THESIS

Factors influencing treatment outcome in young people with OCD: The

relationship between parental psychopathology, parent relationship

indicators, child inflated responsibility and OCD symptomology

Harriet Nicola Janey Mcilwham

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ABSTRACT

Background

Salkovskis et al. (1999) proposed a number of pathways to the development of inflated responsibility and OCD, one of which was based upon the parent-child relationship. More recently, this relationship has also been shown to affect treatment outcome. The aim of the study was to explore how the parent relationship, parent psychopathology, inflated responsibility and OCD symptoms may affect treatment outcome, and consider whether this varied according to parental involvement in treatment.

Method

This study used a correlational design. The study used forty young people (aged 12-17) who had previously been enrolled on a randomised controlled trial (RCT) that compared individual and parent-enhanced CBT. Indicators of parental relationship, namely criticism and empathy, were coded from therapy recordings and how these affected treatment outcome within the trial was examined. Coding was based upon established measures of expressed emotion.

Results

The results indicated that parental criticism does not play a role in predicting treatment outcome. However, parental empathy did predict treatment outcome, but only when parents were involved in therapy. There were no significant relationships between parental psychopathology and parent relationship indicators, nor did any relationships exist between parental relationship indicators and either inflated responsibility or OCD symptomology, as proposed by Salkvoskis et al. (1999).

Conclusions

These findings fail to support the assumption that parental criticism is associated with a worse outcome for children and adolescents receiving treatment for OCD. A unique finding is the role parental empathy plays in improved outcome, but only when the parent is involved in treatment. Methodological problems are considered, and the clinical and theoretical implications discussed. Recommendations regarding future research are then considered.

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1. Introduction

1.1 Overview

The following section will discuss the presentation, prevalence and prognosis of Obsessive Compulsive Disorder (OCD). Treatment guidelines for young people with OCD will then be summarised. This will be followed by an overview of the main theoretical models which underpin OCD and the role of the family in OCD. The research relating to the current study will be summarised and this section will conclude with a rationale for the study, the aims of the study and the study hypotheses.

1.2 OCD in Young People

1.2.1 Presentation of OCD in young people.

OCD is a serious and persistent mental health problem. The Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013) defines OCD on the basis of the presence of obsessions and/or compulsions. Obsessions are identified as recurrent thoughts, impulses or images which are intrusive and inappropriate and cause high levels of anxiety and distress. Compulsions are defined as repetitive behaviours or mental acts which are driven in response to an obsession or according to rigid rules. These compulsions are often completed in order to reduce stress or to prevent a dreaded event from happening.

Obsessions and/or compulsions must be time consuming (occupying more than an hour a day), cause marked distress or anxiety and impair social and academic functioning. At some point during the course of the disorder,

the person has to recognise that the obsessions and/or compulsions are excessive or unreasonable. However, due to cognitive developmental differences within children, some believe that this criterion is not necessary within the child population (Geller et al., 2001).

The International Classification of Disorders (ICD-10; World Health Organisation, 1992) defined OCD by the presence of recurrent obsessional thoughts or compulsive acts or both, which must have been present for most days for a period of at least two weeks. There are a number of criteria, which must be present for both obsessions and compulsions, which include that they originate in the mind of the person, that they are repetitive or unpleasant, that at least one (obsession or compulsion) is felt to be excessive or unreasonable, that the individual tries to resist them and fails to resist at least one, and that carrying out the obsession or compulsion is not a pleasurable experience. Finally, ICD-10 (World Health Organisation, 1992) outlines that the obsessions and/or compulsions cause significant distress and interfere with the individuals' functioning and the symptoms are not due to other disorders, such as schizophrenia or other affective disorders.

1.2.2 Prevalence and prognosis of OCD in young people.

OCD in children and young people is a very serious and often disabling problem. OCD is thought to affect at least 1% of the child and adolescent population (Zohar, 1999). In a prevalence study conducted with 10,438 five to fifteen year olds in the UK, it was reported that 0.25% of young people had OCD (Heyman et al., 2001, 2003). Young people with OCD were more likely to be of lower socio economic status and IQ. Prevalence of OCD was reported to rise with age, with rates around the ages

of puberty being similar to prevalence within the adult population. Within the child population OCD is more common in boys than in girls, although by adolescence OCD tends to affect both sexes on a more equal level (Geller, 2006; Geller, Biederman, Jones, Park, et al., 1998). Reports of onset in childhood OCD are variable, however the mean age of onset of OCD is around 10 years (range 6.9 – 12.5 years) (Geller, Biederman, Jones, Shapiro, et al., 1998; Stewart et al., 2004; Swedo, Leonard, & Rapoport, 1992).

Onset of OCD in children and adolescents may be gradual, but specific triggers or factors which may be likely to make onset more sudden have been identified (Bogetto, Venturello, Albert, Maina, & Ravizza, 1999; Chacko, Corbin, & Harper, 2000; Coetzer, 2004; Kim et al., 2004; Salkovskis, Shafran, Rachman, & Freeston, 1999; Snider & Swedo, 2004), including life stressors and neurobiological causes, such as infections or brain injury. Symptoms change over time, often in response to life stressors (Stewart et al., 2004). If left untreated, the course of OCD is often chronic (Abramowitz, Taylor, & McKay, 2009) and if severe, OCD symptoms tend to persist into adulthood (Micali et al., 2010; Stewart et al., 2004; Thomsen, 1995).

One of the most common obsessions amongst adolescents with OCD is fear of harm coming to the individual or a family member i.e. death (Hudak & Dougherty, 2011; Toro, Cervera, Osejo, & Salamero, 1992). However, Toro et al. (1992) highlighted that around 20% of young people with OCD reported obsessions unrelated to compulsions. Others have identified strong links between specific obsessions and compulsions

(Lopatka & Rachman, 1995) based upon OCD specific appraisals (Libby, Reynolds, Derisley, & Clark, 2004).

OCD can impact negatively on the functioning of the child and their family (Cooper, 1996). OCD can cause significant impairments for the child including difficulties with performance at school and with relationships, within their family and peer groups (Piacentini, Bergman, Keller, & McCracken, 2003). These impairments highlight the need for further research into aspects relating to the prevention and treatment of OCD within the child and adolescent population.

1.2.3 Comorbidity in OCD.

OCD is associated with a broad range of other mental health disorders (C. M. Turner, 2006). These include tic disorders, Tourettes syndrome, pervasive developmental disabilities, other anxiety disorders, depression, eating disorders and externalising disorders (Bolton, Rijsdijk, O'Connor, Perrin, & Eley, 2007; De Mathis et al., 2008; Masellis, Rector, & Richter, 2003; Matson & Nebel-Schwalm, 2007; Milos, Spindler, Ruggiero, Klaghofer, & Schnyder, 2002), which make functioning and treatment more complex (Matson & Nebel-Schwalm, 2007; Milos et al., 2002; Yerevanian, Koek, & Ramdev, 2001). Around two thirds of individuals with OCD meet the criteria for another psychiatric disorder within their lifetime (Karno, Golding, Sorenson, & Burnam, 1988), most often other anxiety disorders, including generalised anxiety disorder (Heyman et al., 2001). However, comorbidity with depression is a risk factor for a variety of mental health problems in later life (Last, Hansen, & Franco, 1997) and there is some limited evidence indicating an increase in suicide risk; for example, Torres

et al. (2007) reported that 50% of patients with OCD had either had suicidal thoughts or passive death wishes, while 10% had a history of suicide attempts.

1.3 Psychological Treatment for OCD in young people

The most robust evidence indicates that children or young people with OCD should be offered Cognitive Behavioural Therapy (CBT) with Exposure and Response Prevention (ERP), and this is considered to be the gold standard treatment (National Institute for Health and Care Excellence, 2005). This was updated to consider the role of family, suggesting that therapy should be delivered to the child alone or with their family (National Institute for Health and Care Excellence, 2006). An alternative for individuals experiencing OCD, who are younger or have milder symptoms, is ERP therapy. Both ERP and CBT are described briefly below.

1.3.1 Behavioural treatment for OCD: ERP

ERP forms an essential part of the CBT treatment for OCD and is an effective standalone treatment for OCD (National Institute for Health and Care Excellence, 2006). ERP is based upon the behavioural theory of extinction (Pavlov, 1960), with a focus on confronting avoidance, typically in a gradual fashion. This is done using a graded exposure approach to the feared stimuli, starting with the least feared, to support individuals in reducing their learnt response and consider an alternative. The therapeutic goals are achieved when an individual is able to overcome their fear and discontinue their response to escape and therefore learn that the feared consequences of not completing compulsions are not going to occur (Piacentini & Langley, 2004).

ERP has been shown to be an effective treatment of OCD (Franklin, Abramowitz, Kozak, Levitt, & Foa, 2000) and comparative to alternative treatments (Bolton & Perrin, 2008; Whittal, Thordarson, & McLean, 2005). Bolton and Perrin (2008) compared ERP for OCD in children to a waiting list control and reported a large treatment effect size which was maintained at follow up. Whittal, Thordarson, & McLean (2005) compared ERP and CBT and found no significant difference in outcome at the end of treatment and follow-up, however symptom improvement was better within the CBT group.

1.3.2 Cognitive treatment for OCD: CBT

CBT is widely recognised as the treatment of choice for childhood OCD (National Institute for Health and Care Excellence, 2006) and draws on cognitive and behavioural theories. Therapy aims to give the individual an understanding of their OCD and equip them with techniques to help overcome their OCD symptoms. Within the context of OCD, CBT aims to highlight the relationship between obsessions, feelings, and compulsions. In general, there is an idiosyncratic approach to treatment, which is dependent upon the specific obsessions and understanding of the difficultly. CBT has a number of distinctive characteristics including the use of a collaborative approach, and structure, along with being time limited in nature, goal and problem-oriented and making use of guided discovery, summaries and feedback (J. S. Beck, 1995).

A number of studies have examined the effectiveness of CBT in the treatment of OCD in adults and children (Martin & Thienemann, 2005; Valderhaug, Larsson, Gotestam, & Piacentini, 2007; Warren & Thomas,

2001; Williams et al., 2010). Two recent meta-analyses concluded that CBT was more effective than no treatment at all and other psychotherapeutic treatments (Olatunji, Davis, Powers, & Smits, 2012; Reynolds, Wilson, Austin, & Hooper, 2012). Olatunji et al. (2012) compared CBT for adults and children with OCD with a control condition and concluded that CBT was more effective at both outcome and follow up. Subsequent analysis highlighted that outcomes were better for children than for adults. Reynolds et al. (2012) concluded that CBT for OCD had a very large effect size ($r = 1.68$) and was a more effective treatment than CBT for other anxiety disorders in children and young people. Although CBT does not cure OCD, the research suggests that for the majority there are clinically significant gains but that patients often remain symptomatic at the end of treatment (Abramowitz, 1998). Although the literature suggests CBT is effective, and that findings from RCTs are transferable to normal clinical practice (Warren & Thomas, 2001), there are a number of variables which impact upon treatment outcome in OCD, suggesting that CBT may not be effective in all cases. Several studies have indicated that comorbidity, symptom severity, family functioning, treatment processes and cognitive influences predict poor or no response to CBT in OCD (Keeley, Storch, Merlo, & Geffken, 2008; Storch, Björgvinsson, et al., 2010).

Within the guidelines there are suggestions to include members of the family in treatment within the child OCD population (National Institute for Health and Care Excellence, 2006). A review by Renshaw, Steketee, and Chambless (2005) concluded that including family members in treatment enhanced the treatment response. However, more recently, a randomised

control trial (RCT) was conducted to directly compare individual CBT (n = 25) and parent enhanced CBT (n = 25) and reported no significant difference in outcome between the two treatment groups at both end of treatment and on six month follow up (Reynolds et al., 2013). This was the first study to directly compare these two treatments and primary findings were different to the current guidelines and assumptions within the literature. Although it was a small trial, the study used robust investigative strategies. The authors also highlighted the need for further research to examine age effects on treatment effectiveness and potential interactions between treatment outcome and parental involvement in treatment.

1.3.3 Interim summary.

OCD is an often complex and disabling illness, for both the individual and their family, and can be seen in both the child and adult population. It can occur alone or in conjunction with order disorders which can add complexities in relation to treatment.

There has been increasing interest in developing an understanding of OCD and factors pertaining to treatment outcome. Historically, much of this has developed from biological, behavioural and cognitive theories, but increasingly interest has turned to the role of the family. The theoretical frameworks of OCD are therefore outlined within the following section, with particular attention given to the growing literature exploring environmental influences in OCD.

1.4 Theoretical Models of OCD

The literature has recognised that there may not be a single causal factor or theory which explains the development of OCD. Evidence for

causality appears to be strongest within the genetic literature and the cognitive behavioural theories appear to offer the most coherent pathway for the maintenance of OCD.

Taylor and Jang (2011) considered the roles of behavioural-genetic and cognitive-behavioural influences in the development and maintenance of OCD. The authors tried to integrate these influences into a unified and empirically supported model, by undertaking a twin study (n = 307 pairs). A belief causation model was one that best fitted, as beliefs accounted for 18% of phenotypic variance in obsessive compulsive symptoms, while environmental and genetic factors accounted for an additional 47% and 36% of phenotypic variance respectively. The authors reported that the findings supported further exploration of a biopsychosocial model of OCD.

