had it for probably three years and she was inpatient in the summer... and we were looking at the photos and... discussing how unflattering one of the dresses...
86. R. So these are the bridesmaids' dresses...?
87. P. Yes the bridesmaids' dresses... and moaning about them and... I remember saying... how it was so embarrassing that I was like the third biggest out of the four bridesmaids... and then my dad saying, well you know you're just a big-boned person, you're never going to be tiny.
88. R.... It sounds like it was quite powerful and it's quite vivid...when's the first recollection of that... memory...?
89. P. Well kind of, I would remember it probably, I would probably remember it like a month afterwards. Yes I think I did, because I remember when I was cleaning out my room I found like a, one of my notebooks, like a bikini body diet plan.

90. R. Ah, okay.

91. P. In, that was about Easter where I started like counting calories.

**Summary:** In the interview schedule, the first section of the interview focussed on the onset of the disorder and the participants' relationship with AN, while the role of memory is considered towards the end. In contrast, the extract from this interview highlights that the researchers' questioning sequence changed as a result of the responses from the young person. Instead of asking the questions in the pre-determined order, the researcher opened a discussion on the impact and role of memory at the beginning of the interview.

### **Extract from Interview with Participant 3.**

403. R. Can worrying be helpful?

404. P. I think it can, because I think it kind of makes you think more about what you need to do, so with work or something, if I worry about, oh I've got this the next day or something, it makes me want to do it, and like with eating or something, I, if I get worried about it I kind of feel that, oh I, I should maybe talk to my parents, or kind of just say I'm getting worried about this, so no I think it's good because it makes you think more about what you need to do, so.

405. R.... Does it motivate you, is that?

406. P. Yes, definitely, because like if I've got an exam or something and I'm really worried about that, I just feel, oh I probably should do a bit more work or probably should talk to someone about it, so.

407. R....Is it a warning sign?

408. P. Yes, that obviously something going wrong, so if I'm really stressed and I start to worry about eating, I'm, I just talk to my parents and say, look I'm kind of worried about doing this, and they just keep closer eye on it or, yes definitely, definitely help.

409. R. And do you tend to be more of a worrier?

410. P. Yes, I'm such a worrier, I used to, I worry about tiny things like if I lose a jumper or something I'm like, oh it's my favourite jumper, I like have to find it, so like if work or something, I, if I don't finish my homework, I have to do it that night, otherwise I just can't sleep or something.

411. R. Is that because it keeps going through...

412. P. Yes.

413. R. Your mind?

414. P. So I think that's kind of made me worse, kind of with my food and stuff because I just worry all the time so it was just another thing to worry about.

415. R. So when was the last time you worried about food?

416. P. I think, oh, maybe my last like, school term because when my work gets more serious I get a lot more worried about food and I don't eat as much, my parents get worried, so it's kind of like a little cycle thing that [laughs], kind of happens during, around that exam period.
417. R. So, just so I've heard you right, so when stress is higher.
418. P. Yes.
419. R. Worry increases?
420. P. Yes.
421. R. Food intake can reduce?
422. P. Yes.
423. R. Which has a knock-on effect?
424. P. A knock-on effect on?
425. R. Family?
426. P. Yes, and then they'll tell [clinician's name], and [clinician's name] will be like, you need to eat more and then, it's kind of an ongoing cycles sometimes.
427. R. Okay, and by the end of it do you find it's more stressful...?
428. P. Yes... if my friends notice that I'm not eating much one day, they'll be like you need to eat more, and that kind of gets me annoyed and then, it's during exam time it's very annoying [laughs].
429. R. Can you tell me... what it is about what they say that... makes it annoying?
430. P. I think it's just like if... I'm just not very hungry or something and they'll ask, they'd be like you need to eat more, and I'd be like, you don't need to force me to eat, and I just don't think they, they don't really understand anorexia that much, because it's quite a hard thing to understand if you don't actually have it, but, like two of my friends, they, they really get it, because one friend actually visited me while I was in the [inpatient unit].
431. R. Ah.
432. R. Because she was like one of my really good family friends and they get it, they're like, oh there's no need for us to force you to eat because you probably

won't eat it, so some of them are good about it, but some of them just don't understand it and then they are just like, why don't you eat that, so it's kind of, it's quite hard for them to get.

433. R. So just to check you what I'm hearing...

434. P. Hmm.

435. R...It sounds that sometimes you experience your friends as controlling?

436. P. Yes, very controlling.

437. R. Which is then, makes you want to.

438. P. Yes.

439. R. Have it [food] less?

440. P. Yes, just be, yes, and you get very annoyed, it's so annoying when they do that.

...

445. R. Could you tell me what a typical day's food is for you like now?

446. P. I think, so normally, during, in breakfast I probably have like bagel or something and then a cereal bar.

447. R. Hmm.

448. P. And so, I don't normally eat in between breakfast and lunch because I always feel that's really early and then, but maybe at school I'd have like a biscuit or something, but nothing too big and then lunch, I'd either had some soup or some salad things, like mum normally makes a lot of salad and then like meat and stuff.

449. R. Okay.

450. P. Then at school and stuff I'd normally have something like that and then sometimes I have, after lunch, like a bit of chocolate or something but sometimes I don't if I've had a big lunch or something, and then normally during about this time I have like a bit of, a cup of tea, and then a biscuit or something like that, just like a normal little tea time, and then supper, mum normally makes like pasta or one of those home cooked meals that's really nice.

451. R. Okay.
452. P. And then, I sometimes have, I have chocolate and then some tea, and then maybe some, a bit of fruit, so it's not, I think it's quite a healthy thing and it's obviously, it's not too much, not too little and I obviously just maintain my weight with it mostly, so.
453. R.... Little and often?
454. P. Yes, little and often. So it's quite, and if I've lost a bit of weight during school time of something, then I'd, I'd have either some more chocolate or something like that, so I, I obviously can tell when I need to put on a bit more weight, so I definitely try to eat a bit more.
455. R. Do you weigh yourself often?
456. P. Well, mum, mum got me some scales, not for me to, but she says that oh we should probably weigh you, it's normally around the time I see [clinician's name], but because I don't see her as much, my mum likes to weigh my sometimes just to check how I'm doing, but I try, I don't weigh myself alone because I kind of feel that would bring back, that would make me, if I gained a bit a weight, that would make me not eat.
457. R. And what would it bring back...?
458. P. It would just... if I've gained a bit of weight, it will just kind of bring back thoughts like, oh you shouldn't be eating as much as you are, and so I think mum obviously notices that, so she says she doesn't like me to weigh myself when she's not around.
459. R. And the other thing I wanted to ask...
460. P. Yes.
461. R. It brings back thoughts, does it ever bring back memories?
462. P. Yes, kind of because I, I was always so used to, being like oh I'm so skinny I need to put on weight, but now it's a bit, it's quite a low weight for my height but it's, it's not like, oh I need to put on weight so it's, it's kind of sometimes quite

unhelpful because if I've suddenly gained a lot of weight I feel like, oh I probably should be eating a bit less, so.

...

471. R. Yes, okay, thank you. Can worrying be unhelpful?

472. P. Yes, I think definitely eating-wise it can because it, it makes me get much more conscious about what I'm eating and it kind of I don't know it makes me feel a lot less relaxed with my body and, because normally I, I sometimes have times when I'm really relaxed with food, like I don't have any thoughts, I'm like oh yes I'm going to do this, and then sometimes if I'm really stressed or something, worrying will just make me feel like, oh I just get a bit more self-conscious about what I'm eating.

**Summary:** In the interview schedule, questions on the advantages of worry are directly followed by those on the disadvantages of worry. As indicated, this section of the transcript starts with the question concerning the advantages of worry and ends with the question about the disadvantages of worry. On this interview there is approximately a 15 minute interval between question on positive beliefs about worry and those on negative beliefs about worry, as the discussion was led by the responses' of the participant and the researcher aimed to be flexible and curious in the interview.

#### **Extract from Interview with Participant 4.**

1. R. So I am going to ask you a number of questions. There are no right or wrong answers and feel free to ask me to ask the question in a different way or repeat the question. The questions I'm going to ask you, are about your eating difficulties, your thinking and your memories. It is important to say that sometimes our thoughts can be in words, and other times our thoughts can be in pictures. At times we can have unhelpful thoughts, and I will be asking you a bit about this today. Is that okay?
2. P. Yes.
3. R... Can you tell me... when your difficulties started...?
4. P.... About two years ago... just before the summer in [year] I think.
5. R. Okay. Can you tell me what was happening at the time?
6. P.... I was going out with my, umm, boyfriend at the time the current time and, umm, I, I always felt big and I, I was always embarrassed like, in front of him and I just, I was just looking through, I just keep looking through pictures of umm, girls, like slim girls and in like bikinis and summer clothes and stuff and I just, I just decided I wanted to actually be happy with my body for once and I, I just wanted to lose weight and that's when it all started and it got worse and worse from there really. At first I didn't intend for it to be severe.
7. R. Okay, I think you mentioned earlier about that you felt you always had those types of thoughts?
8. P. Yes.
9. R. Can you tell me a bit about that...?
10. P. I've always had thoughts like, I'm fat and I should lose weight and stuff, for ever-, for ever since I can remember like, even when I was really little I remember like crying like thinking I'm too fat and stuff and I used to look at all the girls and think they're so much skinnier than me, and I used to always think, oh wow, I eat so much, but I never, again I never really acted on it until about two years ago.

11. R. Okay, so some quite earlier memories of it?
12. P. Yes.
13. R... Do you remember when the first time you had that thought... I'm too fat?
14. P. Umm, I remember being like five or something and umm, I'd drawn a picture of myself, really like a big circle [laughs] with like a face on and I remember crying and I showed my mum, I'm like this is what I look like and umm, also around five, six, seven-ish, I, all my friends were umm, really skinny and stuff and I can remember someone calling me fat and that just stuck in my mind ever since.
15. R. Can you describe that scene to me, so if I was there what would I have seen and heard?
16. P. Umm, I think I remember being with my friends and umm, this boy come along who was like the same age as me and umm, I think umm, I can't remember what we were talking about but umm, then I just remember the boy saying but you're fat and they're not, and I was like, oh okay then, umm, and that was it.
17. R. How did you feel when he said that?
18. P. It was, I remember just feeling like, yes I know [laughs] and then I al-, I always felt really embarrassed, I remember feeling really embarrassed and just like, I wanted to curl up in a ball, but I also felt like I was born like it, like I couldn't do anything to change it, that I was going to be this way forever and that feeling just, it's, it's not nice.
19. R. No, sounds like quite a difficult time you had.
20. P. Hmm.
21. R.... After that happened did you think on that...?
22. P. Yes.
23. R. How often did you think about...?
24. P. Whenever I was with my friends and stuff from that age onwards, I always used to like look at them and then I'd look at myself and I'd be like, why are

they so much skinnier than me, how, why am I this size, like what have I done, I, and then I used to, my mum always used to say, you love your food don't you? And I used to be like, yes, and then as started getting older I used to start making the connection, thinking it's because I like my food a lot isn't it that I'm this big, but my mum always said to me, she's like you've never been, you've never been big, but I re-, I get, I've had early memories of people saying like, oh you're so chubby, oh like chubby and cute and stuff, that's not good.

25. R. And who was it that said you were chubby and cute?

26. P. Like family members and stuff, they didn't mean it in a spiteful way...

27. R. No, no.

28. P. But, like you say to like little kids, like ah, but yes, I take it the wrong way.

29. R..... What affect did that have?

30. P. It didn't have any bad effects, like I think I just kind of like I knew I loved my food and I have until I got ill, I was a very foodie person, umm, and I think I just agreed with her, but deep down I thought like, maybe I'm to blame then, for like thinking that I'm like bigger than everyone else because I like my food.

31. R. Okay, so... people have said [things], that all together...

32. P. Hmm.

33. R....How distressing do you find some of those memories?

34. P. I think I look back when I'm younger and I don't find them as distressing, but I, I think back two or three years ago and I remember people saying to me like, you're not fat you're just big-boned, and I just remember that and it really, it really distresses me because that's what you say to people that you don't really want to like admit to them that you think they're fat, so like I used to like try and believe them and think I'm big-boned, but now I look back I'm thinking, no they were just being nice, wow, I was very naive to think, just like, I don't know, just, like when I was in primary school and stuff, hmm, it's just, I think it is, it is distressing, like, not when I was younger to think of my size and what people

said to me when I was even, like younger, but normally like, 11 upwards that's, that's, umm, that distresses me a bit.

**Summary:** Similarly to the first interview with Amy, this interview extract is from the beginning of the interview which explores the onset of AN. The extract indicates that the sequencing of the researchers' questions was amended to be responsive to the young person, as questions of memory that are scheduled towards the end of the interview were asked at the start. The exploratory style of the questioning can be evidenced from part of the extract above, e.g., "can you describe that scene to me, so if I was there, what would I have seen and heard?"

## Appendix C: Ethics Letters

20 September 2013

Ms Katie Liveley  
Trainee Clinical Psychologist  
Cambridgeshire and Peterborough NHS Trust  
C/O Postgraduate Research Office, Room 2.30, Elizabeth Fry Building, Faculty of Health  
University of East Anglia  
Norwich  
NR4 7TJ

Dear Ms Liveley

Study title:	Exploring the metacognitive profile and role of memory in adolescents with anorexia nervosa
REC reference:	13/EE/0238
IRAS project ID:	122704

Thank you for your letter of 15 August 2013, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the REC Manager, Trish Wheat.

#### Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

#### Ethical review of research sites

##### NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

## Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

*Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.*

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

*Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.*

*For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.*

*Sponsors are not required to notify the Committee of approvals from host organisations*

**It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).**

## Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Evidence of Insurance or Indemnity	Zurich Municipal	22 May 2013
Investigator CV	Katie Liveley	16 May 2013
Letter from Sponsor	Zurich Municipal	08 July 2013
Other: CV - Gillian Todd		19 March 2013
Other: CV - Stan Coker		
Participant Consent Form: Participants' Assent Form	1	04 February 2013
Participant Consent Form: Parent	2	15 August 2013
Participant Consent Form: Young Person	1	15 August 2013
Participant Information Sheet: Young Person	2	15 August 2013
Participant Information Sheet: Parent	2	15 August 2013
Protocol	1	04 February 2013
Protocol	2	15 August 2013
Questionnaire: Validated Questionnaire - EAT-26		
REC application	122704/4748 51/1/865	10 July 2013
Response to Request for Further Information		15 August 2013

## Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

## After ethical review

### Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

### Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

13/EE/0238	Please quote this number on all correspondence
------------	--

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

With the Committee's best wishes for the success of this project.

Yours sincerely



pp: Dr Leslie Gelling  
Chair

Email: NRESCommittee.EastofEngland-CambridgeSouth@nhs.net

Enclosures: "After ethical review – guidance for researchers" [SL-AR2]

Copy to: Mrs Susan Steel  
Dr Bonnie Teague, Norfolk & Suffolk NHS Foundation Trust



## Health Research Authority

### NRES Committee East of England - Cambridge South

The Old Chapel  
Royal Standard Place  
Nottingham  
NG1 6FS

Tel: 0115 8839437 (Direct Line)

20 November 2013

Ms Katie Liveley  
Trainee Clinical Psychologist  
Cambridgeshire and Peterborough NHS Trust  
C/O Postgraduate Research Office, Room 2.30, Elizabeth Fry Building, Faculty of Health  
University of East Anglia  
Norwich NR4 7TJ

Dear Ms Liveley

**Study title:** Exploring the metacognitive profile and role of memory in adolescents with anorexia nervosa  
**REC reference:** 13/EE/0238  
**Amendment number:** Amendment 1, 11/10/2013  
**Amendment date:** 30 October 2013  
**IRAS project ID:** 122704

The above amendment was reviewed on 11 November 2013 by the Sub-Committee in correspondence.

#### Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

#### Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Participant Information Sheet: Parents Information Sheet	3	11 October 2013
Protocol	3	11 October 2013
Participant Information Sheet: Young Person's Consent Form (Clean & tracked versions)	4	14 November 2013
Covering Letter		15 October 2013
Participant Consent Form: Assent Form	2	11 October 2013
Participant Information Sheet: Young Persons Information Sheet	3	11 October 2013
Participant Consent Form: Parent's Consent Form (Clean & tracked versions)	4	14 November 2013
Notice of Substantial Amendment (non-CTIMPs)	Amendment 1, 11/10/2013	30 October 2013

### **Membership of the Committee**

The members of the Committee who took part in the review are listed on the attached sheet.

### **R&D approval**

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

### **Statement of compliance**

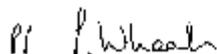
The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

**13/EE/0238:**

**Please quote this number on all correspondence**

Yours sincerely



**Dr Leslie Gelling**  
Chair

E-mail: [nrescommittee.eastofengland-cambridgesouth@nhs.net](mailto:nrescommittee.eastofengland-cambridgesouth@nhs.net)

*Enclosures: List of names and professions of members who took part in the review*

*Copy to: Dr Bonnie Teague, Norfolk & Suffolk NHS Foundation Trust*

*Mrs Susan Steel*



## Health Research Authority

### NRES Committee East of England - Cambridge South

The Old Chapel  
Royal Standard Place  
Nottingham  
NG1 6FS

Tel: 0115 8839437 (Direct Line)

04 April 2014

Ms Katie Liveley  
Trainee Clinical Psychologist  
Cambridgeshire and Peterborough NHS Trust  
C/O Postgraduate Research Office, Room 2.30  
Elizabeth Fry Building, Faculty of Health  
University of East Anglia  
Norwich  
NR4 7TJ

Dear Ms Liveley

**Study title:** Exploring the metacognitive profile and role of memory in adolescents with anorexia nervosa  
**REC reference:** 13/EE/0238  
**Amendment number:** 122704/579803/13/737/27819  
**Amendment date:** 14 March 2014  
**IRAS project ID:** 122704

The above amendment was reviewed on 26 March 2014 by the Sub-Committee in correspondence.

#### Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

#### Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Covering Letter		14 March 2014
Notice of Substantial Amendment (non-CTIMPs)	122704/579803/13/737/27819	
Protocol	4	13 March 2014

#### Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

### **R&D approval**

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

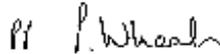
### **Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

<b>13/EE/0238:</b>	<b>Please quote this number on all correspondence</b>
--------------------	---

Yours sincerely



**Dr Leslie Gelling**  
**Chair**

E-mail: [nrescommittee.eastofengland-cambridgesouth@nhs.net](mailto:nrescommittee.eastofengland-cambridgesouth@nhs.net)

*Enclosures: List of names and professions of members who took part in the review*

*Copy to: Dr Bonnie Teague, Norfolk & Suffolk NHS Foundation Trust  
Mrs Susan Steel*



## Health Research Authority

### NRES Committee East of England - Cambridge South

The Old Chapel  
Royal Standard Place  
Nottingham  
NG1 6FS

Tel: 0115 8830437 (Direct Line)

13 May 2014

Ms Katie Liveley  
Trainee Clinical Psychologist  
Cambridgeshire and Peterborough NHS Trust  
C/O Postgraduate Research Office, Room 2.30  
Elizabeth Fry Building, Faculty of Health  
University of East Anglia  
Norwich  
NR4 7TJ

Dear Ms Liveley

**Study title:** Exploring the metacognitive profile and role of memory in adolescents with anorexia nervosa  
**REC reference:** 13/EE/0238  
**Amendment number:** Minor changes to PISs/Consent Forms  
**Amendment date:** 16 April 2014  
**IRAS project ID:** 122704

Thank you for your letter of 16 April 2014, notifying the Committee of the above amendment.