The aetiology of OCD is likely to be multi-factorial (Taylor & Jang, 2011), as no single theory has an evidence base robust enough to stand alone in explaining the occurrence and maintenance of OCD. The following areas, many of which contain specific models or hypotheses, appear to be implicated in the understanding of OCD: genetic, biological, neuropsychological, psychological (behavioural and cognitive) and environmental. Overviews of those which underpin the current research are discussed within the following section.

1.4.1 Genetic hypothesis of OCD.

Individuals with OCD are more likely to have a first degree family member who has suffered or is suffering from the same disorder, when compared to matched controls (Bellodi, Sciuto, Diaferia, Ronchi, & Smeraldi, 1992; Hettema, Neale, & Kendler, 2001; Lenane et al., 1990).

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Twin studies within the adult population have suggested that genetic factors contribute to 27-47% of the variance in OCD symptoms, based upon the scores on OCD measures (Van Grootheest et al., 2007; Van Grootheest, Cath, Beekman, & Boomsma, 2005), with the remaining being attributed to environmental factors. Pauls (2008) suggested that there may be regions of the genome that are likely to harbour susceptibility loci for OCD. More recently Stewart and colleagues (2013) completed a genome-wide association study of OCD, in order to further understand the genetic vulnerability to OCD. Evidence of a specific OCD gene was not conclusive; however there were indications that gene expression may have a role in brain development (see section 1.4.2) and possibly the aetiology of OCD.

1.4.2 Neuropsychological explanations of OCD.

Brain development is influenced by a number of factors including biological (genetics, hormones, gender, gestation period, neurotransmitters) (Bodo, 2010; Davis et al., 2011; Douet, Chang, Cloak, & Ernst, 2013; Giedd et al., 2006; Hines, 2011; Levitt, Harvey, Friedman, Simansky, & Murphy, 1997), environmental (parenting, neglect) (Belsky, 1984; Halperin & Healey, 2011; Whittle et al., 2013) and psychological (stress, psychopathology) (Malter Cohen, Tottenham, & Casey, 2013; Whittle et al., 2013). How the brain develops has been shown to have direct links to the development of health and illness (Giedd & Rapoport, 2010), and this has included a role in the development of OCD (Brem et al., 2012).

Brain scanning has been thought to show the strongest evidence for a neuropsychological component to OCD (P. M. McGuire et al., 1994; Rubin, Villanueva-Meyer, Ananth, Trajmar, & Mena, 1992). Studies that compared

images of the brains of people with and without OCD showed differences in brain-activity patterns, this being evidence of general abnormality (Chen, Silk, Seal, Dally, & Vance, 2013) and specific abnormalities, such as in the fronto-striatal area (Menzies et al., 2008).

Adults with OCD appear to have deficits in executive functioning (Flessner et al., 2010; Grisham, Anderson, Poulton, Moffitt, & Andrews, 2009) which included decision making and set shifting (Lawrence et al., 2006), inhibition (Chamberlain, Fineberg, Blackwell, Robbins, & Sahakian, 2006), cognitive flexibility (Chamberlain et al., 2007), attention (Andrés & Van der Linden, 2000; De Geus, Denys, Sitskoorn, & Westenberg, 2007), planning (Ornstein, Arnold, Manassis, Mendlowitz, & Schachar, 2010), and memory (Okasha et al., 2000). More recently, researchers have investigated issues of executive functioning, within the child and adolescent OCD population. Shin et al. (2008) found significant difficulties in executive functioning, more specifically set shifting. But others have failed to find cognitive deficits in motor inhibition and memory within this population (Beers et al., 1999; Ornstein et al., 2010).

Although it is possible that these deficits may be explained by comorbidity with other disorders, such as depression (Moritz et al., 2001; Purcell, Maruff, Kyrios, & Pantelis, 1998), this area of research has enabled a deeper understanding of OCD by enhancing behavioural and cognitive theories through understanding how individuals with OCD may get stuck in repetitive patterns possibly due to deficits in inhibition or set shifting processes.

1.4.3 Behavioural theories of OCD.

OCD was thought to be an untreatable condition. However, the development of behavioural theories (Pavlov, 1960; Skinner, 1938) has allowed for a better understanding of the development of compulsions. In turn this has enabled development of ways to treat the disorder.

Both classical and operant conditioning have been used within the behavioural model of OCD. Classical conditioning theory (Pavlov, 1960) states that when events happen close together they can develop a similar meaning, hence learning occurs. Pavlov (1960) found that when a neutral stimulus (e.g. a bell) was paired with an unconditional stimulus (e.g. food), a meaningful association occurred. Once conditioned, the response to the unconditional stimulus (e.g. saliva) could be activated when the bell was rung alone. Operant conditioning (Skinner, 1938) explains the role repetition has in strengthening the relationship between the stimulus and the response. The theory suggested that behaviours are strengthened by positive consequences and weakened by negative ones.

A theory combining these is Mowrer's (1939, 1960) two factor theory of the development and maintenance of fear, which has enhanced understanding of the development of OCD. The initial stage describes how a neutral stimulus is paired with an aversive stimulus; from this, the once neutral stimulus has become conditioned to evoke a fear response when triggered. A person who may develop OCD, may learn through association with a negative experience, such as becoming ill, to become fearful about a particular situation, object or other factor, for example contact with others, so transforming a once neutral stimulus into a threatening one. In the second

part of Mowrer's theory, operant conditioning (Skinner, 1938) is used to explain how the fear developed is then maintained. In OCD, compulsions help an individual to avoid the feared consequence of the obsession - becoming ill or contaminated. Carrying out compulsions, for example avoidance of contaminated objects or individuals, reduces the unpleasant feelings of anxiety and so is adopted long term to help minimise distress. However this avoidance negatively reinforces the continuation of the behaviour, and hence extinction of the fear is not possible as it does not allow the individual to confront the conditioned stimulus, this being their fear of becoming ill. Within the clinical context, support of the behavioural model comes from studies of exposure and response prevention (ERP) therapy, which supports the unlearning of strategies; see section 1.3.1.

Behavioural theories provided a useful framework in helping to understand OCD and have revolutionised treatment for OCD. Behavioural Therapy (BT) is a highly effective therapy and remains a core facet of Cognitive Behavioural Therapy (CBT). However, some consider that the behavioural model alone fails to provide a comprehensive explanation for the occurrence and diverse symptomology of OCD (Rachman & De Silva, 2009). This led to the observation that the absence of methods to address obsessions was a barrier to effective treatment (Rachman, 1983). A number of unsuccessful *ad hoc* techniques were used within the behavioural framework including thought stopping, the sting of a rubber band on the wrist of individuals and habituation training (Rachman, 1997). These techniques attempted to block or reduce the associated fear or anxiety but did not address the problem itself; this being the catastrophic interpretation

of the intrusion. Cognitive theories have helped us to understand this and enabled consideration of the processes which underlie OCD. In turn, this has enabled the development of further effective treatment interventions for OCD, such as cognitive therapy.

1.4.4 Cognitive theories of OCD.

The basis of the cognitive model is the finding that unwanted cognitive intrusions (thoughts and images) are common to the general population (Purdon & Clark, 1994; Rachman & De Silva, 1978), and have a similar content to clinical intrusions, yet only a small percentage of the population go on to experience OCD. Most people experiencing such an intrusion would regard it as unpleasant, but meaningless. However, individuals who develop OCD might appraise the intrusion with personal importance and/or consider them highly unacceptable or immoral. Where this occurs, a compulsion develops in order to manage the intense anxiety which becomes associated with the intrusive, distressing thought or image, so replicating behavioural models. This also reinforces the beliefs the individual has about the meaning of the thought and preventing them from considering that their appraisals are unrealistic. As this cognitive-behavioural process continues, it means that the individual may be unable to develop alternative more helpful strategies to manage the intrusive thought.

Cognitive theory has enabled the identification of a number of cognitive biases central to OCD, that are related to the interpretation of the meaning of the intrusive thought, and a number of specific models. Cognitive biases which have been shown to be relevant to OCD include 'inflated responsibility', 'intolerance of uncertainty', 'over estimation of

threat', 'over importance of thoughts' and 'perfectionism' (Libby et al.,

2004; Salkovskis et al., 2000; Steketee, Frost, & Cohen, 1998). These have

also contributed to the development of three specific OCD models which

have been widely researched and disseminated; these are the thought action

fusion model (Rachman, 1997), the metacognitive model (Wells &

Papageorgiou, 1998) and the inflated responsibility model (Salkovskis et al.,

1999). The transference of these models into the child and adolescent

population has largely been supported (Reynolds & Reeves, 2008).

Matthews, Reynolds, and Derisley (2007) found that these three specific

OCD models accounted for 35% of the variance in young people's OCD

symptoms. Inflated responsibility and meta-cognitive beliefs were shown to

be significant as independent predictors of OCD symptoms, suggesting they

may be particularly pertinent in understanding child and adolescent OCD.

These models are outlined within the following sections and a brief review

of the evidence base discussed.

1.4.4.1 The thought action fusion model of OCD.

The thought action fusion (TAF) model (Rachman, 1997) proposed

that individuals with OCD believe that their thoughts can influence events in

the world in one of two ways (Shafran & Rachman, 2004). The first way

relates to the belief that having a certain thought makes it more likely to

occur, which has been referred to as 'Likelihood TAF'. Where the event is

related to the individual it is known as "Likelihood-Self" e.g. "if I think

about falling ill, it makes it more likely that I will become ill" (Shafran &

Rachman, 2004, p. 87) and where it impacts upon another it is known as

"Likelihood-Other" e.g. "if I think about someone else falling ill, it makes it

more likely that they will become ill". The second type of belief- 'Moral TAF', relates to the idea that it is as bad to have an unacceptable thought or image as it is to carry out the particular act, e.g. "if I think about swearing in Church, this is almost as bad as actually swearing in Church" (Shafran & Rachman, 2004, p. 88). "Likelihood TAF" and "Moral TAF" have both been considered to contain a strong element of perceived responsibility for harm, which has been developed further within the inflated responsibility model of OCD (Salkovskis et al., 1999).

Evidence for the TAF has been supported within correlational and experimental research in OCD (Barrett & Healy, 2003; Libby et al., 2004; Muris, Meesters, Rassin, Merckelbach, & Campbell, 2001; Peterkin, 2012; Rachman, Shafran, Mitchell, Trant, & Teachman, 1996; Rassin, Merckelbach, Muris, & Spaan, 1999; Sillence, 2010). It has been suggested that individuals are more likely to transform normal intrusion into an obsessive thought if they believe their thoughts can have implications (Rassin et al., 1999). However, much of the research has suggested that although TAF is a model relevant to OCD, it may not be exclusively related to OCD (Muris et al., 2001).For example, Muris et al. (2001) found significant relationships between TAF, OCD symptomology ($r = .34$), trait anxiety ($r = .24 - .27$), and depression ($r = .33$) in a non-clinical adolescent sample (n = 427). Further research has replicated these finding, suggesting that TAF may be a transdiagnostic cognitive process as factors of anxiety and depression might play a role in its development (Barrett & Healy, 2003; O'Leary, Rucklidge, & Blampied, 2009). It has also been considered that TAF cognitive processes may become more established in teenagers,

indicating cognitive development may also be a factor influencing the development of TAF (Barrett & Healy, 2003; Libby et al., 2004).

Although the research has been helpful in developing our understanding of TAF, many of the correlational studies have small sample sizes, which may account for lack of differences between diagnostic groups. Similarly, experimental approaches can make findings difficult to generalise as the design reduces ecological validity. Although the TAF model may help us to consider the development and maintenance of OCD, further research would be helpful to clarify roles of the proposed 'Likelihood' and 'Moral' TAF beliefs and the significance of TAF within OCD.

1.4.4.2 The metacognitive model of OCD.

The metacognitive model was originally developed to explain generalised anxiety disorder (GAD; Wells, 1995). The metacognitive model proposes that individuals monitor and reflect upon their thoughts and thinking processes and that this process is implicated in a range of mental health problems (Wells, 1997; Wells & Matthews, 1994). The basis of Wells' metacognitive model is grounded within the Self-Regulatory Executive Function (S-REF) model (Wells & Matthews, 1994, 1996), which integrated information processing research (Carlson, Buskist, & Martin, 2000; Hayes, 1994; Western, 2002) with schema theory (Piaget, 1983).

Within OCD, the metacognitive model suggests that individuals experience thoughts as threatening because of a metacognitive belief that having the thought is undesirable or bad (Wells, 1997; Wells & Matthews, 1994). For example, an individual might have a sexual thought and may interpret this as meaning that they are immoral or a paedophile, which

causes them significant anxiety and discomfort. The interpretation of the initial thought is activated by a set of specific beliefs, including thought-action fusion (Rachman, 1997) and concerns about the emotions/discomfort that the thought elicits. This anxiety or discomfort causes the individual to consider further action such as neutralising the thought. Wells (1997) suggested that individuals who are susceptible to OCD are likely to make negative predictions about the consequences of having the thoughts and fail to develop effective strategies. Instead, these thoughts, and the feelings they create, become the focus of the individual. This leads the individual to assign priority to the internal experiences rather than the external events, with the internal determining whether it is possible to stop a ritual. To summarise, Wells' model of OCD is defined by perceived threat and subsequent coping style which results in dysfunctional beliefs about the nature of an individual's information-processing system (Wells, 1997). The metacognitive model for OCD was further developed by Purdon and Clark (1999) who highlighted two factors which may help to explain the persistence of OCD. The concepts of "ego-dystonicity" and "excessive control attempts" (Purdon & Clark, 1999) helped in identifying the process by which an intrusion can become meaningful to an individual with OCD and activate a number of cognitive and emotional responses. These in turn elicit compensatory behaviours which further reinforce the belief, and a cycle of maintenance is achieved.