The Committee does not consider this to be a "substantial amendment" as defined in the Standard Operating Procedures for Research Ethics Committees. The amendment does not therefore require an ethical opinion from the Committee and may be implemented immediately, provided that it does not affect the approval for the research given by the R&D office for the relevant NHS care organisation.

#### Documents received

The documents received were as follows:

Document	Version	Date
Participant Information Sheet: Young Person's Information Sheet - Clean & tracked changes	4	16 April 2014
Participant Consent Form: Parent's Consent Form - clean & tracked changes	5	16 April 2014
Notification of a Minor Amendment	Minor changes to PISs/Consent Forms	16 April 2014
Covering Letter		16 April 2014

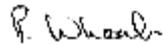
Participant Information Sheet: Parent's Information Sheet - Clean & tracked changes	4	16 April 2014
Participant Consent Form: Young Person's Consent Form - clean & tracked changes	5	16 April 2014

**Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

<b>13/EE/0238:</b>	<b>Please quote this number on all correspondence</b>
--------------------	---

Yours sincerely



**Ms Trish Wheat**  
**REC Manager**

E-mail: [nrescommittee.eastofengland-cambridgesouth@nhs.net](mailto:nrescommittee.eastofengland-cambridgesouth@nhs.net)

Copy to: *Dr Bonnie Teague, Norfolk & Suffolk NHS Foundation Trust*

*Mrs Susan Steel*

## Appendix D: Patient Documents

[NHS letterhead]  
**University of East Anglia**  
**Doctoral Programme in Clinical Psychology**  
**Young Person's Information Sheet**

**Part 1: Understanding thinking and memory in young people with  
anorexia**

We would like to introduce you to the primary researcher and the study. The primary researcher is Katie Liveley. Katie is in her final year of clinical psychology training at the University of East Anglia. She has an interest in eating disorders and will be carrying out this piece of research as part of her training course.

We would like to invite you to take part in our study which aims to understand thinking and memory in young people with anorexia. Before you decide we would like you to understand why the research is being done and what it would involve for you. So please consider this leaflet carefully. Talk to your family, friends, doctor or nurse if you want to.

***Why are we doing this research?***

Adults with anorexia tend to show a certain pattern in the way they think. This study aims to understand the way young people with anorexia think. Also, we are interested in hearing about your memories (about eating, weight and shape) to see how this fits with your thinking.

***Why have I been invited to take part?***

You have been invited to take part in this research as you have been gaining support from a service that is helping us with this study. We hope to involve ten young people in this research.

We will give you a copy of this information sheet and we can describe the study to you and answer any of your questions.

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

No, it is up to you. If you do not wish to take part, this will not affect either your current or future treatment, or contact with services. If you agree to take part in this research, we will ask you to sign a consent form. You are free to stop taking part at any time during the research without giving a reason. If you decide to stop, this will not affect the care you receive currently or in the future.

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

The study involves one interview where you will be asked questions about your eating difficulties, understanding of your thinking and your memories about eating, weight and shape. There is also one questionnaire about your eating difficulties.

Your visit may take more than a couple of hours. There will be breaks scheduled and you will be able to take breaks at any point. There is also the option to break the session up over several visits.

The interview and discussion about the findings will be audio-recorded as it is important that the information we talk about is correctly recorded.

Once you have agreed to take part in the study, we will arrange to meet with you and your parent/guardian to sign the consent form and do the interview and questionnaire.

***What will I have to do?***

We would need you to come to the clinic, where we will ask you questions about your eating difficulties, your thinking, and your memories. We will also ask you to complete a questionnaire about eating difficulties. Before you leave you will be asked if you would like to be contacted in the future to give your thoughts on the findings of the study. This optional part of the study may take up to 30 minutes and will be audio-recorded.

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

We cannot promise the study will help you but the information we get might help treat young people with anorexia in the future.

**If you are still interested, please go to Part 2 of the information sheet or contact the researcher for further information.**

***Contact details***

Thank you for reading so far. If you have any questions or are interested in taking part, please complete the details on the reply slip (on the last page) and send this to:

**Katie Liveley, Trainee Clinical Psychologist**

University of East Anglia: C/O Postgraduate Research Office, Room 2.30, Elizabeth Fry Building, Faculty of Health, University of East Anglia, Norwich, NR4 7TJ.

Alternatively, you can call [contact details] and ask to speak to Katie Liveley, Chief Investigator for this project.

## Young Person's Information Sheet

### **Part 2: Understanding thinking and memory in young people with anorexia**

#### ***Will anyone else know I'm doing this?***

We will only tell those who have a need or right to know that you are involved in this research.

#### ***Will my responses be kept confidential?***

Parts of your interview will be used for a university project and in any publications. Personal data such as your name, address and date of birth will not be used during the course of analysing the data or in any reports. You and your family may be able to identify you from your responses.

The researchers have a duty to protect you and ensure your safety. Therefore if you tell us that you are at risk of harm, describe instances of harming yourself (e.g., self-harming) or others harming you in any way (e.g., abuse) the researcher will raise this with the clinical care team, research supervisors and external agencies, where appropriate.

The researcher you will meet, Katie, and the team you have been working with will have access to the information you provide in the study. This information will be kept for 5 years, and then disposed of securely.

#### ***What will happen to the results of the research study?***

The results of the research will be used for a thesis project and may be published.

#### ***What will happen if I don't want to carry on with the study?***

If you do not wish to continue with the study you are free to withdraw from the study at any time, without giving a reason. This will not affect the care you receive.

#### ***What will happen if I become upset during the study?***

If you are upset during the interview, we will talk about whether you would like to continue, and the researcher will help you in gaining support from the eating disorder team, Child and Adolescent Mental Health Service (CAMHS), and/or support services:

#### **Local Eating Disorder Service/CAMHS Service:**

Phone: [Insert details]

#### **B-EAT (Eating Disorders charity):**

Phone: 0845 634 1414 (open Monday-Friday, 10.30am to 8.30pm, Saturdays 1.00pm - 4.30pm).

Email: [help@b-eat.co.uk](mailto:help@b-eat.co.uk)

Web: <http://www.b-eat.co.uk>

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

If you have a concern about any aspect of this study, you should call [contact details] and ask to speak to Katie Liveley, Chief Investigator or contact the research supervisor, Dr Gillian Todd on [contact details].

Katie and Gillian will do their best to answer your questions, however if you remain unhappy about the study, the normal NHS complaints system is available to you if you wish to complain.

Information and advice about taking part in research studies is available from the **Patient Advice and Liaison Service (PALS)** office.

Please contact PALS at [NHS Trust] by:

Phone: [Insert details]

Email: [Insert details].

Please do not include any confidential information about your mental health status or care in any email.

Post: [Insert details]

In the unlikely event that something does go wrong and you are harmed during the research and this is due to someone's negligence then you may have grounds for a legal action for compensation against [NHS Trust] or the University of East Anglia but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you (if appropriate).

### ***Who is organising the research?***

The organisers of this project are the University of East Anglia.

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

The study has been reviewed by a NHS Ethics Committee, NRES Committee East of England - Cambridge South and local NHS Trusts.

**Thank you.**

**Please complete this form for further information and send to Katie Liveley at the address below:**

-----><-----

I .....consent to be contacted in relation to the study:

**'Understanding thinking and memory in young people with anorexia'**

Signed.....Date.....

Full Name.....

Phone Number.....

Address.....

.....Postcode .....

Please return this form in the envelope provided to Katie Liveley, C/O Postgraduate Research Office, Room 2.30, Elizabeth Fry Building, Faculty of Health, University of East Anglia, Norwich, NR4 7TJ. Thank you.

[NHS letterhead]  
**University of East Anglia**  
**Doctoral Programme in Clinical Psychology**  
**Parent's Information Sheet**

**Part 1: Understanding thinking and memory in young people with anorexia**

We would like to introduce you to the primary researcher and the study. The primary researcher is Katie Liveley. Katie is in her final year of clinical psychology training at the University of East Anglia. She has an interest in eating disorders and will be carrying out this piece of research as part of her training course. This study is supervised by Dr Gillian Todd, senior lecturer and Dr Sian Coker, clinical psychologist.

We would like to invite your child to take part in our study which aims to understand and explore thinking and memory in young people with anorexia. Before you decide, we would like you to understand why the research is being done and what it would involve for you and your child. So please consider this leaflet carefully.

***Why are we doing this research?***

Adults with anorexia tend to show a certain pattern in the way they think. This study aims to understand the way young people with anorexia think. Also, we are interested in hearing about your child's memories (about eating, weight and shape) to see how this fits with their thinking. There is research on memory and eating disorders, however there have been no studies focusing on memory and thinking in young people with anorexia, which we are interested in.

***Why has my child been invited to take part?***

Your child has been invited to take part in this research as they have accessed support from a specialist service that is helping us with this study. We hope to involve ten young people in this research. We will give you a copy of this information sheet and we can describe the study to you and answer any of your questions.

***Does my child have to take part?***

No, it is up to you and your child. If you and your child do not wish to take part, this will not affect either current or future treatment, or contact with services. If you and your child agree to your child taking part in this research, we will ask you both to come to meet the researcher, and for you and/or your child to consent to take part in the study. Your child is free to withdraw from the study at any time, without giving a reason or any negative affect on their current or future treatment.

### ***What will happen to my child if they take part?***

The study involves an interview and a questionnaire. The interview is split into two parts, part one concerns your child's eating difficulties, while part two looks at your child's understanding of their thinking and considers their memories about eating, weight and shape. There is also one questionnaire for your child to complete about their eating difficulties.

Your child's visit may take more than a couple of hours. There will be breaks scheduled and you will be able to take breaks at any point. There is also the option to break the session up over several visits.

The interview and any discussion about the findings will be audio-recorded as it is important that the information from the interview and your child's experiences are accurately represented.

Once you and your child have agreed to take part in the study, we will arrange a time to meet with you both. The visit will involve consenting to the study, an interview with your child and completing a questionnaire.

### ***What will we have to do?***

We would need your child to attend an interview, where we ask questions relating to their eating difficulties, thinking and memory, and we will also ask your child to complete a questionnaire about their eating difficulties. Before your child leaves they will be asked if they would like to be contacted in the future to give their thoughts on the findings of the study. If they wish to do so, we will discuss this with you. This optional part of the study may take up to 30 minutes and will be audio-recorded.

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

We cannot promise the study will help your child, but the information we gain might help treat young people with anorexia in the future.

**If you are still interested, please go to Part 2 of the information sheet or contact the researcher for further information.**

### ***Contact details***

Thank you for reading so far. If you have any questions or are interested in taking part, please complete the details on the reply slip (on the last page) and send this to:

#### **Katie Liveley, Trainee Clinical Psychologist**

University of East Anglia: C/O Postgraduate Research Office, Room 2.30, Elizabeth Fry Building, Faculty of Health, University of East Anglia, Norwich, NR4 7TJ.

Alternatively, you can call [contact details] and ask to speak to Katie Liveley, Chief Investigator for this project.

## **Parent's Information Sheet**

### **Part 2: Understanding thinking and memory in young people with anorexia**

#### ***Will anyone else know that your child is doing this?***

We will only tell those who have a need or right to know that your child is involved in this research.

#### ***Will my child's responses be kept confidential?***

Extracts from the interview with your child will be used for educational purposes, for a doctoral thesis project and in any related publications. Personal data such as your child's name, address and date of birth will not be used during the course of analysing the data or in any reports. As part of their family, you may be able to identify your child from their responses.

We have a duty of care to safeguard your child. Therefore if your child discloses harm (or risk of harm) to themselves or others, the researcher will raise this with the clinical care team, research supervisors and external agencies, where appropriate.

The chief investigator and clinical care team will have access to data which identifies your child from the study, this data will be held securely and retained for a 5 year period, after this time it will be disposed of securely in line with NHS procedures.

#### ***What will happen to the results of the research study?***

The results of the research will be used for a doctoral thesis project and may be published in the future.

#### ***What will happen if my child doesn't want to carry on with the study?***

If your child does not wish to continue with the study, they are free to withdraw from the research at any time, without giving a reason. There will be no impact on current or future treatment or contact with services.

#### ***What will happen if my child becomes upset during the study?***

If your child becomes upset during the interview, we will discuss whether they are able to continue and the researcher will help your child to access support from the eating disorder team, Child and Adolescent Mental Health Service (CAMHS) and/or support services:

##### **Local Eating Disorder Service/CAMHS Service:**

Phone: [Insert details]

##### **B-EAT (Eating Disorders charity):**

Phone: 0845 634 1414 (open Monday-Friday, 10.30am to 8.30pm, Saturdays 1.00pm - 4.30pm).

Email: [help@b-eat.co.uk](mailto:help@b-eat.co.uk)

Web: <http://www.b-eat.co.uk>

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

If you have a concern about any aspect of this study, you should call [contact details] and ask to speak to Katie Liveley, Chief Investigator or contact the research supervisor, Dr Gillian Todd on [contact details].

Katie and Gillian will do their best to answer your questions, however if you remain unhappy about the study, the normal NHS complaints mechanism is available to you if you wish to complain about any aspect of the study.

Independent information and advice about taking part in research studies is available from the **Patient Advice and Liaison Service** (PALS) office.

Please contact PALS at [NHS Trust] by:

Phone: [Insert details]

Email: [Insert details]

Please do not include any confidential information about your mental health status or care in any email.

Post: [Insert details]

In the unlikely event that something does go wrong and you are harmed during the research and this is due to someone's negligence then you may have grounds for a legal action for compensation against [NHS Trust] or the University of East Anglia but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you (if appropriate).

### ***Who is organising the research?***

The organisers of this project are the University of East Anglia.

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

The study has been reviewed by a NHS Ethics Committee, NRES Committee East of England - Cambridge South and local NHS Trusts.

**Thank you.**

**Please complete this form for further information and send to Katie Liveley at the address below:**

-----><-----

I .....consent to be contacted in relation to the study:

**‘Understanding thinking and memory in young people with anorexia’**

Signed.....Date.....

Full Name.....

Phone Number.....

Address.....

.....Postcode.....

Please return this form in the envelope provided to Katie Liveley, C/O Postgraduate Research Office, Room 2.30, Elizabeth Fry Building, Faculty of Health, University of East Anglia, Norwich, NR4 7TJ. Thank you.

[NHS Letterhead]  
**PARTICIPANTS' ASSENT FORM**

Title of Project: Understanding thinking and memory in young people with  
anorexia

**Young Person's Name**.....

**Researchers:** Katie Liveley, Trainee Clinical Psychologist, Gillian Todd, and  
Sian Coker, Research Supervisors, University of East Anglia (UEA)

**Please  
initial the  
boxes**

Has somebody else explained this project to you?

Do you understand what this project is about?

Have you asked all the questions you want?

Have you had your questions answered in a way you understand?

Do you understand it's okay to stop taking part at any time?

Are you happy to take part?

If you don't want to take part, don't sign your name!

If you do want to take part, you can write your name below.

Participant:

Signature..... Print Name.....

Date.....

Researcher:

Signature ..... Print Name.....

Date.....

Thank you for your help.

**YOUNG PERSON'S CONSENT FORM**

Title of Project: Understanding thinking and memory in young people with anorexia

**Young Person's Name** .....

**Researchers:** Katie Liveley, Trainee Clinical Psychologist, Gillian Todd, and Sian Coker, Research Supervisors, University of East Anglia (UEA)

**Please  
initial the  
boxes**

1. I have read and understand the Information Sheet dated 16<sup>th</sup> April 2014, (Version 4) for the above study. I agree that I have had my questions answered.

2. I understand that I have the choice to participate in this research and that I can discontinue the study at any point without my medical care or legal rights being affected.

3. I have been offered the opportunity to discuss the findings of the research with the researcher, once all data have been analysed.

4. I agree that the information from my clinical notes, interview and questionnaire can be used by the researchers and others that are helping to analyse the data.

5. I understand that the interview will be audio-recorded. I agree that quotes from the interview will be included in the write-up of the thesis project and in related publications.

6. I agree that the NHS or people monitoring the way the research is carried out may review the information collected during the study and/or my patient notes.

7. I consent to take part in the above study.

Young Person:

Signature..... Print Name.....

Date.....

Researcher:

Signature..... Print Name.....

Date.....

Thank you for your help.

**PARENT'S CONSENT FORM**

**Title of Project: Understanding thinking and memory in young people with anorexia**

**Young Person's Name** .....

**Parent's Name** .....

**Researchers:** Katie Liveley, Trainee Clinical Psychologist, Gillian Todd, and Sian Coker, Research Supervisors, University of East Anglia (UEA)

**Please  
initial the  
boxes**

1. I have read and understand the Information Sheet dated 16<sup>th</sup> April 2014, (Version 4) for the above study. I have had my questions answered satisfactorily.

2. I understand that my child has the choice to participate in this research and withdraw from the study at any time without my child's medical care or legal rights being affected.

3. I have been offered the opportunity to discuss the findings of the research with the researcher, once all data have been analysed.

4. I agree that the information from the clinical notes, interview and questionnaire can be used by the researchers and others that are helping to analyse the data.

5. I understand that the interview will be audio-recorded. I agree that transcripts from the interview will be included in the write-up of the thesis project and in related publications.

6. I agree that people from regulatory authorities or the NHS may review the information collected during the study and/or my child's patient notes.

7. I consent for my child to take part in the above study.

Parent:

Signature..... Print Name.....

Date.....

Researcher:

Signature ..... Print Name.....

Date.....

Thank you for your help.

**Appendix E: The Researcher's Journey. The Process of Conducting the  
Research**

## **The Researcher's Journey: The Process of Conducting the Research**

This part of the Appendix indicates the journey of the researcher and includes extracts from the reflexive journal on their researchers' thought processes, decisions and the personal impact of the research.

### **Prior to Data Collection**

This section offers the researcher's reflections on the study, prior to data collection. The researcher's metacognitive style and relationships with cognitions were considered. Supervision was accessed to discuss data analysis methods. Finally, it appeared to be beneficial to amend the study to be able to audio-record the participants' responses to the findings to use as evidence of the trustworthiness of the findings.

*I have been considering the way I would answer the questions from the metacognitive interview. I reflected on my own metacognitive style and considered the impact of working as a trainee clinical psychologist on this, as the role requires a level of self-reflection on internal processes and delivering interventions that serve to change the responses of others to negative thoughts (e.g. re-evaluating thoughts or mindfulness practice).*

---

*There have been discussions with several members of staff at UEA about the method of data analysis. This included supervisors and accessing support from staff with experience of using TA. After reviewing the evidence for the approaches and considering the nature of the research question, it was agreed that TA was appropriate for this study.*

---

*While I was writing the method section, it occurred to me that it would be useful to audio-record the responses of the participant's to the findings in the participant validation interview, as this can be included as evidence for the validity of the findings.*

*I also researched whether there is an updated version of the SCID to parallel the current version of the DSM (i.e., DSM-IV-TR). At this stage the SCID is being updated and will not be available prior to the start of the research.*

### **During Data Collection**

This section gives some of my thoughts about working with this client group, comparing this to my experience of working with individuals with GAD, and the decisions made during the research process.