Within the literature the role of metacognitions within OCD has been examined using correlational and experimental designs, using clinical and non-clinical participants (Fisher & Wells, 2005; Myers, Fisher, &

Wells, 2009; Myers & Wells, 2005, 2013; Solem, Myers, Fisher, Vogel, &

Wells, 2010). Findings support a relationship between metacognitive

beliefs and OCD (Myers & Wells, 2005; Solem et al., 2010), and specific

beliefs have been found to predict obsessive compulsive symptoms, even

when worry, non-metacognitive beliefs and threat are controlled (Solem et

al., 2010). Within the non-clinical population, experimental studies have

also provided further support for the metacognitive model (Fisher & Wells,

2005; Myers & Wells, 2013). By splitting participants into groups based on

high or low obsessional symptoms, and manipulating an experimental

condition focused on the effects of drinking, Fisher and Wells (2013) found

those with higher obsessional symptoms were more susceptible to have

more intrusions about drinking, spent more time thinking about these

intrusions and had more discomfort from the thoughts, when compared to

the controls. The results of the study supported the metacognitive model,

which may help to understand cognitive misinterpretations and the role of

beliefs about thoughts in the maintenance of OCD. Further to this, within

clinical populations significantly higher levels of obsessive compulsive

symptoms and higher scores of metacognitive constructs were found within

an OCD population when compared to a non-clinical population (Solem et

al., 2010). However, causality cannot be ascertained from the studies

which adopt a correlational design, and generalisation to clinical

populations may not be possible using both experimental and correlational

methodology. Research into the metacognitive model has not only enhanced

understanding of the cognitive processes at play in development and

maintenance of OCD, but may also help us to understand other models, such

as the TAF and the inflated responsibility models, within which cognitive misinterpretations are apparent.

1.4.4.3 The inflated responsibility model of OCD.

The inflated responsibility model of OCD (Figure A1.1, see Appendix A) has suggested that an individual's belief may impact upon how they interpret having a specific thought or intrusive image. Inflated responsibility is defined as:

The belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes. These outcomes are perceived as essential to prevent. They may be actual, that is, having consequences in the real world, and/or at a moral level. (Salkovskis et al., 2000, p. 350).

The model proposed that the origin of particular negative appraisals will generally lie in learned assumptions, which are formed from early experiences as an adaptive way of coping. When activated by a critical incident, an obsessional disorder may result. The theory of inflated responsibility suggested that assumptions may include beliefs about harm and responsibility, as well as beliefs about the context and consequences of the intrusive thoughts themselves. When someone holds such a belief, the occurrence of intrusive thoughts results in negative appraisals and efforts to prevent or undo such thoughts or prevent their reoccurrence (e.g. thought suppression, selective attention, reassurance seeking and rituals). Salkovskis et al. (1999) identified five pathways to inflated responsibility from which OCD might develop (see Appendix B, Table A1.1). These were: (1) a general sense of personal responsibility since childhood, (2) rigid and

extreme codes of conduct and duty, (3) overprotective and critical parents, (4) an actual incident affecting others' health or welfare and (5) an incidence which may be perceived to bring about harm but is coincidental. Salkovskis et al. (1999) suggested common developmental stages of OCD development, differences of speed of onset, triggers, response to CBT and specific compulsions, all depending upon the pathway. The third pathway, which suggests that overprotective or critical parents may play a role in the development of inflated responsibility and so OCD symptoms, triggered interest for the current study. Within the third pathway excessive hand washing or checking are suggested, in order to protect their loved ones. Salkovskis et al. (1999) suggested an association with depression in the young person and an average response to CBT. Although this pathway has been hypothesised, the literature, especially exploring the role of critical parents, is limited.

Support for the inflated responsibility model in adults and adolescents have been found in both clinical and non-clinical populations. (Bouchard, Rheaume, & Ladouceur, 1999; Faull, Joseph, Meaden, & Lawrence, 2004; Lopatka & Rachman, 1995). Inflated responsibility within recent research has generally been measured using either the Responsibility Attitudes Scale (RAS; Salkovskis et al., 2000) or the Responsibility Interpretation Questionnaire (RIQ; Salkovskis et al., 2000).

Studies within the adult population have been inconsistent; for instance, while some have not found the level of OCD symptoms to be related to inflated responsibility (Rachman, Thordarson, Shafran, & Woody, 1995), others have found inflated responsibility to be associated with higher

levels of OCD symptoms (Niemeyer, Moritz, & Pietrowsky, 2013; O'Leary et al., 2009; Rheaume, Freeston, Dugas, Letarte, & Ladouceur, 1995; Wilson & Chambless, 1999). However, estimates of the amount of variance in OCD symptoms explained by inflated responsibility has varied between 10 and 37.7 percent (Rheaume et al., 1995; Wilson & Chambless, 1999), while others have failed to find a relationship between inflated responsibility and OCD symptoms when metacognition and worry were controlled (Myers & Wells, 2005). However, as some consider inflated responsibility to be a form of metacognition, based on the nature of appraising the intrusion as meaningful, this is perhaps an unsurprising finding.

Experimental studies using non-clinical populations have highlighted significant relationships between higher levels of inflated responsibility and a number of variables: increased anxiety, preoccupation with not making errors, more checking and hesitation behaviours (Arntz, Voncken, & Goosen, 2007; Ladouceur, Leger, Rheaume, & Dube, 1996; Lopatka & Rachman, 1995). A further study manipulation assigned responsibility to either the subject or the experimenter and where responsibility could be assigned to the experimenter, there was a decline in discomfort and a decrease in the urge to check (Shafran, 1997). However, given the experimental nature of these studies, the results have to be interpreted with caution, as these behaviours may have pre-existed, rather than been a result of, the manipulation.

Within the child and adolescent population research, correlational designs appear to support the inflated responsibility model (Barrett &

Healy-Farrell, 2003; Libby et al., 2004; Matthews et al., 2007). Similarly, to the adult literature, inflated responsibility was found to predict variance in obsessive compulsive symptoms (Libby et al., 2004). In one study 35% of symptom variance was predicted by inflated responsibility and mediated other constructs, such as TAF and meta-cognitive beliefs, either completely or in part (Matthews et al., 2007). The authors felt this supported further exploration of the model within the child and adolescent population and highlighted the need for replication within clinical samples.

Barrett and Healy (2003) examined the cognitive appraisals of responsibility, probability, severity, thought-action fusion, self-doubt and cognitive control, with a small sample of children with either OCD (n = 28), anxiety (n = 17) or no symptoms (n = 14). Significantly higher ratings of responsibility, severity, thought action fusion and less cognitive control were reported by children with OCD in comparison to non-clinical children. However, conclusions could not be drawn due to the small sample sizes of the groups.

Libby et al. (2004) similarly compared young people with OCD (n = 28), other types of anxiety disorders (n = 28) and a non-clinical group (n = 62) on three cognitive appraisals, namely inflated responsibility, TAF and perfectionism. However, Libby et al. (2004) found that young people with OCD had significantly higher levels of inflated responsibility than both the anxious and non-clinical groups, so differing from the findings of Barrett and Healy (2003). In addition to this, Libby et al. (2004) found that OCD symptom severity was predicted by higher levels of inflated responsibility.

The experimental literature has explored the relationship between increased responsibility and obsessive compulsive symptoms amongst children and adolescents with OCD, using paradigms such as the sweet sorting task (Reeves, Reynolds, Coker, & Wilson, 2010). Findings have supported a link between inflated responsibility and increased checking behaviours (Reeves et al., 2010). The role of parents, namely mothers, has also been explored and findings suggested that maternal behaviour may play a role in a young person's performance on a task and/or their sense of responsibility (Burton, 2012; Farrell, Hourigan, & Waters, 2013). In particular, mothers who displayed less warmth during the instructions phase would display more control within the task (Burton, 2012). Also, mothers of young people with OCD were considered to attribute responsibility to their child more for solving the task and hence enhance inflated responsibility for their child, than mothers of controls (Farrell et al., 2013). All authors suggested that their findings supported the role of maternal promotion or enhancement of responsibility, within children.

Whilst there is support for the theory of inflated responsibility (Salkovskis et al., 2000), there appears to be uncertainty about whether inflated responsibility exists exclusively or is a type of metacognition and therefore explained within the metacognition literature. In general, research has identified inflated responsibility as a construct which determines OCD symptoms. Correlational studies tend to use smaller non-clinical samples which can make findings difficult to generalise to clinical populations. While experimental research seems somewhat inconclusive as, although the design of such studies can allow for causality to be investigated, the

manipulations do not tend to replicate common situations so cannot be considered valid to everyday life. As previously mentioned, discrepancies between study findings may also be due to the low power of experimental manipulation designs, and the use of different populations.

1.4.5   Environmental theories: The role of the family in OCD.

Child and adolescent OCD has strong genetic underpinnings (Van Grootheest et al., 2007), as well as a number of other theories which support our understanding of OCD, and have been discussed. However there is increasing evidence to suggest that family factors may have a role in shaping the development and prognosis of OCD (Renshaw et al., 2005). Although there appears to be an increased prevalence of OCD in first degree relatives, which can be explained by genetics (see section 1.4.1), environmental factors such as the experiences of parenting may also contribute to the prevalence of OCD. The family environment, and in particular the parental relationship, has been considered to provide a learning experience which may relate to development of child anxiety. Therefore, the parent-child relationship and parenting styles, including factors which may impact upon these, are discussed further within the sections 1.4.5.1 to 1.4.5.2 and measures relating to assessment of the parent-child relationship are also explained. In addition, there is considerable interest in how family processes and behaviours may contribute to the persistence and maintenance of OCD symptoms, namely the accommodation of the OCD symptoms. More general influences of the family environment and family accommodation are therefore outlined within section 1.4.5.3.

1.4.5.1 Parent-child relationship and parenting styles.

Behavioural genetics research has indicated that the development
and outcome of externalising disorders is significantly influenced by the
experienced environment, including parental monitoring and discipline
(Wamboldt & Wamboldt, 2000). Within longitudinal twin studies,
environmental influences on the development of a number of disorders have
been explored. This has included aspects of parental criticism, negativity,
coldness, emotional over involvement and warmth (Marceau et al., 2013;
Moberg, Lichtenstein, Forsman, & Larsson, 2011; Narusyte et al., 2011;
Otowa, Gardner, Kendler, & Hettema, 2013; Tandon, Tillman, Spitznagel,
& Luby, 2013). Findings have included identification of a causal
relationship between a mother's emotional attitudes toward her children and
the development of antisocial behaviour (Caspi et al., 2004). These studies
have demonstrated how we can understand the development of skills and
habits, necessary to participate within society using genetically informative
research.

Within the anxiety literature, several studies have examined the role
of attachment in the development and maintenance of anxiety disorders.
Insecurely attached children have been shown to be more likely to
experience anxiety disorders and symptoms of anxiety than securely
attached children (Brown & Whiteside, 2008; Brumariu, Kerns, & Seibert,
2012; Chorpita & Barlow, 1998; Madigan, Atkinson, Laurin, & Benoit,
2013). The anxiety literature has proposed that parent-child transference of
beliefs about the world, is bidirectional or reciprocal in nature (Ginsburg &
Schlossberg, 2002; Hughes & Gullone, 2008; Last, Hersen, Kazdin, Francis,

& Grubb, 1987) and not disorder specific (Eley, 2001). A review of the anxiety literature identified key learning mechanisms relevant to the parent-child relationship and highlighted risk factors for the development of child anxiety, namely modelling (learning vicariously), information transfer and reinforcement of anxious and avoidant behaviours, (Fisak & Grills-Taquechel, 2007).

Myher, Sookman, and Pinard (2004) investigated these issues with adults with OCD, and concluded that adults with OCD had more insecure attachments than a non-clinical group. It was therefore postulated that an insecure attachment may predispose children to develop OCD. Investigating this further, Rezvan et al. (2012) assessed 221 girls with OCD (age 10-12 years) and found the level of attachment insecurity to be strongly associated with OCD symptoms. Subcategories of attachment, such as trust, communication and alienation were reported to predict a large amount of the variance in OCD symptoms, with parent-child communication to be the strongest predictor.

Further research looking at cognitive-affective vulnerabilities and the development of the internal working model (Holmes, 2012) have further explored the possible role of attachment in the development of OCD. Doron and Kyrios (2005) proposed that early parenting experiences lead to the development of a 'dysfunctional self-structure' and world-view relevant to OCD. Others identified the parent-child interaction as an environment within which OCD symptoms may be worsened by parents reinforcing avoidant coping mechanisms to manage threat (Barrett, Rapee, Dadds, & Ryan, 1996; Chorpita, Albano, & Barlow, 1996). This is supported further

by findings that the parents of children with OCD held similar beliefs to their children, about the world being 'threatening' or 'dangerous' (Salkovskis et al., 1999). Further evidence of this exists within the literature exploring the transmission of mental health symptomology between parent, generally the mother, and child. Within this literature both genetic and environmental factors have been shown to be accountable within the transmission process in the development of depression in young people (Silberg, Maes, & Eaves, 2010) and anxiety (Murray, Creswell, & Cooper, 2009). Within the field of anxiety two methods of transference are proposed, namely modelling and information acquisition (Bandura, 1977; Fisak & Grills-Taquechel, 2007; Mineka & Zinbarg, 2006; Moore, Whaley, & Sigman, 2004; Rachman, 1990). Modelling refers to the observation of others and this has been demonstrated within retrospective studies exploring the development of phobias (Fisak & Grills-Taquechel, 2007; Mineka & Zinbarg, 2006). Modelling has also been observed within studies of parents and infants, where maternal fear and disgust led to the same responses in the infants (De Rosnay, Cooper, Tsigaras, & Murray, 2006; Gerull & Rapee, 2002). Information acquisition refers to the communication of information about the environment, which relates to threatening properties. The instructions and information the parent shares are considered influential in the development of anxiety within the child (Hadwin, Garner, & Perez-Olivas, 2006) and anxious parents have been shown to be more likely to make catastrophic statements to their children (Moore et al., 2004).