*This research has led me to reflect on my experiences of working with individuals with GAD. As a trainee clinical psychologist, I worked with a couple of clients on clinical placement that presented with GAD. This has me wondering whether the metacognitive beliefs about worry held by GAD patients may reflect those of individuals with AN. As a result I reviewed the metacognitive model of GAD.*

---

*After interviewing the first two participants, I have been considering the addition of further questions to explore whether individuals share their thoughts with others or punish themselves mentally (as indicated by participant 1).*

---

*Participant three indicated the importance and value of worry and that no longer being able to worry would be experienced as a loss. This response has led me to consider adding a question such as “what would happen if you were unable to worry?” as this would be helpful in exploring metacognitive beliefs about worry and could open a discussion on the impact or meaning of being unable to worry.*

---

*At the end of May 2014, I agreed with my supervisor to finish recruitment at nine participants. While we had initially aimed for a sample of 10 participants, I had a period of sickness during data collection, there have been challenges gaining participants, and the thesis deadline is approaching. My supervisor and I agreed that it was important to start analysing the data and work towards submission of my thesis.*

## **Data Analysis, Psychologist’s Feedback, Participant Validation and Presenting the Findings**

This section describes the six-stage TA process as described by Braun and Clarke (2006) and offers the researchers’ reflections, images from the researchers’ photo diary and the participants’ feedback on the findings. Each section starts with a reminder of the key aspects of that phase in the analytic process.

### **Stage 1. Becoming familiar with the data.**

- Transcribing
- Reading the data
- Recording initial thoughts and ideas

*It was suggested that I consider using a transcription service. However, it was important to me to transcribe all the data myself to thoroughly immerse myself in the data.*

---

*The options for TA include coding using data-driven or theory-driven approaches or both. My thoughts are that it would be wise to do both, as coding in this manner means that I will minimise the chance of overlooking important aspects of the data while ensuring I answer the research questions. In preparation for the analysis, I have re-read the papers and books on coding and TA. I also reviewed metacognitive theory and models.*

---

*After reading the transcripts a few times, my initial thoughts on patterns in the data concern (1) the impact and response to thoughts (2) the content, impact and use of memories (3) the use of coping strategies and (4) the relationships with family and others. This is preliminary as I am yet start the process of coding.*

## **Stage 2. Producing an initial coding system.**

- Systematically coding pertinent parts of the data
- Reviewing the entire dataset

*As there are many codes produced at this stage, I decided to refer back to books to ensure that I was analysing the data correctly, paying particularly attention to examples of coding. This process was helpful as I feel comfortable to resume coding, in the same way.*

**A coding example.**

Codes

91. R. What thoughts do you have about anorexia...?
92. P. I used to think that anorexia was my best friend, AN as a friend  
that everyone else was just lying to me and she  
was the only person that I could trust, and she was Trust  
like a part of me, and I don't know why I call her a AN as part of me  
she, but she's, it was, I, I could only really believe  
it, I never, but I've never fully accepted that I've had Non-acceptance of  
it, I've never bel-, I've never actually think, you I've diagnosis  
got anorexia or have anorexia, umm, but now I loo-,  
I think, it's stupid and it's illogical and it, it's just like, Rejection of AN  
if I listen to it, it's going to kill me, like that's the Consequences of AN  
bottom line, and I'm not, I'm going to try my hardest  
not to listen to it and I don't want it to get into my Recovery  
life any more, I don't want it to take away even,  
even more that what it already has done.
93. R. So, you've picked on it as well that you were  
saying she... is it because it's almost like a female  
voice that you hear...?
94. P. I think, yes, like I th-, I think, I think I see AN as part of me  
anorexia as almost another version of myself, like,  
when, because, obviously I've been drilled with the  
thought that like, anorexia is all these thoughts and  
it's an illness and stuff but I've always thought it as  
me, and, I haven't, I used to think of myself with like  
two, maybe two brains almost, like, my, the brain Internal battle [two brains]  
which was anorexia, and then me, and then it felt

as if I slowly just started to lose my brain and I just had anorexia's brain, and I always just used to get those thoughts and it was like, myself criticising myself, as in, so when I'd say, oh I'm so, you're so fat, you should be ashamed of yourself, that was me saying it to me, but even though it was me saying it to me, I always, it also felt like other people were saying it to me, anorexia wasn't just me, it was also a combination of what I thought other people thought and this like thing in my head, I, it's hard to explain.

Anorexic voice

Shame

Criticism [from the self/AN and perceived from others]

95. R. You mentioned it felt like initially,,, two brains.

96. P. Hmm.

97. R. What were the differences between the two?

98. P. Well, my brain, my first brain was, just me, the one that liked dancing, drawing, bikes and stuff and then the other brain, was the one that hated me, that wanted me to lose weight, and one that, it was the bully, and that was just constantly like behind me, like, latched onto me, just like constantly feeding me, feeding me all these thoughts.

Internal battle [two brains]

Anorexic voice

### ***The experience of coding.***

*After coding the fourth transcript I started to draft a framework in my mind about how all the pieces of information fit together. I found the exercise helpful in that I feel I am progressing. However, I decided to suspend my thoughts on the framework and continue to focus on coding for the time being.*

---

*On my third day of coding, mentions of metacognitive beliefs about eating have become more apparent in the last couple of transcripts. I decided to review the research on metacognitive beliefs related to eating disorders and found a chapter by Myra Cooper in 'Eating and It's Disorders' particularly helpful for this.*

*There appears to be in a cycle of coding, referring to the evidence and resuming coding.*

---

*After coding all the transcripts (which includes a process of re-coding) I decided that my next stage will be to manually organise and collate the codes into piles. In order to demonstrate the process I think it will be helpful to take photographs at various stages.*

### **Stage 3. Generating the themes.**

- Organising codes into themes
- Ensuring data relevant to each theme is collated

Figure 1. Beginning to organise the codes.



*I read one of the criticisms of the coding process is that coders tend to select relevant extracts that by themselves are difficult to interpret. Therefore I have left the text surrounding an extract at times where otherwise the context would be lost.*

Figure 2. Organising all the extracts by code.

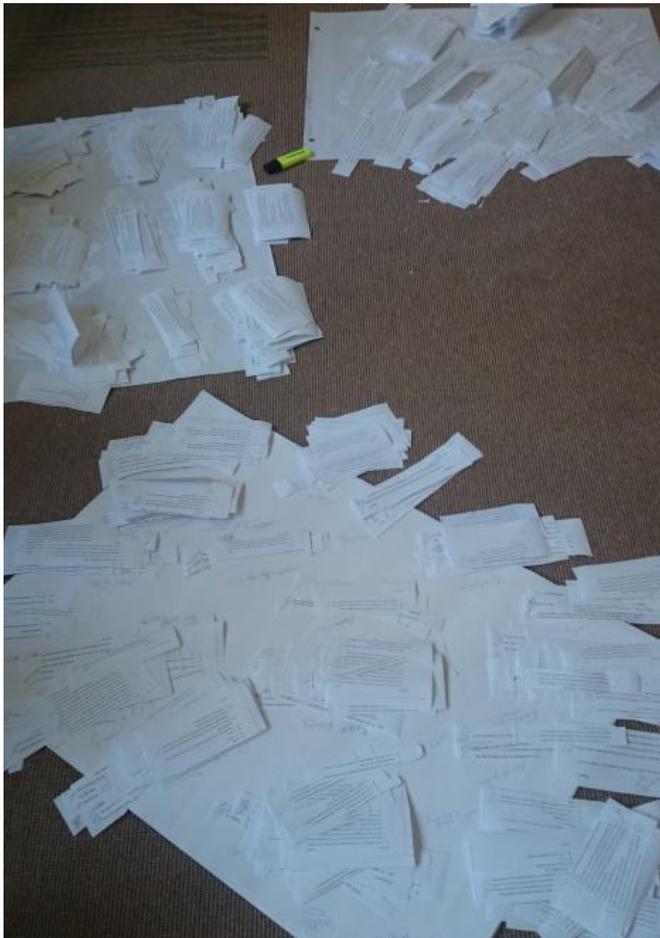
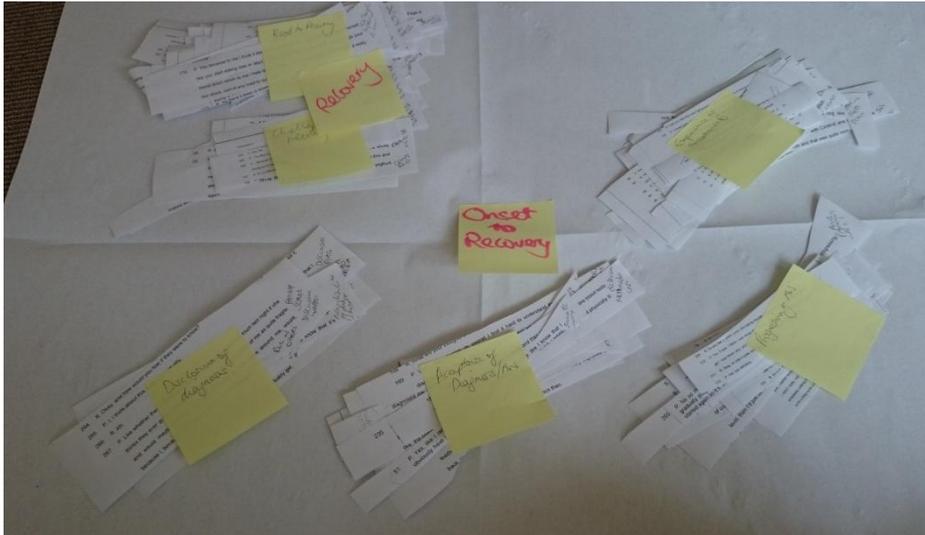


Figure 3. Organising the codes into themes.



At this stage I have six themes (as indicated in Figure 4), named Early Experiences and Memory (e.g., this includes discussions on their early childhood experiences and systemic factors), Meta-beliefs (e.g. beliefs about thoughts), Relationships (e.g., with the self and anorexia), Executive Function [later named as Cognition] (e.g., focus of attention), Ways of Responding [later named as Coping Strategies] (e.g., cognitive and behavioural) and Onset to Recovery [later named Road to Recovery] (e.g., recovery and interventions).

Figure 4. At this stage the data is organised into six initial themes.