Within the field of OCD a number of studies have looked at transference of OCD anxiety and OCD symptoms or constructs such as

inflated responsibility (Lenane et al., 1990; Rector, Cassin, Richter, & Burroughs, 2009; Riddle et al., 1990; Waters & Barrett, 2000). Findings within the OCD and broader literature suggest a relationship between parent psychopathology and the development of child psychopathology which is developed through interactions between the parent and child. This is explained further in section 1.4.5.2. However, it has also been suggested that increased stress for the parent, due to the young person's symptoms, may impact parental wellbeing (Laidlaw, Falloon, Barnfather, & Coverdale, 1999; M. Smith, 2004; Vostanis et al., 2006).

Within the child anxiety literature, child rearing practices (the behaviours a parent adopts in order to parent their child) have also been suggested to impact upon child adjustment and general functioning, and are considered to play a significant role in the development of anxiety disorders (Rapee, 2011). Brown and Whiteside (2008) investigated relationships between perceived parental rearing behaviours, attachment style and worry in anxious children (n = 64). They found an association between ambivalent attachment style and worry. Parenting style, namely rejection, was also found to make an independent contribution to worry. Over protection, emotional warmth and anxious rearing were not significantly associated with worry. However, the study had a number of limitations, including the reporting the parental rearing and attachment information being completed by children (7 − 18 years). This could have created a bias or unrepresentative scores. Additionally, reliability of the children's responses could not be tested as only one measure was used. Further research should

therefore use multiple methods to rate attachment or it should be rated independently by a researcher.

Although there is limited research about the impact of parenting on the development of OCD, Timpano, Keough, Mahaffey, Schmidt, and Ambramowitz (2010) looked at the link between three parenting styles (1) permissive, (2) authoritative, and (3) authoritarian, and obsessive-compulsive beliefs and symptoms within a non-clinical population (n = 221). They found that an authoritarian parenting style was significantly associated with obsessive compulsive symptoms and beliefs about personal responsibility and importance of thoughts. Replication within a clinical population could offer more validation and progress the understanding of causality.

Haciomeroglu and Karanci (2013) also explored the role of parenting within a non-clinical student population (n = 300). They found perceived mother overprotection, responsibility attitudes and life events significantly predicted symptoms of OCD. More importantly, they found responsibility attitudes of the adult child mediated the relationship between OCD symptoms and perceived mother overprotection.

Within clinical populations, Salkovskis et al. (1999) hypothesised that parental emotional over involvement (EOI) and criticism play a role in the development of OCD. The predominance of literature looks at EOI which is characterised by exaggerated emotional response, over intrusive or self-sacrificing behaviour and over identification with the individual (Magana et al., 1986; Vaughn & Leff, 1976). Some evidence has suggested that young people with OCD perceive their mothers as more over protective

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than young people with depression (Merkel, Pollard, Wiener, & Staebler, 1993). Merkel et al. (1993) compared how 320 individuals with OCD (n = 105), depression (n = 139) or panic (n = 76), perceived their parents through the selection of adjectives from a list. Patients with OCD were less likely to perceive their mothers as disorganised than individuals with depression. Patients with OCD were also less likely to perceive their fathers as demanding compared to individuals with panic.

Further literature has looked at the role of parental criticism and constructs related to it, such as hostility, within the field of OCD. Criticism refers to comments about the individual (their behaviour or characteristics) which indicate a sense of annoyance or frustration. Hostility refers to the general criticisms or expressions of attitudes that are rejecting of the individual (Magana et al., 1986; Vaughn & Leff, 1976). Hibbs et al. (1991) found high criticism to be frequent in parents of children with OCD. Chambless, Bryan, Aiken, Steketee & Hooley (2001) used structural equation modelling to consider the role of criticism and hostility using the Camberwell Family Interview (CFI; Vaughn & Leff, 1976) within families of adult patients with panic disorder with agoraphobia (n = 42) and OCD (n = 60). Relatives of OCD patients reported more angry thoughts, feelings and behaviours which were directly linked to hostility towards the patient, which in turn is likely to have an impact upon the illness.

To date, there has been little attention given to any positive constructs within the parent-child relationship and OCD, such as warmth, and within this empathy, or other positive relationship indicators. Recently, Farrell et al. (2013) observed behaviours during a mother and child

problems solving task within an OCD (n = 12) and non-clinical (n = 16)

child sample (age 8 – 12 years). Behaviours were coded based upon

warmth, autonomy, confidence and responsibility. Behaviours between

groups did not differ based upon the categories, however mothers of

children with OCD were considered to significantly enhance responsibility

in the child more than in themselves. As a consequence, the child with OCD

was seen as being responsible for completing the task. This may offer some

support to the hypothesis of a relationship or transference between parent-

child responsibility with OCD (Burton, 2012; Pietrefesa, Schofield,

Whiteside, Sochting, & Coles, 2010; Rachman, 1993; Salkovskis et al.,

1999). Within this study, the overall quality of the relationship of the OCD

dyad was also significantly less positive than the non-clinical dyad. This

finding is similar to Barrett et al. (2002) and Lennertz et al. (2010) who

identified less warmth to be a characteristic of both the parent-child

relationship and wider family, within OCD populations. To date, areas of

warmth, positive relationship indicators and related constructs remain an

area which is under researched. A number of limitations have been

identified within existing studies, including difficulty comparing or

generalising findings. More research addressing limitations, such as sample

size and robust methods of measurement, would be of benefit in developing

understanding of the role of the child-parent relationship, especially within

the child and adolescent populations, where studies are particularly sparse

but perhaps most relevant.

1.4.5.1.1 Measures of the parent-child relationship

To enable exploration of the role of the parent-child relationship a number of methods have been developed to measure expressed emotion (EE). The initial measure of this was the Camberwell Family Interview (CFI; Vaughn & Leff, 1976), which is a semi-structured interview, conducted with an individual's key relative. The typical length of the interview is between one and two hours and conversations are rated on five scales: criticism, hostility, emotional over involvement (EOI), warmth and positive remarks. It is on the basis of the first three scales that relatives are then rated as high EE or low EE.

Although the CFI has good reliability and validity (Bentsen et al., 1996; Hooley, Orley, & Teasdale, 1986; Mueser, Bellack, & Wade, 1992; Scott & Campbell, 2000), training takes between 40 and 80 hours. It also takes a significant amount of time to administrate (1-2 hours) and score (2-3 hours). For this reason, the CFI can often be a cumbersome tool by which to measure EE.

The Five Minute Speech Sample (FMSS; Magana et al., 1986) was developed as a shorter measure of expressed emotion, from the CFI (Vaughn & Leff, 1976). The FMSS is an audiotaped measure that requires a parent or relative to speak for five minutes about their child. The FMSS was designed for use with parents of adult children suffering from schizophrenia, however it has been used increasingly within adolescent psychiatric populations (Frye & Garber, 2005; Gar & Hudson, 2009), including amongst an adolescent OCD population (Peris, Yadegar, Asarnow, & Piacentini, 2012). Attempts have also been made to adapt this measure for

use in family therapy and enable assessment of the changes in emotional

expression within the therapeutic environment (Berkowitz, 1987; Vostanis,

Burnham, & Harris, 1992).

Similarly to the CFI, the FMSS requires coding on a number of

aspects of the speech sample, see Table 1.2. The FMSS is reported to have

acceptable reliability and validity in a number of populations (Kaugars,

Moody, Dennis, & Klinnert, 2007; Leeb et al., 1991; Malla, Kazarian,

Barnes, & Cole, 1991; J. B. McGuire & Earls, 1994; Shimodera et al.,

2002).

More recently, the Preschool FMSS (PFMSS; Daley, 2001) was

developed. The PFMSS is an adapted version of the FMSS, for use with

preschool age children (Daley, 2001). Adaptations were made to the FMSS

in an attempt to improve validity for use with parents of younger children,

how the PFMSS relates to the CFI is not known.

The PFMSS has six scales which are outlined in Table 1.3. Warmth

and positive remarks, which were both measured within the CFI, but not in

the FMSS, are additional scales within the PFMSS.

The Preschool FMSS is reported to have acceptable code-recode

reliability (r = .80 - .92) and inter-rater reliability (r = .76 - .91), and

adequate test-retest reliability (r = .76 - .91) based upon the various

constructs of the measure (Daley, Sonuga-Barke, & Thompson, 2003).

Table 1.2

Coding Categories for the FMSS

Category	Rating type	Aspects included in FMSS
Initial statement	Global	The first complete thought or idea expressed by the relative about the patient, which is rated as positive, negative or neutral.
Relationship	Global	This is based upon complete remarks which refer to the relationship between the relative and patient. Statements are defined as either strong positive, weak positive, weak negative or strong negative. A combination of these statements gives an overall rating.
Emotional over-involvement	Global	This is separated into global and frequency parts. Self-sacrificing/over protective behaviour, emotional display and excessive detail statements used to code global rating. Frequency counts were used for statements relating to emotional over involvement and positive remarks.
Critical comments	Frequency count	Statements which show unambiguous dislike, disapproval or resentment of the personality or behaviour of the patient. Coding of statements is based on tone and/or content.

Table 1.3

Coding Categories for the PFMSS

Category	Rating type	Aspects included in PFMSS
Initial statement	Global	The first thought expressed by the parent about their child.
Warmth	Global	This is based on a parent's expression about their child. Intensity of sentiment or feeling is rated; based upon tone, spontaneity, concern and empathy.
Relationship	Global	This is an assessment of the quality of the relationship and joint activities completed by parent and child. The rating is based upon parent's report of time with their child that they value/enjoy.
Emotional over-involvement	Global	This scores the emotional relationship between the parent and the child, based upon self-sacrificing, over-protective behaviour and lack of objectivity.
Critical comments	Frequency count	These concern statements which criticise or find fault with the child. These are based on tone and phrase.
Positive comments	Frequency count	Statements of praise or appreciation, based on tone and phrase.

Although factors are coded separately and are distinctly different within these measures these constructs cannot be considered to be mutually exclusive as family members can be both critical and warm in nature. Within the literature the degree to which this relationship exists has been considered to be influenced by cultural differences (López et al., 2004; Wig

et al., 1987). Wig et al (1987) suggested that in Anglo-American populations criticism and warmth bear a different relationship to one another. That is, the more critical an individual, the less warm they are likely to be. Whereas within non Anglo-American cultures high warmth can be associated with both high and low criticism (Wig et al., 1987) as well as a significant protective factor in relation to wellbeing (López et al., 2004).

As can be seen, parent-child relationships are often dynamic. Of particular importance is to note that although there may be differing constructs of the parent-child relationship, they are not mutually exclusive as a parent can be both critical and warm (López et al., 2004; Wig et al., 1987). There have been a number of studies which have explored the parent-child relationship and considered influences upon it, some of which are discussed in further detail within the following section.

1.4.5.2 Factors effecting the parent-child relationship and parenting styles.

Parenting is considered to be a multifactorial process (Belsky, 1984), with no single element solely responsible for the method or style of interaction. However, there are a number of factors which may influence the parent-child relationship, including characteristics of the child, such as their sex (Chaplin, Cole, & Zahn-Waxler, 2005) and temperament (L. A. Clark, Kochanska, & Ready, 2000) , parental mental health (Hibbs et al., 1991), parental personality (Kochanska, Friesenborg, Lange, & Martel, 2004) and the martial/partner relationship (Harrist & Ainslie, 1998). The parent's own developmental history, including their own experiences of being parented has also been investigated. Much of this literature explored the role of

abusive and harsh parenting upon a parent's own parenting style (Belsky & Jaffee, 2006; C. A. Smith & Farrington, 2004) rather than the transmission of constructive or helpful parenting styles.

Within the context of parental psychopathology, mothers with schizophrenia have been shown to be more remote, self-absorbed and insensitive (Riordan, Appleby, & Faragher, 1999), while mothers with depression have been shown to be more hostile and critical about their child (Brennan, Hammen, Katz, & Le Brocque, 2002). Finally, parents who are anxious have demonstrated over protective parenting, rejection and have been found to be less warm (Lieb et al., 2000; Moore et al., 2004).

Within the context of OCD, parental psychopathology has been explored within several studies. Parents of children and young people with OCD appear to have higher rates of mental health disorders than parents of children with other mental health diagnoses (Calvo, Lazaro, Castro, Morer, & Toro, 2007; Derisley, Libby, Clark, & Reynolds, 2005). Derisley et al. (2005) compared parents of young people with OCD (n = 28), anxiety disorders (n = 28) and non-clinical controls (n = 62) on symptoms of mental health, family functioning and coping styles. Parents of young people with OCD and anxiety were found to have poorer mental health than parents of non-clinical young people. Parents of young people with OCD and anxiety also used more avoidance strategies to cope. However, the cross-sectional nature of the study and relatively small sample sizes limit interpretability. The findings failed to ascertain the direction of the relationship and whether parent mental health symptoms and coping strategies pre-dated the OCD symptoms of the young person. However, a more realistic hypothesis may

be that parental mental health and coping strategies play a role in the maintenance of the young person's OCD symptoms, but further research is required.

Calvo et al. (2007) found mothers of young people with OCD (n = 32) had significantly more psychiatric diagnoses than parents of matched norms and the parents (n = 63) of young people with OCD, had more psychiatric diagnoses (which included OCD) when compared to a matched control group. The emergence of these parental diagnoses appeared to relate to the duration of the young person's OCD. This may support the suggestion that OCD symptoms or diagnosis in the child puts parents at risk of developing mental health symptoms.

Peris et al. (2008) found parental psychopathology to be associated with greater involvement in young people's OCD rituals, but again it appears unclear whether the parent's mental health symptoms increase the likelihood of the parent becoming involved in the young person's rituals or whether an increased involvement in the young person's rituals increases the likelihood of a parent developing mental health symptoms. Further research is required to enable a better understanding of the relationship between parental mental health, parent-child relationship and the emergence of OCD symptoms in the child.

Personality traits in parents have also been speculated to play a role in the development of OCD in children (Barlow, 1988; Calvo et al., 2009; Rachman, 1976). Mothers of young people with OCD are thought to have more personality disorders, in particular avoidant personality disorder and Obsessive Compulsive Personality Disorders (OCPD; Calvo et al., 2007).

OCPD was found by Calvo et al. (2009) to be more prevalent in parents of individuals with OCD. The authors also found specific personality factors to be present in the parents of OCD children when compared to parents of healthy children. OCD parents were found to have significantly higher levels of harm avoidance and lower levels of self-directedness, cooperativeness and reward dependence. They were also found to have a higher frequency of hoarding, perfectionism and preoccupation with details.

In summary, the presence of parental psychopathology and personality factors are likely to impact upon the parent's perception of themselves, others and the world around them. This then influences how the parent behaves and how they may interact with or parent their child. In turn this will contribute to the child's development of their internal working model (Holmes, 2012) and may impact the child's ability to regulate emotions effectively.

1.4.5.3 Family environment and accommodation.

Within mental health there is evidence to suggest that the family environment may play a role in the development of a number of conditions. Family environments with heightened conflict and aggression have been considered to pose the most risk for family members to develop mental health difficulties and have also been associated with increased risk of substance abuse, chronic disease and early mortality (Repetti, Taylor, & Seeman, 2002).

Within an adult OCD population, Lennertz et al. (2010) identified rejection and control to be further characteristics of OCD families (n = 122). Within the field of child and adolescent OCD, there is a small amount of

literature looking at conflict and family cohesion. Recent studies have (Peris et al., 2008; Peris, Sugar, et al., 2012) found families containing a young person with OCD to display high levels of conflict and low levels of family cohesion, this being the emotional bonding that family members have between one another. Disengagement or lower cohesion within the family and prevalence of OCD was also found within a community sample (n = 488) of mother-child pairs (Valleni-Basile et al., 1995). Although Valleni-Basile et al. (1995) examined a number of family and psychosocial predictors of OCD, family cohesion was the only one to correlate significantly within multivariable models- where all models were tested together. Sex, race, age, socio-economic status, guardian status, adaptability, undesirable life events and desirable life events were not found to be significant predictors of OCD. 'Family culture' has also been examined by Hoover and Insel (1984, p. 200) who suggested that "super cleanliness, over-meticulousness, and perfectionism……beyond the ordinary" are factors which may be influential in the development of OCD.

Family accommodation has been identified as a key maintaining factor of OCD (Barrett et al., 2002; Peris et al., 2008; Storch et al., 2007). Accommodation refers to the behaviours of family members which mean they participate in rituals or provide reassurance. For example, assuring the young person that nothing bad will happen or complying with the checking rituals. Although this is done with good intention, often as a way to reduce distress for the young person, more often than not this reinforces the young person's involvement in compulsions, and reinforces the obsessions that drive them. This also has a negative impact upon the family, as symptoms

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become worse and increase the likelihood of problematic family functioning

and relationships (Steketee & Van Noppen, 2003). A perceived lack of

control of external events has been shown to be dominant in families with a

young person with OCD (Capps, Sigman, Sena, Heoker, & Whalen, 1996;

Chorpita & Barlow, 1998) and this perceived lack of control can maintain or

worsen symptoms.

The Family Accommodation Scale (FAS) for OCD was developed

by Calvocoressi et al. (1999) to assess the relationship between family

distress and accommodation. This was administered to adult OCD patients

and their care givers (n = 36 dyads). The results of this study indicated a

correlation between family accommodation, the severity of OCD symptoms

and the functioning of the individual with OCD. The carers' own OCD

symptoms were also associated with the accommodation of symptoms. The

measure was shown to have good reliability and validity and has been used

within subsequent studies to assess family accommodation in the OCD

population. Storch et al. (2007) assessed the relationship between family

accommodation, OCD symptom severity, functional impairment and

behaviour problems (i.e. internalising and externalising) in young people

(age 7 – 17 years) with OCD (n = 57). The authors found that

accommodation of OCD symptoms was frequent among families. Higher

levels of family accommodation, as rated by parents, was found to be

related to greater OCD symptoms, behavioural problems and functional

impairment. Peris et al. (2008) looked at influences of the parent, child and

the family, in relation to the accommodation of paediatric OCD. Sixty five

young people and their parents completed a number of standardised clinical

and self-report questionnaires. Family accommodation, by parents, was found to exist on a daily basis, most frequently in the provision of reassurance (56%) and ritual participation (46%). Higher parent involvement in rituals was associated with worse OCD symptoms and lower levels of family organisation. However, findings of these studies should be considered with caution, given the cross-sectional nature of the studies and multiple testing approaches. The sample sizes are also limiting, as they do not enable advanced statistical modelling to look at specific contributions of the child, parent and family, due to the lack of power. However, the accommodation of OCD symptoms appears to be the norm, and has been replicated by several other groups (Albert et al., 2010; Amir, Freshman, & Foa, 2000; Farrell & Barrett, 2007; Lebowitz, Panza, Su, & Bloch, 2012; Storch et al., 2007; Waters & Barrett, 2000). Family accommodation of OCD symptoms has been shown to play a significant role in the maintenance of OCD. In addition to these findings, lower levels of family accommodation and significant reductions in family accommodation during treatment, have been associated with better treatment outcome in OCD (Lebowitz et al., 2012; Merlo, Lehmkuhl, Geffken, & Storch, 2009).

Further to this, Renshaw, Chambless and Steketee (2006) found that relatives who made greater attributions that their relative with mental illness was responsible for their behaviour, and therefore, were able to control it, expressed more hostility towards their relative with mental illness. They considered this finding in relation to treatment response, comparing individuals with panic disorder with agoraphobia (n = 42) and OCD (n = 62). Where relatives attributed greater responsibility for behaviour toward

the patient, there tended to be less responsiveness to behavioural therapy, compared to those whose relatives did not make this attribution, indicating the potentially powerful role relatives can play in the prognosis of OCD. However, the authors have highlighted a number of weaknesses, including a predominantly male sample and also a small sample size. Also, no causal relationship could be considered due to its correlational design. The authors proposed that the knowledge that participants were being observed completing the CFI may have led to discrepancies in the data collected and this could have influenced findings. It was also noted that a bias could have been created as those who were excluded, due to damaged or missing recordings, were less critical compared to the sample average of the sample. Nonetheless, this study and other similar ones have added to the small yet growing evidence base linking relative criticism and OCD. Given that perceived criticism has been linked to higher rates of relapse and worse outcome (Barrowclough & Hooley, 2003) further research would be valuable.

1.4.6   Interim summary.

OCD in childhood is a disabling disorder effecting at least 1% of the population and has a huge impact upon young people's families. As can be seen, OCD is a complex interaction of biological, psychological and social constructs and it would seem no single factor can be exclusively causal in its development. Within child and adolescent OCD, recent literature has placed more emphasis upon the social factors, as research moves towards enhancing understanding of the predictive factors of OCD. Aspects relating to the parent-child relationship have been explored, although much of the

emphasis has been on the more negative aspects of this interaction, such as criticism. Existing research within the child and adolescent OCD population, has failed to look at protective factors this relationship may offer such as warmth. As warmth is difficult to code explicitly due to being comprised of a number of factors, an element of it such as empathy may be a useful construct to explore within initial research. This seems important to explore in order to enhance our understanding of OCD.

Treatment with or without the family does not appear to differ in relation to outcome (Reynolds et al., 2013), however treatment is not acceptable or effective for all, therefore the development of a better understanding of factors effecting outcome may enable treatment for OCD in young people to be reconsidered. Further research involving family factors, OCD symptoms and treatment, would help better inform treatment interventions and the potential for earlier intervention or preventative interventions. Aspects relating to environmental factors, OCD symptomology and treatment response are therefore considered further within the following sections.

1.5 The Relationship between Parental Psychopathology, Parent Relationship Indicators (Criticism and Empathy), Child Inflated Responsibility and OCD Symptomology: Current Research

1.5.1 Parental psychopathology and parent relationship indicators (criticism and empathy).

As previously discussed, there are a number of factors which may influence the parent-child relationship, including a parent's own experiences of being parented (Rice, Lopez, & Vergara, 2005), the gender of the child

(Chaplin et al., 2005) and parental mental health (Hibbs et al., 1991). These have been explored within the broader literature as well as within the field of child and adolescent OCD. Within this section, specific links between parental psychopathology (i.e. parental mental health) and parental criticism are discussed, followed by the relationship between parental psychopathology and parental empathy within the field of OCD.

Criticism has been considered difficult to define due to its complex nature (Pace, Thwaites, & Freeston, 2011). It has been suggested to be both positive and negative in nature (Baron, 1993; Tracy, Van Dusen, & Robinson, 1987) but recent research suggests that most people interpret it as a negative construct (Renshaw, Blais, & Caska, 2010) which is considered to be harsh, unpleasant and inconsiderate (Baron, 1993).

Within the context of parental psychopathology and criticism, cognitive appraisals considered to span across the anxiety disorders, namely perfectionism (S. Clark & Coker, 2009) and mental health symptoms, for example depression (Frye & Garber, 2005; S. H. Goodman, Adamson, Riniti, & Cole, 1994) have been linked to parents who exhibit more critical parenting. High expressed emotion (EE), of which criticism forms a key role, has been found to be significantly related to psychiatric disorders in parents of young people with OCD (Hibbs et al., 1991). Hibbs et al. (1991) looked at aspects which may determine EE in families of children with disruptive behaviour disorder (DBD, n = 34) and OCD (n = 49) compared to normal controls (n = 41). They found parental psychopathology to be a robust predictor of EE in parents of children with OCD. However a more recent study, which again used an OCD population (n = 58), failed to find a

relationship between parental psychopathology and criticism (Peris, Yadegar, et al., 2012). Within this study, a significant relationship existed between depression and high EE, however this was associated with emotional over involvement, rather than criticism. The authors failed to consider why this was. The findings are inconsistent with the majority of the existing literature, especially relating to parental depression and criticism, however this may be due lack of variability in mental health symptoms among the parent sample or due to breaking down the EE construct to allow for better exploration of the relationships. Further research is therefore important to clarify the role of parental mental health and criticism.

With regard to empathy, it is defined as 'the understanding and sharing in another's emotional state' (Psychogiou, Daley, Thompson, & Sonuga-Barke, 2008, p221). It is composed of cognitive and affective elements. The cognitive elements involve understanding another's point of view and the affective elements relate to the ability to experience the emotions consistent to another's point of view, such as sympathy, upset and compassion. There is a relationship between parental empathy and parental psychopathology, which may have an effect upon the parent-child relationship. For example, Longfellow, Saunders and Zelkowitz (1981) found that depressed mothers were inclined to attend to their own feelings when their child misbehaved, and compared to non-depressed mothers, treated their children more harshly. Within a non-clinical sample of mothers (n = 268), Pscyhogiou et al. (2008) completed a questionnaire based study and found parental empathy to correlate negatively with maternal ADHD

symptoms and maternal aggressive symptoms, while there was no relationship between maternal empathy and maternal depression.

While there is some evidence of a relationship between parental empathy and parental psychopathology, which could have effects upon the parent-child relationship, no studies to date have looked at these relationships within families where a child has OCD. Much of the literature therefore draws upon findings within broader populations and applies it to OCD populations. Findings by Barrowclough and Hooley (2003) relating to the attributions parents give to mental health behaviours in their child may also help us to consider the role of parental empathy within the OCD population. Where relatives considered behaviours of the young person to be ones they could control if they wished, this was associated with greater parental hostility and/or criticism. However, the attribution in itself demonstrated a lack of understanding of the others emotional state. As a clear link exists between psychopathology and greater criticism in relatives of individuals with OCD, we might predict that inflated psychopathology in relatives of psychiatric patients may reduce their ability to be empathic, in line with the broader literature. However this requires further investigation, as well as consideration of the impact this may have upon levels of OCD symptomatology within young people.