#### Stage 4. Reviewing the themes.

- Ensuring themes relate to extracts from the data and the dataset as a whole
- Developing a thematic map

*I have been reflecting on my use of TA in this study, particularly as I had initially considered using template analysis. My thoughts at this stage having completed the analysis are that I am pleased I selected TA. I feel that if I had opted for template analysis I may have lost some of the richness of the data and have felt constrained during the analysis.*

---

*I have referred to the papers on TA again to check the quality of a theme. This has led me to reflect on themes and I feel that the themes need further refinement. I feel that Meta-beliefs theme needs to be included in the Relationships theme (e.g., as an individual has a relationship with their own thoughts).*

*Since making this change I have re-read all of the transcripts and each transcript refers to all of the themes. I have started to map the way the themes relate to one another.*

---

*The Road to Recovery theme reflected the positive and negative experiences during the process of recovery and consisted of two subthemes, 'Challenges in Recovery' and 'Acceptance and Determination'. The narrative in this theme concerned acceptance, treatment, and loss. However, this theme was ultimately discarded on the basis that it did not answer the research questions. The four themes that were the focussed on during this study were: Relationships with the Anorexia Nervosa, Cognition, Coping Strategies, and Early Experiences and Memory.*

### **Stage 5. Labelled and defining themes.**

- Name and define the themes
- Consider the narrative of the data

*After reviewing the subtheme called *The Emergence of Weight Concerns*, I started thinking about the underlying story within this subtheme of overcoming or changing the narrative about being the “podgy” or “big-boned” person in the system.*

### ***Psychologist’s feedback.***

The psychologist reviewed six coded transcripts and was agreeable with the coding and the themes derived from the data. The psychologist also evaluated the themes for internal consistency and provided positive feedback and comments which provided an opportunity for reflexivity. Examples of extracts and comments from the psychologist are presented in the boxes on the next few pages.

## **Psychologist's Feedback: Theme 1. Relationships in Anorexia Nervosa**

*All relationships are judged through the anorexic thought process [i.e., the anorexic lens]. Separation and alienation become the norm.*

### **1. Relationships with the Self and Anorexia**

*Anorexia nervosa purports to replace or provide what is missing: control, acceptance, safety. However it in itself is the opposite of those things. It is perpetuated by the promise it provides: perfection, which is eternally out of reach.*

#### **Relationships with the Self**

- *Dissonance and denial – report being happy with their body but this does not appear to be the case*
- *Self-hatred comes through strongly here*
- *Self-punishment is evident*

#### **Relationships with Anorexia Nervosa**

- *Anorexia nervosa lies, deceives, controls, creates the illusion of superiority*

#### **Internal battle**

- *Anorexia nervosa takes on the persona of the other self, placing itself within the spaces created by self-loathing and self-hatred. It becomes a toxic surrogate that takes the place of self-acceptance. As you “feed” the anorexic self it becomes fatter, starving and emaciating the old self into nothingness, invisibility.*

### **2. Relationships with Negative Thoughts and Worry**

- *Participants don't feel in control of their own thoughts or worries, in that they feel they always have to adhere to the will of the anorexic thoughts to keep the worries at bay*
- *Thoughts and worry generate doubt in self/recovery*
- *Improvement is to instead learn to not trust the anorexic thoughts, but to instead trust your “own” thoughts.*

### **3. Relationships with Others**

- *Control, criticality and judgement of others*
- *Feeling inferior or different to others*

*The psychodynamic perspective of feeding AN and starving the self is an interesting interpretation. Indeed this reflects the strengthening and weakening of the AN self and the old self respectively.*

**Psychologist's Feedback: Theme 2. Cognition**

*Lack of concentration and obsession with food contributes to isolation*

**1. Focus of Attention**

- *Rumination causes isolation thereby increasing focus on anorexia*
- *Identity of being the "thin" one, identity through feedback from others*

**2. Memory, Concentration and Confidence**

- *Although participants see the detrimental effects of their diet, especially around concentration and exams, they continue to restrict despite academic performance being important to them*
- *Obsessive rumination on food intake*

*After looking at the extracts that make up each subtheme following the feedback, I feel rumination should be acknowledged in the results. The other aspect of this theme is the consequences of attention, that of social isolation, that again would be helpful to discuss in the results.*

**Psychologist's Feedback: Theme 3. Coping Strategies**

- *Helpful and unhelpful coping strategies described*
- *Avoidance and social isolation evident*

*These points were consistent with my view of the Coping Strategies theme.*

## **Psychologist's Feedback: Theme 4. Early Experiences and Memory**

*Thoughts, memories and identity are powerful drivers in behaviour*

1. The Emergence of Weight Concerns
  - *Comparisons with others are apparent throughout*
  - *An enforced identity [e.g., the "big-boned one"]*
2. Systemic Factors
  - *A number of examples where there is attention to weight in the system*
  - *Defending the family system from potential criticism or blame*
3. Stressors
  - *Pressure to perform or achieve is evident in their accounts*
4. The Role of Memory
  - *The pre-morbid state [or pre-anorexic weight] was considered the "ill" state and the anorexic state as "healthy"*
  - *Enforced identity shows up strongly*
  - *Mechanisms of bringing back memories is either used to sustain anorexia nervosa or maintain healthy gain*

*The idea of the enforced identity was helpful to consider in this theme, and very relevant to the narrative of the adolescents. The sense of defending the family was helpful for the psychologist to label, it also reflected my experience somewhat in the interview, the sense that they wanted to understandably protect and defend their family system.*

### ***Testimonial validity.***

In this section, feedback from the participants and researcher's response to this is presented.

#### *Participants' feedback on the findings:*

*It's good, I mean I guess it helps to know that like just everything that I was going through that I was so similar to others, obviously like you kind of just think that you're being one that thinks that sort of thing. Amy, 17, 12*

*The thing about... going to defy what people kind of thought of you as... you don't just want to be like a big-boned one... I thought yes I thought that was applicable. Beth, 27, 7*

*I think it made me think about... behaviours that you'd have previously that may link in... about certain time periods... starting exams.... that was applicable and it made me consider overall... different factors that contributed towards it and... [it's] not a short-term thing but... accumulating over a long time. Beth, 28, 25-27*

*I think that I just can... feel proud that I've gone through it and everything and I think that it's been like a really long journey and I think the findings definitely show how hard it is for someone that has anorexia and how quite a lot of people don't understand how much you go through, but no I definitely think the findings were really....they've definitely shown that I've come a long way and everything so, I thought they really helped me.... yes, no you've done a really good job, really, really good, completely.... I think you've done a really good job with*

*getting all of the aspects of anorexia and everything, but no I thought they were really good. Cara, 32, 18-24*

*I think the relationship with worries and all that, I think that was the most important, I thought that was really good because... you can think of all the worry about how you look, how you feel, and I think that's kind of one the main triggers from it so, I thought that was good. Cara, 32, 12*

*I found it really interesting actually and... it's sort of maybe what I predicted.... obviously like what you've said... answers a lot of questions which I get sometimes... so it's good knowing that like you're actually... asking and answering like important questions.... sometimes when I feel like I want to restrict and then I feel, oh no I want to restrict, then why do I want to restrict, then you've I think explained that, there's always a reason behind it and it's always the same similar reasons and it adds a sort of bias onto your life. Dana, 24, 2-6*

*When you were giving evidence, like the early childhood, I think it was in the first one [Early Experiences and Memory theme].... it just like described my childhood like exactly and I think, yes just the typical... childhood where you get called fat and like you have bad experiences of what people have said or done. Dana, 24, 8-10*

*Yes, definitely, I think that you've like captured a lot of what I said in there. Fiona, 14, 4*

*I suppose I've learned that a lot of different people have different experiences but they can all relate, like they're all very similar in the way*

*people think and that... I do find that I can like relate more to myself about how I worry and that. Isabelle, 7, 14*

*The researcher's perspective:*

*After the first few feedback interviews, hearing the positive response from the participants, I feel really pleased that they were agreeable with the findings and that they felt as though the findings captured their experience.*

---

*After completing the feedback interviews, the response from the participants and their families was positive, where participants indicated that they felt understood and that the findings were as they predicted (or possibly self-evident).*

*I asked a couple of participants specifically about my interpretation of the 'overcoming the narrative' of being a "podgy" or "big-boned" person, where participants confirmed this was their experience.*

*A number of participants seemed to reflect on their experience of worry and the effect this has on them.*

*It was great that the results appeared to lead to greater insight, self-compassion and feelings of pride. I was really touched and felt emotional by one of the comments from Cara [above: Cara, 32, 18-24] during the participant validation interview. I wanted to do 'justice' to the participants by giving them a voice, and this meant a great deal to hear that she felt as though I had captured the difficult journey that is AN and*

*that her response to the findings was pride. I was delighted to hear that she felt that way about the findings.*

**Stage 6. Completing the research report.**

- Ensuring the final report contains extracts from the data
- Linking the analysis of the data to the original study question and prior research

*I reviewed a number of theses which used TA to see the way the results were presented. Some studies presented the research question and then the relevant theme, while others presented the themes first followed by a brief summary at the end relating the findings back to the research questions. I've decided to remind the reader of the research question and provide the findings pertinent to each question.*

---

*I am conscious of presenting the results and discussion in a way that is sensitive to the participants' experiences and ensuring the richness of the data is maintained.*

## Appendix F: Descriptive Statistics

Table 2.

*Descriptive Statistics Concerning Participant Factors and the EAT-26*

<b>Factor</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Age	16.0	0.7
BMI	17.8	1.1
Duration of the Illness (months)	25.8	13.9
Treatment Duration (months)	19.3	14.0
EAT-26 Factor 1	21.5	14.5
EAT-26 Factor 2	7.3	5.9
EAT-26 Factor 3	10.2	6.3
EAT-26 Total Score	36.4	26.4

*Note.* For the EAT-26, factor 1 is 'dieting', factor 2 is 'bulimia and food preoccupation', factor 3 is 'oral control'.