1.5.2 Parent relationship indicators (criticism and empathy), inflated responsibility and OCD symptomology.

Sections 1.5.2.1 and 1.5.2.2 consider the role of parent relationship indicators and specific facets of OCD. Initially, the relationship between criticism and inflated responsibility in the young person is considered, and

this is broadened to consider the relationship between criticism and specific OCD symptoms experienced by the young person. A possible relationship between parental empathy and inflated responsibility in the young person is discussed, and possible OCD symptoms which may be associated with parental empathy are explored. Where relevant, broader literature related to the constructs of parental criticism and empathy are considered in relation to inflated responsibility and OCD symptoms.

1.5.2.1 Parental criticism, inflated responsibility and OCD symptoms.

Criticism and responsibility have been considered to be linked due to the idea that the actions for which an individual is responsible may be likely to produce criticism or guilt if not completed or done incorrectly (Rachman, 1976). Rachman (1976) considered that where responsibility for an action decreased so may the possibility of being criticised. However, little literature exists that explores either relationship. There are only two experimental studies which explicitly look at the relationship between criticism and inflated responsibility (Lopatka & Rachman, 1995; Pace, Unpublished). While Pace (Unpublished) did not report any significant relationship between parental criticism, responsibility and OCD symptoms, Lopatka and Rachman (1995) found that creating manipulations of higher responsibility led to significant increases in the perception that individuals with OCD (n = 30) would be criticised, while the opposite was the case for those with lower responsibility manipulations. Overall, the severity of anticipated criticism decreased after perceptions of responsibility decreased. However, a visual analogue scale (0-100) was used to rate anticipated

criticism and severity, which may have been less robust than standardised rating scales. The exact construct of criticism that was measured within the study also remains unclear, as one might argue that elevated levels of perception of criticism may be indicative of an existing critical parental relationship, but this can only be hypothesised.

Hooley's attributional model of expressed emotion (1987) may help in understanding this relationship further. Hooley suggested that family members' attributions of the patient's symptoms (which are associated with mental illness) are linked to high EE (which includes criticism). In particular, where family members see the patient's symptoms as within their control and therefore responsible for them, family members will be more likely to blame patients for their symptoms and express critical views. It may therefore be hypothesised that as the patient experiences feelings of guilt, feeling blamed and being criticised by family members, this feeds into a sense of inflated responsibility, a relationship which has already been demonstrated within the literature (Rachman, 1993). Further research of this construct would be valuable in enhancing the understanding of the development of inflated responsibility. In doing so efforts should be made to use validated measures of criticism that may be comparable to the wider literature.

Salkovskis et al. (1999) suggested within the third pathway of inflated responsibility that specific compulsions may exist, namely checking and washing compulsions, due to fear of harm coming to loved ones. The role inflated responsibility has in increasing checking behaviours has been demonstrated within experimental studies (Arntz et al., 2007; Lopatka &

Rachman, 1995; Shafran, 1997). Mancini, D'Olimpio and Cieri (2004) examined the constructs of perceived personal influence (i.e. inflated responsibility) and expectation of failure within a normal population (n = 47) by experimentally manipulating subjects perceived personal influence. Increased perceived personal influence was found to be associated with slowness, hesitations and checks. Interestingly, expectation of failure was associated with an increase in obsessive like behaviours. This finding may indicate a relationship between fear of failure, which is related to the construct of criticism and compulsions. This study by Mancini et al. (2004) is similar to the earlier work by Turner, Steketee and Foa (1979) who found individuals with washing and checking compulsions to be more sensitive to fear of being criticised. Counting, ordering and cleaning compulsions in children with OCD have also been shown to significantly predict perfectionism and rigidity in their parents (Calvo et al., 2009). As parental perfectionism has been associated with criticism, (S. Clark & Coker, 2009), and given the limited research exploring the role of fear of being criticised in OCD symptomology (Mancini et al., 2004; R. M. Turner et al., 1979), we might therefore expect that checking and cleaning OCD symptoms may be observed in young people where their parent is more critical. In addition, there has been a growing literature relating to the role of guilt, in the completion of compulsions and in understanding the link between inflated responsibility and performance of compulsions (Mancini & Gangemi, 2004, 2006). Although links can be demonstrated within existing literature, there are no studies to date which explore the role of parental criticism and compulsions in OCD. Research into this would not only enable the testing

of an existing model (Salkovskis et al., 1999), but would also broaden the understanding of the role parental criticism has, if any, in OCD.

1.5.2.2 Parental empathy inflated responsibility and OCD symptoms.

Empathy has been conceptualised within the developmental literature about morality (Gibbs, 1991; Hoffman, 2001). Empathy enables an individual to consider the emotional experience of another and this is thought to develop from infancy (Thompson, 1987) and relate to pro-social behaviour. Developmental models of empathy suggest that opportunities for social-role taking, including interaction with parents and peers, drive the development of empathy and perspective-taking (Gibbs, 2014; Hoffman, 2000; Howe, 2013). There is evidence of a relationship between empathy, shame and guilt (Hoffman, 1983; Tangney, 1991), with shame being linked to personal distress while guilt has been shown to be linked to perspective taking (Leith & Baumeister, 1998). Leith and Baumeister (1998) found guilt prone individuals to be better at perspective-taking and that this produced better outcomes in relationships. However, there are a number of mechanisms which may lead to excessive guilt or empathy. Hoffman (Hoffman, 2000, 1983) has identified interactions within the parent-child relationship to be one such mechanism which may increase a child's sense of empathy and guilt.

Guilt and empathy are considered to be a reflection of feelings of responsibility for others (Leith & Baumeister, 1998). Within the OCD literature, inflated responsibility has been shown to be associated with guilt and have moral underpinnings (Rachman, 1993; Salkovskis et al., 1999).

With this is mind, it could be considered that empathy may play a role in OCD more specifically inflated responsibility.

Parents of children with OCD have been shown to hold similar beliefs which may develop from early experiences within the parent-child relationship (Salkovskis et al., 1999). In particular a transmission of inflated responsibility between parent and child has been demonstrated (Farrell et al., 2013) and boarder literature has suggested that where a parent is empathic their child is likely to develop a similar understanding of empathy (Psychogiou et al., 2008). Given that emapthy is a construct which has associations with inflated responsibility (Hoffman, 1983; Leith & Baumeister, 1998; Rachman, 1993; Tangney, 1991), due to similar moral underpinnings, it could be considered that parental empathy may play a role in the development of inflated responsibility within the young person. To date, no studies have explored the relationship between empathy and inflated responsibility. However, exploration of this relationship within a child and adolescent OCD population may help in understanding the development of the misinterpretation of thoughts. It may also help in the consideration of whether levels of empathy may act as an antecedent to inflated responsibility.

With regard to empathy and specific OCD symptoms, given the links between parent and child beliefs one might hypothesise, that where the parent demonstrates higher levels of empathy, similar beliefs may exist within the young person. In turn, this may result in obsessions which may be associated with empathic responses, such as a fear of harm coming to others. Fontenelle et al. (2009) conducted a study looking at the relationship

between empathy and symptom dimensions within an OCD population (n = 53) and compared these to a matched (age and sex) control group. Patients with OCD displayed greater levels of affective empathy, (i.e. empathy relating to concern and personal discomfort), compared to the controls. Fontenelle et al. (2009) found symptoms of hoarding to correlate positively with fantasy, the tendency for the individual to identify themselves in fictitious personages, books, films etc.; and personal discomfort, such as self-oriented anxiety and discomfort resulting from personal situations. In addition to this, empathic concern was shown to correlate positively with ordering and washing symptoms, and checking and hoarding. However, the most robust finding was the relationship between fantasy and hoarding. This study was unique at the time, and forms part of a very small evidence base looking at empathy and OCD symptoms. However, it is important to note that empathy ratings were those of the patients and not the relatives or parents. There were a number of additional weaknesses of the study including that the control sample was biased by selective recruitment, and both samples were small. OCD participants were also receiving treatment whilst participating in the study, although empathy may not be affected by treatment, constructs which may mediate the relationship between empathy and OCD, such as inflated responsibility, may have been influenced by treatment. Therefore future research should, where possible, be completed at or prior to the start of treatment. Doron, Sar-El and Mikulincer (2012) examined whether threat to moral self-perception could trigger contamination-related behaviours, using three independent non-clinical samples. An experimental approach tested out this relationship within three

smaller studies using the same three randomly assigned conditions, within each study. The results of the three studies were examined separately and combined. Participants were asked to complete a computer task within their assigned condition (morality, sports or neutral) and this was demonstrated to them by way of a graph, indicating their level of morality, sporting ability or neutral aspect. From here participants read five hypothesised actual physical contamination concerns and answered two questions regarding their urge to act and likelihood of acting. Answers were rated on a likert scale from 0 to 9. Within the morality condition (n = 43) individuals reported significantly more contamination-tendencies, compared to those in the sports or neutral condition. The second study (n = 152) found information, inferring the individual to be immoral, led to heightened contamination-related behaviours. Within study three, (n = 86) higher contamination-related behaviours were seen in participants who received the self-relevant negative morality condition. These findings demonstrated a link between an increased sense of personal morality and contamination behaviours. Although this study did not look at the role of parents in the development of morality, it may indicate that a link between parental empathy and empathy in the young person is plausible. However, looking at the specific link between parental empathy and empathy related obsessions, such as thoughts around harm coming to others, may help to ascertain whether this relationship indeed exists.

1.5.3 Interim summary

It would appear the parental psychopathology may influence a parent's ability to be empathic. The presence of mental health symptoms in

the parent may also enhance the risk of them being critical. It has also been considered, that the parent-child relationship, whether more critical or more empathic, may play a role in the development of specific symptoms of OCD which are underpinned by the young person's sense of inflated responsibility. However literature linking all these variables is limited. Given that the parent-child relationship appears to have the potential to significantly contribute to the possible development and maintenance of OCD in the child, researchers have become increasingly curious about the role of this relationship in treatment and more importantly treatment outcome. The following section considers this further.

1.6 The Relationship between Parent Relationship Indicators (Criticism and Empathy) and Treatment Outcome: Current Research

A number of studies exist which have explored the role of parent-child relationship indicators or expressed emotion in treatment outcome (Eisler, Simic, Russell, & Dare, 2007; Festen et al., 2013; Kronmüller et al., 2008; O'Brien et al., 2006; Tarrier, Sommerfield, & Pilgrim, 1999; Wamboldt & Wamboldt, 2000; Zinbarg, Eun Lee, & Lira Yoon, 2007) . For example, Tarrier et al. (1999) found high parental expressed emotion to be associated with fewer changes in symptoms of PTSD, following treatment. The authors found criticism and hostility to predict twenty percent of the outcome variance. Within the child and adolescent literature, high maternal negative affect and low warmth have been associated with worse outcome in treatment of anxiety (Festen et al., 2013). Within the broader literature the relationship between negative parent relationship indicators or expressed emotion and treatment outcome has been well researched, however fewer

studies have identified positive or helpful parental relationship indicators

and their role in treatment outcome. Within the field of psychosis it has been

suggested that a positive family environment is associated with

improvement of negative symptoms and parental warmth, of which emapthy

forms a key construct, is associated with improved social functioning

following treatment (O'Brien et al., 2006). Within the field of child and

adolescent OCD, the influence of parent-child relationship indicators or

expressed emotion on outcome is a relatively new area of exploration. The

following section explores the constructs of parental criticism and empathy,

and their role in treatment outcome in child and adolescent OCD, based

upon specific and broader literature.

1.6.1 Parent criticism and outcome in OCD treatment.

Very few studies currently exist which look at the association

between the parent-child relationship and treatment outcome in OCD. The

first study to consider this was Chambless and Steketee (1999) who looked

at the relationship between relatives expressed emotion and behavioural

therapy outcome within an adult psychiatric outpatient population (n = 101),

of which over half had OCD (n = 60) while the remainder had panic

disorder with agoraphobia (n = 41). Relatives included any English speaking

adult relatives living in the household with the patient. Expressed emotion

was measured using the CFI and patient perceived criticism, using the

Perceived Criticism Measure (PCM; Hooley & Teasdale, 1989). They found

that relatives' emotional over involvement and hostility predicted higher

rates of treatment drop out. Higher relative hostility was also related to

poorer outcome, based upon the symptoms targeted by treatment. Higher

perceived criticism, by the patient, was also associated with worse treatment response. However, non-hostile criticism on the CFI was associated with better outcome in relation to the behaviours that were impossible for the patients to do without significant anxiety, on the behavioural avoidance test. However, the study did not report separate findings for each of the psychiatric groups, therefore findings must be interpreted with caution as the significance in relation to patients with OCD remains unclear. Also the correlational nature of the study means that proof of a causal relationship cannot be determined. The authors also note that although the study adopted a longitudinal design, it is possible that some unknown characteristics of the patient might have led to both poor expressed emotion and outcome.

Within the child literature, more recent studies have looked at the role which relationship indicators play in treatment outcome. Przeworski et al. (2011) examined the relationship between parental criticism and response to treatment within a single group of 62 mother-child dyads where the child had OCD. They took a unique approach of assessing the child's perspective of maternal criticism. They also measured mother and sibling expressed emotion, child OCD severity and OCD-related functioning before and after treatment. Expressed emotion was measured using the Five Minute Speech Sample (FMSS; Magana et al., 1986) for mothers and an adapted Two Minute Speech Sample (TMSS; Marshall, Longwell, Goldstein, & Swanson, 1990) for the affected child and an unaffected sibling. OCD symptoms were measured using the Children's Yale-Brown Obsessive Compulsive Scale (CYBOCS; Scahill et al., 1997) and functioning by the Child Obsessive-Compulsive Impact Scale (COIS; Piacentini et al., 2003).