## Appendix G: Further Evidence of the Themes

## Further Evidence of the Themes

### Relationships in Anorexia Nervosa

#### 1. Relationships with the Self and Anorexia Nervosa.

##### a) Relationships with the Self.

*I guess obviously I'd be in a lower mood and then you're much more, the way you think about yourself is obviously, you don't have any confidence and self-esteem really... you almost hate being yourself. Amy, 16, 417*

*Me and dad went out for a meal on Saturday and... we ordered... sorbet... and I just couldn't manage it for pudding and then when I got home I ended up... kind of talking to myself and being like, why did you just go and ruin everything! Beth, 17, 567*

*I do remember in school... when the restricting started to get a bit more severe, I remember just starving through lunch times and it was painful, it was so painful... I just remember having such a self-hatred that I couldn't allow myself to eat. Dana, 18, 381*

*I used to think... this has got so many calories in it because that's what it says on the wrapper... but then... I'd change what I was thinking and think, well actually no, it's going to have way more in because I think, because I say so... because I say so it's going to have more calories in it, even though obviously it's not, but I make myself believe that it's going to have more calories in it. Dana, 15, 278*

*That I was fat, disgusting, just failed. Emily, 10, 388*

*It's... a form of punishing like myself, making myself feel bad for, for doing whatever I've done. Fiona, 11, 354*

*If I did eat too much then I'd either like make myself sick or like punish myself in some way and it's not something I want to do so I'd rather, not have to do that. Gemma, 1, 16*

*If I'm really unhappy or angry I can self-harm sometimes. Helen, 3, 74*

*Just being a bad person. Isabelle, 6, 202*

**b) Relationships with Anorexia Nervosa.**

*One thing that is always really bugged me is that I have always wanted to be a mum, like I have always wanted to have kids.... it would be so hard to accept that, if I couldn't have kids from a result of anorexia. Amy, 3, 60-62*

*It makes me feel quite like I'm in control of things, like I'm kind of on top of your game. Beth, 15, 474*

*It stops kind of spontaneity... if we're out late and we're like, oh shall we grab something to eat out, that can't happen... it's very... monotonous, I have to have the same thing, must be the same time, like I have to do the same amount of sit-ups every day, that kind of thing. It's very routine. Beth, 7, 215*

*I think disadvantages were I was very embarrassed about everything and I missed out on a lot of school... I think it was quite a hard situation*

*being out of school, but also I think it makes me very stressed. Cara, 5, 136*

*I still get so angry at it, I just think what did I ever see in you? I think that I was stupid to ever believe any of it and it's just a load of crap... I don't want anything to do with it, but then sometimes I also get like, actually I want to listen to it, actually maybe there's a reason why I should be listening to it, but then I just keeping brushing that off and I'm like no... that's what it wants me to think. Dana, 8, 151*

*I used to think that anorexia was my best friend, that everyone else was just lying to me and she was the only person that I could trust, and she was like a part of me... I think, it's stupid and it's illogical and... if I listen to it, it's going to kill me, like that's the bottom line. Dana, 5, 92*

*I'm in here [inpatient unit], I have to eat a lot to gain more weight... constantly thinking about food and thinking about exercising, when I next have to eat. Emily, 1, 32*

*I think that's probably like one of those illnesses that just sort of convinces you that it's good [and]... suggests like a preferred... state of being but then as you get further down that gets stronger and then obviously you're getting worse and therefore, it's like a downward spiral... it just sort of consumes you. Fiona, 4, 96*

*I guess and it's negative in terms... it restricts like what I'm able to do... because I get so tired and stuff... it affects if ever we're going out for a meal or... out with my friends, it stops me from doing that kind of thing*

*but at the same time I find it, like, I like it being there because it reminds me that I shouldn't eat too much. Gemma, 1, 12*

*It keeps me in control of not gaining [weight]. Helen, 3, 92*

**c) *The Battle Between the Self and Anorexia***

*I get kind of frustrated almost, and then it's just so hard, like I hate being sort of like divided, I hate having to have that little inward battle about food because sometimes, sometimes you see it's so pathetic and other times you're, it's not pathetic after all, you don't want to gain weight and I hate just having that inward battle.... sometimes you can't even decide what side you're on. Amy, 8, 208-210*

*It depends how much strength you've got, it hits you worst when you're tired... and with fighting it, it makes you tired. Beth, 13, 414*

*I used to think of myself with like two, maybe two brains almost...the brain which was anorexia, and then me, and then it felt as if I slowly just started to lose my brain and I just had anorexia's brain. Dana, 5, 94*

*My first brain was just me, the one that liked dancing, drawing, bikes and stuff and then the other brain, was the one that hated me, that wanted me to lose weight, and one that... was the bully, and that was just constantly like behind me... feeding me all these thoughts. Dana, 6, 98*

*Sometimes I'd be thinking things and like it's like having two sides of yourself it's like, I'll be thinking the negative thoughts then the other side*

*of me is like that's a really stupid thing to think and I then I get really upset about feeling like that. Gemma, 3, 90*

*It's just a way of coping with them [the thoughts]... so [that] it's not constant, this mental battle. Helen, 4, 150*

## **2. Relationships with Negative Thoughts and Worry**

*I worry about them [family and friends]... I like to think it's because I care about them... I guess in the end it's probably because I'm thinking about them at least I'm not thinking about what I'm eating that's probably the only good thing about it, but I am quite a worrier. Amy, 7, 184*

*If it put me into a sort of really bad mood but then it would just lead me to start thinking about what I was eating and that, it would just sort of be a chain of events not directly worrying about them would make me not eat it's just sort of what it would lead to. Amy, 8, 198*

*You get tied up in a bit of a cycle of worrying. Beth, 16, 527*

*I think this has happened [where I couldn't control my thoughts]... it's almost like my brain couldn't really work. Beth, 17, 543*

*I think it kind of makes you think more about what you need to do, so with work or something, if I worry about... something, it makes me want to do it, and like with eating or something, if I get worried about it I kind of feel that... I should maybe talk to my parents... I think it's good because it makes you think more about what you need to do. Cara, 13, 404*

*They are mostly unhelpful... they make me think more about my shape and everything... I mostly just want to kind of get rid of them because I know they're not logical thinking and other people don't think about that, like they're not saying, oh you've gained weight whereas my thoughts probably say like, oh you've definitely have gained a bit of weight. Cara, 12, 369*

*If I couldn't control, like my thoughts, it would be quite scary and hectic. Dana, 16, 304*

*Sometimes if I have a feeling like, oh I'm greedy or something or I'm fat, and I think well it's good that I'm thinking that because then I won't overeat and I won't actually ever get to a point where I am medically overweight... so when I get feelings like I'm so greedy or I shouldn't eat... then sometimes it makes me think, well I suppose that's a good thing because... then I won't ever, I know that I won't ever get like truly like, health-affectingly obese. Dana, 13, 236*

*In a way [it is helpful] because if you worry about it then you can just stop eating and lose weight and then you won't gain weight. Emily, 6, 214*

*If I don't eat or eat less then I won't have to think about it, so then I won't have those thoughts. Emily, 5, 152*

*I'd probably worry about not worrying. Fiona, 8, 246*

*When I was feeling at my worst I would then think that [having negative thoughts]... was good because that was making me, like urging me to... lose more weight. Fiona, 8, 228*

*Well if I wasn't able to worry about myself... not be able to worry about my weight would feel like I'd given in to... eating normally again. Gemma, 7, 138*

*[Negative thinking] stops me feeling worse... if I didn't think the way I do and I ate too much I'd end up feeling worse later on, so although it makes me feel bad... it stops me feeling worse. Gemma, 3, 82*

*[It] stresses you out and I end up just kind of having a little bit of a breakdown because I can't deal with all of the worried thoughts. Helen, 4, 132*

*It can be helpful like with me if I get worried about something it drives me to do better, better like with exams. Isabelle, 2, 74*

### **3. Relationships with Others**

*When I've been talking to my mum or my sisters about it [anorexia nervosa] and they haven't really understood where I'm coming from. Amy, 14, 393*

*I always think that people are just out there to fatten me up basically, so like mum and dad will be secretly... using full fat milk with me or... secretly putting cheese in a sauce. Beth, 15, 495*

*I had this thought that “Joan” [the clinician] was like secretly ringing mum and being like, okay you need to put some butter in her mash.... kind of like they’re conspiring against me.... I couldn’t trust anyone, like everyone’s; everyone was deceiving me. Beth, 26, 893-897*

*Some of them just don’t understand it and then they are just like, why don’t you eat that... it’s quite hard for them to get. Cara, 14, 432*

*When I got home I’d... have tea which I’d thought about planning and like manipulating my parents to like let me have... like weeks in advance... I told my parents that I would have lunch but I didn’t, I’d throw it away... I wouldn’t talk to anyone, I wouldn’t talk to my parents, I didn’t have any, I couldn’t talk to any of my friends or any of the friends... I lost all my friendships. Dana, 3, 50*

*I think quite a lot of people don’t get it or they think it’s like something which is quite quick and you can sort... just eat again and you’ll be fine, rather than understanding that it’s like quite a slow process that’s obviously you have to do double the work to get out of it. Fiona, 5, 120*

*I’ll say I don’t like it [the food]... but... they don’t let me get away with that anymore... that used to be something I could use to skip a meal or something but I can’t do that anymore.... it makes me feel really angry towards them because they’re treating me differently [to my sister], even though I know there is a legitimate reason for that, and I don’t think it’s fair that they should treat me differently to how they treat her. Gemma, 8, 247-251*

## Cognition

### 1. Focus of Attention

*Because you were out spending more and more time on my own then it was sort of the only thing I was ever thinking about. Amy, 11, 277*

*Sometimes I get a bit self-conscious if I've obviously put on a little bit, and I think thoughts come in, oh you probably should not eat as much as you do. Cara, 9, 271*

*I didn't find myself... analysing what I was thinking, I was just thinking a lot, I just had so many thoughts, but I didn't think why am I thinking that? I just had so many thoughts. Dana, 16, 326*

*Still thought about it, still thought about what I had eaten and just any that I still need to lose weight. Emily, 5, 156*