Participants received CBT, medication or a combination of the two. Overall the authors reported the presence of high expressed emotion from both parent and child. High Expressed emotion tended to be caused by high criticism. Symptom severity at the start of treatment was found to be associated with high maternal expressed emotion and high child expressed emotion about their father. Post treatment OCD functioning, as measured by the COIS, was predicted by high child and mother expressed emotion. The study was limited by a lack of a comparison group, either anxious or non-clinical. The authors also reported that maternal expressed emotion was only assessed due to the majority of mothers taking part in the assessments and further research would benefit from looking at fathers. Cultural generalisability of the findings was also considered a weakness as the whole sample was of Caucasian origin. Although the sample size was relatively small, so affecting the power of any findings, the study was unique and new within the field of child OCD literature.

Peris, Yadegar, et al. (2012) have most recently examined family climate as a predictor of treatment outcome in OCD, within a child OCD population (n = 58). Participants were taken from a larger randomised controlled trial (RCT) comparing family focused CBT with psychoeducation and relaxation training. Maternal expressed emotion was measured using the FMSS (Magana et al., 1986). OCD symptoms of the young person were assessed using the CYBOCS (Scahill et al., 1997) and functional impairment of symptoms was measured using the COIS (Piacentini et al., 2003). Parental mental health symptoms were measured using the Brief Symptoms Inventory (BSI; Derogatis, 1975). Mothers were

defined based upon high expressed emotion (n = 32) or low expressed emotion (n = 26). Peris, Yadegar, et al. (2012) found high maternal expressed emotion at the start of the treatment to be a significant predictor of poor treatment outcome, within the whole treatment sample. However, when looking at only the family focused CBT sample (n=41), links between expressed emotion and treatment outcome were no longer significant.

In contrast to Przeworski et al. (2011) expressed emotion at the start of the treatment was not found to be related to the child's OCD symptoms severity within the Peris, Yadegar et al. (2012)study. However, this was found to be associated with parental depressive symptoms. Maternal criticism correlated with parental blame and personal responsibility. Parental anxiety, depression and OCD were shown to be correlated with maternal emotional over-involvement. Due to the small sample size and the use of the TMSS to measure child expressed emotion, which has less validity than other measures such as the FMSS, findings should be interpreted with caution. The authors suggested undertaking future research to better understand the ways that expressed emotion may influence outcome. Given the role parental criticism may have in predicting outcome it could be considered that not involving these parents in treatment or developing a specific parental intervention may enhance outcome. However, further research is required to explore this given differences in findings, and to address limitations of existing studies.

1.6.2 Parental empathy and outcome in OCD treatment.

Within the broader literature some associations have been found between positive aspects of the parent-child relationship, such as warmth

and positive family environment, and improved outcome (Le Grange, Hoste, Lock, & Bryson, 2011; O'Brien et al., 2006).

Within the OCD literature it has been suggested that where young people with OCD live in families with higher cohesion and lower levels of parental blame and family conflict, response to treatment involving family members is likely to be better (Peris, Sugar, et al., 2012). However no studies have explored the role of parental empathy within this population. Within the adult OCD literature, Steketee (1993) found more positive treatment outcome to be associated with more empathic relatives. Within the study adults with OCD (n = 43) and significant others were interviewed about behaviours relating to emotional expression, including specific elements of OCD. Empathy of the relatives was rated during their interview, based upon their responses. This information was combined with the patient's responses relating to social interaction and interpersonal support. Although there were limitations to the study, such as the small sample size and lack of a valid measure of empathy, it was exploratory in nature and indicates that the presence of family members who are empathic may enhance treatment outcome, however further research would be beneficial.

1.7 Study Rationale

OCD is a debilitating mental health disorder which has a negative impact on many areas of functioning including family and peer relationships, as well as social and academic functioning (Amir et al., 2000; Cooper, 1996; Piacentini et al., 2003). It is important to understand the factors which contribute to the development of OCD and its maintenance. The role of the family in OCD maintenance and treatment response is of

particular importance, especially given the treatment recommendations regarding the inclusion of parents in treatment (National Institute for Health and Care Excellence, 2006) and support of this within the literature (Barrett, Healy-Farrell, & March, 2004; Waters, Barrett, & March, 2001).

Within the current literature, a number of gaps have been highlighted and inconsistencies found relating to the role of parental criticism in the prognosis of OCD, and few studies have explored the role of empathy in OCD. Although some of the existing literature helps to explain the links between parental psychopathology and criticism or empathy, there is limited literature to help in understanding the hypothesised roles that parental criticism and empathy have in the development of inflated responsibility and specific OCD symptoms. Additionally, none of the research has explored these constructs together or considered them in relation to parental involvement in treatment, within child and adolescent OCD populations. This highlights how the current study is both novel and addresses gaps within the literature.

1.8 Research Aims and Hypotheses

1.8.1 Research aims.

The main aim of this study is to see whether a relationship exists between parental relationship indicators (criticism and empathy) and outcome in OCD, and to consider whether this differs according to parental involvement in treatment. This will be done by using data from an existing randomised control trial (RCT). Relationship indicators will be determined retrospectively by coding therapy recordings where parents are present. A further aim of the study is to evaluate whether parental psychopathology is

associated with levels of parental criticism or empathy. Finally the study aims to explore associations between parent relationship indicators (i.e. criticism and empathy), inflated responsibility in the young person, and specific OCD symptoms. The addition of empathy forms part of an extension to the responsibility pathway proposed by Salkovskis et al. (1999) which proposed that parental criticism is a potential causal factor in OCD development, and is relatively under researched within the OCD literature. By looking at the relationship between these constructs, there may be clinical benefit in terms of treatment and relapse prevention, as well as developing a better understanding of the nature of child and adolescent OCD.

1.8.2 Research hypotheses.

The study hypotheses are outlined within sections 1.8.2.1 to 1.8.2.4 and illustrated in Figure 1.2.

Figure 1.2 A hypothesis testing pathway looking at the relationship between parental psychopathology, expressed emotion, inflated responsibility, OCD symptoms and treatment outcome.

Parental Psychopathology

↓

HYPOTHESES 1
Parental Criticism and Empathy

HYPOTHESES 3
Young person's OCD symptoms

HYPOTHESES 2
Inflated Responsibility

HYPOTHESES 4
Treatment Outcome
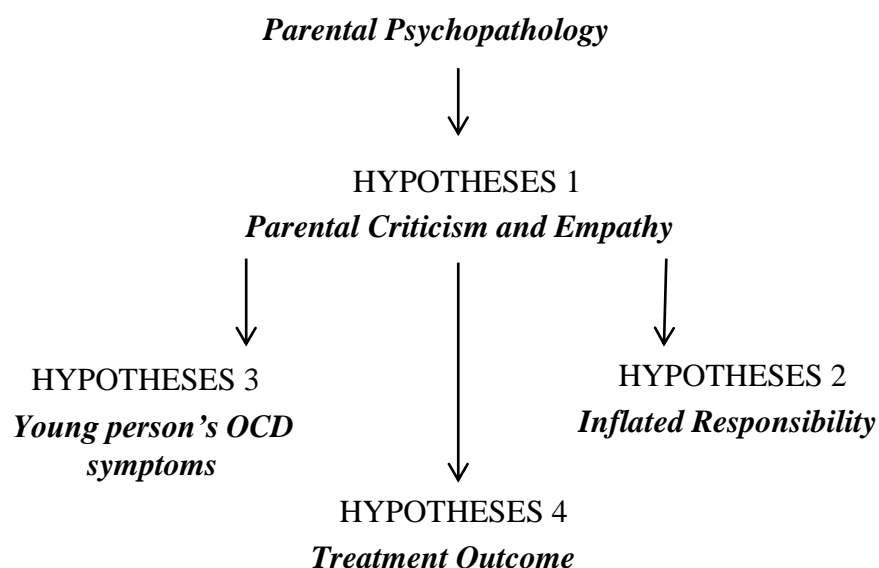
1.8.2.1 Hypotheses 1: Parental psychopathology will correlate with parent relationship indicators.

Hypothesis 1a: Higher parental psychopathology will be associated with higher parental criticism.

Hypothesis 1b: Higher parental psychopathology will be associated with lower parental empathy.

1.8.2.2 Hypotheses 2: Parent relationship indicators will correlate with the young person's inflated responsibility.

Hypothesis 2a: Parental criticism will correlate positively with inflated responsibility.

Hypothesis 2b: Parental empathy will correlate positively with inflated responsibility

1.8.2.3 Hypotheses 3: Parent relationship indicators will predict specific obsessions and compulsions.

Hypothesis 3a: Higher levels of parental criticism will predict those with washing and checking compulsions.

Hypothesis 3b: Higher levels of parental empathy will predict those with aggressive obsessions.

1.8.2.4 Hypotheses 4: Parent relationship indicators will correlate with outcome, and this will vary according to parental involvement in treatment.

Hypothesis 4a: Higher levels of parental criticism will correlate with worse outcome in young people with OCD.

Hypothesis 4b: Higher levels of parental empathy will correlate with better outcome in young people with OCD.

Hypothesis 4c: Higher levels of parental criticism will correlate with better

outcome in young people with OCD, where parents are not involved in

treatment.

Hypothesis 4d: Higher levels of parental empathy will correlate with better

outcome in young people with OCD, where parents are involved in

treatment.

CHAPTER TWO

2. Method

2.1 Overview

The chapter begins with a description of the study design, and thereafter the participants, measures, procedure, ethical considerations and plan of analysis are described.

2.2 Design

The study adopted a correlational design, and the data were taken from a RCT comparing individual CBT with parent-enhanced CBT for OCD (Reynolds et al., 2013), known as the Reducing Obsessions and Compulsions in Kids and Young people (ROCKY) trial. Both individual CBT and parent-enhanced CBT were manualised within the ROCKY trial, and this is discussed in more detail within section 2.5. The current study looked to compare a number of variables from the ROCKY trial with parental relationship indicators to assess the role they played in outcome for OCD. These variables included parent psychopathology, child inflated responsibility, and specific child OCD symptoms. The ROCKY trial took place within NHS Child and Adolescent Mental Health Services (CAMHS) in the East of England and participants received up to 14 sessions of CBT, all of which were recorded. Assessments took place with young people and their parents at pre- and post- treatment.

2.3 Participants

Of the 50 participants randomised into the ROCKY trial, 40 were used in the current study. Ten were excluded because: they did not have their first session recorded due to a recording error or the recording being

lost (n = 6) or due to drop out from the study following randomisation and prior to starting treatment (n = 4).

2.3.1 Inclusion and exclusion criteria.

Young people were included in the ROCKY trial if they were aged between twelve and seventeen, had a DSM-IV diagnosis of OCD, and if taking medication, had been stable for six weeks. Diagnoses were confirmed using the Anxiety Diagnostic Interview Schedule for DSM-IV: Parent/Child Version (ADIS-IV C/P; Silverman & Albano, 2006). This was administered via face to face interview with the young people and their parent. The ADIS-IV has shown good test-retest reliability (Silverman, Saavedra, & Pina, 2001), good diagnostic reliability (Di Nardo, Moras, Barlow, Rapee, & Brown, 1993) and excellent concurrent validity (Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). More specifically Wood et al. (2002) demonstrated good convergent validity on a number of aspects of the child version of the ADIS (sensitivity =.63 - .89; specificity = .64 - .72) and several aspects of the parent version of the ADIS (sensitivity = .70 - .88; specificity = .63 - .83). A copy of the ADIS has not been included within the appendices in order to comply with and protect copyright legislation of this measure.

Exclusion criteria included: a history/current diagnosis of psychosis (schizophrenia and bipolar disorder), substance dependence, English too poor to engage in treatment, severe disabling neurological disorder, IQ below 75 or pervasive developmental delay, and/or characteristics interfering with completion of treatment, for example impending incarceration, life-threatening unstable medical illness, or the child was not

living in a domestic setting with one or more adults in a parental role. Grandparents were involved where they shared 50% or more of the parental responsibility for the young person.

In total, 134 young people were identified as potential participants. Eighty four were excluded because they did not meet criteria (n=48), were not interested in participating in research (n=25), or did not wish to be randomised (n=11). A total of 50 young people and their families were recruited into the RCT.

Further inclusion criteria were defined for the current study. Participants must have had their first session of therapy recorded in order for relationship indicators to be rated. Where start of treatment data was available (n = 40), participants were included in analysis, but where end of treatment data was missing (n = 2) they were excluded from end of treatment analysis (n = 38), in line with per-protocol analysis.

2.3.2 Descriptive and frequency data.

2.3.2.1 Demographic data.

Demographic data were collected for each participant and parent. This included age, gender, nationality and first language. The young people's religious identity and information about co-morbidities were also collected. For parents, educational history and current and past mental and physical health difficulties were also collected. In addition to this, the total number of therapy sessions attended by the young person, and where relevant their parent, was recorded. Information relating to missed therapy sessions was also recorded (e.g. unattended or cancelled appointments).