*I think it's because I had all those thoughts and things in my head that that was at the front of my memory, so that was what I could remember and that was what I sort of knew, and therefore anything like that just picked it up and like really reiterated that point, I think. Fiona, 2, 52*

*I don't think I concentrated on anything that was happening around me; it was just more what I was thinking myself. Gemma, 6, 195*

*I've always felt self-conscious about like my body or what I'm doing at school or just myself in general. Helen, 6, 229*

## 2. Memory, Concentration and Confidence

*I find it quite hard to kind of think when I'm hungry. Beth, 19, 647*

*I think probably if I eat more... then I definitely can concentrate more, because I'm probably a bit less tired, so say I've been at school and I haven't eaten as much as I would at home, I definitely find it harder to revise. Cara, 10, 303*

*I couldn't really concentrate... I was constantly reading revision books, but I could never remember it, I could never remember what I was reading... with books I had to read the page two or three times at least every page because I'd read it and then I'd be like... what was that?  
Dana, 4, 70*

*Sometimes I questioned my memory, sometimes I'd question my maths and sometimes I just wanted to make sure, so yes, I'd be scared that I'd forgotten something or maybe I was misjudging how many calories there were, maybe I might have to Google how many calories were in that again, for the fifth time or I'd have to check... I'd have to go in the bin and check the packet again for the fifth time... I just sometimes...  
[question] my memory, ... like what have I actually had today? It was so hard to concentrate. Dana, 7, 112*

*Just thinking about food all the times, then I can't concentrate on other things, [I] get distracted. Emily, 6, 192*

*Really bad I think, especially at school I noticed that my concentration wasn't very good, and that I could forget things quite a bit. Fiona, 7, 224*

*I think I definitely do find it more difficult to concentrate, like I do get distracted quite easily. Gemma, 3, 68*

*It distracts me throughout the day so it's hard to concentrate on things. Isabelle, 2, 60*

## **Coping Strategies**

*Say if... someone is offering around chocolates or something and I want to take one, then I kind of have second thoughts about it, and then I try and sort of push anything that is going to sort of tell me oh it's going to make you fat, I try to push that away because I know it's not true, just like I know that's what having anorexia does to you, so I try to push that sort of thing away, because like, I know subconsciously that that's not what should be happening, so yes I definitely try and push that sort of thought away. Amy, 9, 224*

*I generally do that with school work, so like I'll throw myself into work instead so I don't have to think about it. Beth, 18, 575*

*I just try to clear them from my head really and... mostly just try to ignore them. Cara, 9, 267*

*When I get the ones [thoughts] where I feel I've put on weight or something, I feel that there's no need for me to act on them because it just worries my parents or makes me feel that I don't need to, so... I kind of just push away... distract myself... by the end I just forget that I've had that thought and I think being with my friends or... at school... I*

*definitely get distracted easy, like it just goes away when I'm distracted by my friends or work. Cara, 19, 552*

*I think if I get an anorexic thought then I'll purposely, consciously change how... I'm thinking and I'll think the exact opposite and... I'll think no that's stupid, I'm not listening to that and I'll think of something else. Dana, 15, 282*

*I'd read constantly in my spare time, I'd read because as soon as I stopped reading I'd have so many thoughts flooding my head... I just couldn't sit for five minutes doing nothing because I'd just break out in tears because the thoughts were so cruel to me. Dana, 3, 50*

*I'm really happy to be around food as long as I'm not going to have to eat it, but when I'm expected to eat it, then I just don't want to even look at it, I just hate the smell of it. Emily, 2, 62*

*I usually try and do... some homework or something just to get it out of my mind, so my mind's off of it. Fiona, 6, 178*

*Cutting myself off from other people... socially not doing anything, just to avoid like any contact, so just in case there might be food involved. Fiona, 8, 232*

*I just try and distract myself... think about something else or do something with my friends and just forget about it if I can but it's always there at the back of my mind. Gemma, 2, 50*

*[I avoid] some friends who are... always doing this diet or that diet or quite body obsessive themselves. Helen, 5, 164*

*I tell close friends [my thoughts and worries]. Isabelle, 3, 102*

## **Early Experiences and Memories**

### **1. The Emergence of Weight Concerns.**

*I think it's how I'm always categorised as the "Jones's" size... there has always been this kind of division between sides [of the family]. Beth, 21, 709*

*The thing about... going to defy what people kind of thought of you as... you don't just want to be like a big-boned one. Beth, 27, 7 (participant validation interview)*

*My mum always used to say, you love your food don't you?... Then as started getting older I used to start making the connection, thinking it's because I like my food a lot isn't it that I'm this big, but my mum always said to me, she's like you've never been, you've never been big... I've had early memories of people saying like, oh you're so chubby, oh like chubby and cute. Dana, 2, 24*

*I remember being like five... I'd drawn a picture of myself, really like a big circle with like a face on and I remember crying and I showed my mum... [and said] this is what I look like... all my friends were... really skinny and stuff and I can remember someone calling me fat and that just stuck in my mind ever since.... I think I remember being with my friends and... this boy come along who was like the same age as me...*

*then I just remember the boy saying... you're fat and they're not.... I remember feeling really embarrassed and... I wanted to curl up in a ball.*  
Dana, 1, 14-18

*My step-dad's got two... daughters and they're in the same year as me, and I always remember they're like a lot smaller than me and to me that was really triggering because... they'd always be the two who were a lot smaller and weighed a lot less and I was always the bigger one, and I didn't like that at all... even though I knew that they were so much smaller than me and I could never... I'd just compare myself to them and always wanting to be as small as they were I think. Gemma, 8, 237*

*I think going back to like my... step-sisters... when we'd all be eating together... they'd always get given a lot less than me and I think I was kind of considered the one who would always eat what, all of what they were given, and... thinking about that when I was getting older was not something I wanted, to be like labelled as the... one who was always hungry, or who always was eating and I think that was something I didn't like. Gemma, 9, 267*

## **2. Systemic Factors.**

*My [family member]... had anorexia too, she's had it for probably three years and she was inpatient in the summer. Beth, 4, 87*

*[My mum] doesn't eat that much because she doesn't normally have time... she definitely doesn't eat as much and I always used to notice that when I was really ill.... when I was really, really ill... I'd be like mum doesn't eat that much so why do I need to eat more than she does, but*

*like my brother eats quite a lot and he's really skinny and my dad had always just had a really healthy attitude to food. Cara, 25, 723-725*

*They never would ever let me miss a meal because they're always like, if she misses one, she'll miss another, but even before... they were always like, you should have breakfast even though I was completely healthy. Cara, 26, 749*

*Since having my eating disorder, I've come to the knowledge that my nan actually has an eating disorder; when she was younger. Dana, 20, 419*

*I used to really like this Chinese restaurant... which was like an all you can eat buffet... and if I did good on school, we'd go out and I'd [have] three of four plates of Chinese, then I'd go [and get] two plates of dessert, including chocolate fountain covered with strawberries. Dana, 22, 451*

*I think my gran did [diet] quite a bit. Emily, 9, 350*

*I think like quite healthy... we never really had things like crisps or chocolates or anything like that in the house, so we were generally like quite healthy and mum always like, having fruit and vegetables and things like that, but then, not sort of saying, oh you can't have that. Fiona, 12, 381*

*If you did well or something... if we were going to the cinema or going out for something, and then you'd always get... sweets or popcorn as like a treat. Gemma, 7, 259*

*Just kind of eat what you're given, eat healthy. Helen, 8, 281*

*I remember as I was growing up my grandparents and my parents talking about how skinny my [family member] was and how they thought she had an eating disorder... it turned out she did. Isabelle, 6, 204*

### **3. Stressors.**

*Within the first term [at my new high school]... I started my GCSEs early, I was in top set everything, [and] I was on the gifted and talented scheme. Beth, 5, 127*

*[I felt] very pressured, like we had a meeting before our Year 10 exams basically saying that you need to get all As and A\*s. Beth, 5, 131*

*After my boyfriend broke up with me, I just thought, there's obviously a reason he broke up with me, and whatever that is, like, I'm just a bad person, I'm not allowed to eat, why should I be given the right to eat if people don't like me. Dana, 12, 218*

*I think partly my parents' divorce amongst other things, I don't really know what apart from that. Emily, 1, 16*

*I think probably like changing school, I changed school a bit before that... to a better school. Fiona, 2, 58*

#### 4. Role of Memory.

*I find it quite difficult [the memories], because I find it difficult to accept ever going back to what I was like. Beth, 5, 115*

*I think I kind of use memories of... when I was at a high weight, I felt awful and wasn't happy. Beth, 14, 250*

*I hate bringing them back up because they're memories, I don't want to forget them because... they've definitely made me feel proud of how far I've come. Cara, 12, 349*

*I remember... my friend had a like a cinnamon swirl bun, or something and this was when I was quite ill and I actually, I remember being so hungry I actually asked if I could have a piece, and I had a little piece and then it, it tasted so good, I felt so bad, but it tasted amazing and I wanted to ask for another piece, but then, I remembered in my mind, all those pictures of girls like, slim, beautiful, in like summer clothes... and then that's what made me stop, I didn't have any more of that, cinnamon swirl. Dana, 18, 389*

*Just getting ready to be weighed, feeling, wondering, scared about it all, and then, just stepping on the scales, just always remember that number, just remembering every single weight that I've ever weighed, just going through my head, for hours and hours afterwards, just thinking about it. Emily, 9, 326*

*I think probably like the comments and things coming back into play, so like ones I said about the girl that was saying that like, I'm bigger than*

*other people, I think they sort of came into play... then made me sort of lose that feeling of hunger I think. Fiona, 12, 369*

*I was trying to think... how bad I felt about how I looked and everything like that and I was just thinking to myself that I didn't want to feel like that again, so... it was kind of like using my feelings as a reminder to not eat that much again. Gemma, 6, 191*

*Yes it makes me not want to eat. Isabelle, 5, 184*