2.3.2.2 Young person descriptive and frequency data

The descriptive and frequency data for the 40 young people are displayed in Table 2.1. Fifty-two and a half percent of the sample was female, while the mean age of the sample, was 14.27 years ($SD = 1.54$). The entire sample identified themselves as British and identified English as their first language. In terms of religious beliefs, 42.5% identified themselves as having a religious identity, while 40% reported they had no religious identity or that they did not believe in God, and the remaining 17.5% did not state any religious identity. Co-morbidity was measured at baseline as part of the inclusion assessment using the ADIS (Silverman & Albano, 2006). As well as meeting criteria for OCD, a number of the young people had several comorbidities ($M = 1.86$; $SD = 1.24$); 36% met criteria for generalised anxiety disorder, 33.33% met criteria for social phobia, 14.67% met criteria for separation anxiety, 5.33% met criteria for agoraphobia without panic disorder, 2.67% met criteria for agoraphobia with panic disorder, 4% met criteria for panic disorder, and 4% met criteria for post-traumatic stress disorder (PTSD).

2.3.2.3 Parent descriptive and frequency data.

The descriptive statistics for the parents involved in session one of therapy (with the young person) are displayed in Table 2.2. Where both parents attended the first session, only information from one parent, generally the primary carer, was collected.

Ninety percent of the parent sample were women, while the mean age of the sample was 45.55 years old ($SD = 6.22$). One carer was a grandparent, who had guardianship of the grandchild, as the young person's

Table 2.1

Young Person Characteristics of Sample

Characteristic of sample	*N*	*%*
Gender		
Female	21	52.5
Male	19	47.5
National identity		
British	40	100
First language		
English	40	100
Religious identity		
Christian	14	35.0
Catholic	2	5.0
Atheist	1	2.5
Agnostic	1	2.5
None/Nil	15	37.5
Not specified	7	17.5
Co-morbidities		
Separation Anxiety	11	14.67
Social phobia	25	33.33
Generalised Anxiety Disorder	27	36
Panic Disorder	3	4
Agoraphobia without Panic	4	5.33
Agoraphobia with Panic	2	2.67
Post-Traumatic Stress Disorder	3	4
	N	*M (SD)*
Age	40	14.69 (1.61)
Number of comorbidities	40	1.87 (1.24)

Table 2.2

Demographic Information of Parents Involved in Therapy

	N	%
Gender		
Female	36	90
Male	4	10
National identity		
British	40	100
First language		
English	40	100
Education level completed		
Secondary	20	50
Further	14	35
Higher	6	15
Employment status		
Full time employment	20	50
Part time employment	16	40
Unemployed	0	0
House person	3	7.5
Retired	1	2.5
Mental health illness		
Current mental health illness	5	12.5
No current mental health illness	35	87.5
Historical mental health illness	12	30
No historical mental health illness	28	70
Physical health illness		
Current health illness	3	7.5
No current health illness	37	92.5
Historical health illness	3	7.5
No historical health illness	37	92.5
	N	*M (SD)*
Age	40	45.55 (6.22)

parent lived abroad[1]. Excluding this case from the parent sample, the average age was 44.95 years old ($SD = 4.99$). The entire sample identified themselves as British and identified English as their first language. In terms of education, 50% of the sample had achieved secondary level education, 35% of the sample had achieved further education, and 15% of the sample had achieved higher education. At the time of the ROCKY trial, 90% were employed and 10% were unemployed. Twelve and a half percent of the parent sample reported to be experiencing a mental health condition (e.g. anxiety, depression or other mental illness) and 30% reported that they had experienced a mental health condition in their lifetime. Seven and a half percent of the parents reported they were experiencing chronic health conditions (e.g. asthma, fibromyalgia, chronic fatigue), and 7.5% reported that they had experienced significant health difficulties in their lifetime.

2.3.2.4 Therapy descriptive and frequency data.

The characteristics relating to the treatment delivered are shown in Table 2.3. Twenty-two young people were randomised to the individual CBT treatment arm and 18 to the parent enhanced CBT treatment arm.

The characteristics of the two groups are reported in the Table 2.4. This includes the mean age, comorbidities and average number of sessions received in the two groups. Gender representation of the young people within the two treatment arms is also reported.

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[1] For the purpose of this study all parent/carer information is referred to as 'parent', for continuity of terms.

Table 2.3

Therapy Frequency and Descriptive Characteristics

	N	%
Treatment arm		
Individual CBT	22	55
Parent enhanced CBT	18	45
Treatment stratum		
12 – 14 year old	21	52.5
15 – 17 year old	19	47.5
Family member in session one		
Mother	28	70
Father	3	7.5
Both parents	7	17.5
Other	2[a]	5
	N	M (SD)
Length of session one (minutes)	40	64.17 (11.64)
Number of therapy sessions	40	10.87 (3.32)
Therapy sessions cancelled by therapist	40	.22 (.48)
Therapy sessions cancelled by patient	40	1.43 (1.75)
Therapy sessions not attended by patient	40	.43 (.74)

Note. CBT = cognitive behavioural therapy; [a]other consisted of two grandparents in one young person's session and a mother with grandparent in another session

Table 2.4

Characteristics of Treatment Groups

	Individual CBT		Parent enhanced CBT	
	N	*M (SD)*	*N*	*M (SD)*
Age	22	14.5 (1.37)	18	13.9 (1.79)
Number of comorbidities	22	1.77 (1.11)	18	2.00 (1.41)
Number of sessions	22	11.64 (2.47)	18	9.94 (4.00)
Gender	*N*	*%*	*N*	*%*
Male	10	45	9	50
Female	12	55	9	50

Note. CBT = cognitive behavioural therapy.

2.4 Measures

2.4.1 Outcome measures.

This section describes the outcome measures used within the study. Content, delivery and scoring of measures are outlined and any adaptions of measures are explained. Available reliability and validity data are also reported.

2.4.1.1 Primary outcome measure.

The Children's Yale Brown Obsessive Compulsive Scale (CYBOCS; Scahill et al., 1997) is a measure of OCD symptom severity in young people between the ages of 6 and 17 (see Appendix C). The CYBOCS was adapted from the Yale-Brown Obsessive Compulsive Scale (YBOCS; W. K. Goodman et al., 1989) for adults. It is a semi-structured researcher/clinician-rated interview, which is widely used to assess outcome in studies of childhood OCD (Barrett et al., 2004; Martin & Thienemann, 2005; Peris, Yadegar, et al., 2012; Storch et al., 2008; Waters et al., 2001).

The CYBOCS was completed at baseline and end of treatment with the young people alone. Assessments were completed by trained researchers, including the author of the current study.

The CYBOCS is separated into three sections. The first interviewed the young person about the types of obsessions they experience, using a categorised checklist. From this, the four most concerning obsessions, labelled 'target symptoms', were identified by the young person. The severity of these obsessions over the past week was then rated, based on: time spent/taken up by obsession, distress caused, how much the young person tried to resist obsessions, the interference they caused the young person in their daily living, and the degree of control they felt they have over their obsessions. Examples of probe questions for each item were provided to assist the interviewer in collecting the relevant information and rating symptoms on a 5-point scale. The same was then repeated for compulsions, this being the completion of the symptom checklist, identification of target symptoms and rating of symptom severity. An overall score of symptom severity out of 40 was obtained from these two sections. A final section assessed symptoms of insight, avoidance, indecisiveness, responsibility, perseverative slowness, and doubting. Recent literature (Storch, Lewin, De Nadai, & Murphy, 2010) suggests a score of ≥ 15 is considered to be clinically significant.

The CYBOCS is reported to have good reliability and validity (Storch et al., 2004). Scahill et al. (1997) reported high internal consistency ($\alpha = .87$), good intraclass correlation within the CYBOCS total score (p= .84), obsession score (p= .91) and compulsion score (p= .66). Scahill et al.

(1997) also demonstrated good validity, as the CYBOCS correlated well with an OCD self-report measure (r = .62, p = .0001), but less well with general measures of mood, namely anxiety (r = .37. p = .05) and depression (r = .34, p = .02).

2.4.1.2 Secondary outcome measures.

2.4.1.2.1 Responsibility.

This was self-rated by the young people using the 26-item Responsibility Attitudes Scale (RAS; Salkovskis et al., 2000). The RAS (see Appendix D) lists 26 general beliefs that are linked with inflated responsibility beliefs in OCD (e.g. 'If I think bad things, this is as bad as doing bad things'). Young people were asked to rate these beliefs on a 7-point scale, ranging from 'totally agree' to totally disagree'. A total score was obtained, ranging between 26 and 182, with a lower score indicative of inflated responsibility. For the purpose of the analysis, scores on the RAS were reversed to enable easier interpretation of the data, so that a higher score on the RAS was indicative of higher levels of inflated responsibility in the young person.

The RAS has good test-retest reliability (r=0.94) and internal consistency (α=0.92). Concurrent validity was reported to be between .52 and .57 (Salkovskis et al., 2000).

2.4.1.3 Measures of parental psychopathology.

Parental psychopathology was assessed using the Brief Symptom Inventory (BSI; Derogatis, 1975) and the Beck Anxiety Inventory (BAI; A. T. Beck & Steer, 1988). These are outlined in section 2.4.1.3.1 and 2.4.1.3.2 respectively.

2.4.1.3.1The Brief Symptoms Inventory.

The BSI (BSI; Derogatis, 1975),is a fifty-three item self-report measure of wellbeing. This was completed by all parent(s) at baseline and post-treatment in the ROCKY trial.

The BSI is the short version of the Symptom Checklist 90 Revised (SCL-R-90; Derogatis, 1975, 1977) and assesses a total of nine symptom dimensions: somatisation, anxiety, depression, obsessive-compulsive, interpersonal sensitivity, phobic anxiety, hostility, paranoid ideation, and psychoticism. In addition to this, three global indices are scored: global severity index (GSI), positive symptom distress index (PSDI) and positive symptom total (PST). Parents ranked each item on a 5-point scale from 'not at all' to 'extremely', based upon intensity of symptoms during the past seven days. Scores were converted into T-scores for non-patient adult females or males, as required. A T-score of 63 or above is considered clinically significant, as are cases in which two of the dimensions score 63 or above (Derogatis, 1975).

The BSI is reported to have good reliability and validity within different populations (Boulet & Boss, 1991; Johnson, Murphy, & Dimond, 1996). Derogatis (1993) reports good internal consistency for the nine dimensions, (α = .71 - .85), along with good test-retest reliability across the nine dimensions (r = .68 - .91) and the global indices (r = .87 - .90). A copy of the BSI has not been included within the appendices in order to comply with and protect the copyright legislation of this measure.

2.4.1.3.2 The Beck Anxiety Inventory.

The BAI (BAI; A. T. Beck & Steer, 1988) is a well established, 21 item, self report measure of anxiety symptoms. The BAI was completed by parents of young people. Items are scored on a Likert scale ranging from 0 (not at all) to 3 (severely). Ratings were made by the parent for the past week and items were summed to form a total score (0-63), with a higher score being indicative of greater anxiety. The measure is valid for use with individuals aged between 17 and 80 years.

The BAI was originally developed for use in psychiatric populations, but demonstrates good reliability and validity within clinical and non-clinical populations (A. T. Beck, Epstein, Brown, & Steer, 1988; Creamer, Foran, & Bell, 1995; Fydrich, Dowdall, & Chambless, 1992; Osman, Barrios, Aukes, Osman, & Markway, 1993). A. T. Beck et al. (1988) suggest that the BAI had high internal consistency ($\alpha = .92$) and test-retest reliability, ($r = .83$). The BAI correlated well with a measure of anxiety ($r = .48$) although less so with a measure of depression ($r = .25$). A copy of the BAI has not been included within the appendices in order to comply with and protect the copyright legislation of this measure.

2.4.2 Parental relationship indicators.

The parental relationship indicators refer to aspects which may be indicative of the parent-child relationship. Within this study, verbal expression was used to measure the quality of the relationship, using criterion for existing measures of expressed emotion (Daley, 2001; Magana et al., 1986). These required adaptation for use with therapy recordings, which are discussed further in section 2.4.2.2.

2.4.2.1 Therapy Recordings.

Session one therapy recordings from the ROCKY trial were used as an indicator of the parent relationship. The young person attended this session with one or both parent(s), in both treatment arms. Therapy for the ROCKY trial was manualised for both treatment arms (Derisley, 2008; Derisley, Heyman, Robinson, & Turner, 2008), with the focus of session one on psychoeducation for child and parent about OCD, and the potential role of the family in the maintenance of OCD. The length of session one varied between participants ($M = 64.17$; $SD = 11.64$).

2.4.2.2 Rationale for selection and adaptation of existing measures.

Due to the nature of rating therapy recordings, and lack of directed or controlled speech, global ratings from the FMSS and PFMSS were considered too difficult to adapt and obtain inter-rater reliability. Therefore, frequency of comments was adopted as a method which would best suit coding of the data available. This was also considered more robust as it enabled exploration of specific constructs of parent relationship indicators, rather than combining several components, such as in the coding of warmth in expressed emotion measures. Within the literature the use of the current measures of expressed emotion has led to growth in gaps in the literature, as these more standardised approaches have meant that some aspects of emotional expression are lost. Although use of standardised measures can be considered an advantage in terms of validity and comparability of studies, it also limits exploration of other constructs. Therefore, for the purpose of the study design, and with the literature in mind, critical comments and empathy

(taken from the warmth global category on the PFMSS), were selected as parent relationship indicators. In addition positive remarks were selected to enhance validity and reliability of coding, as this category exists within both measures of expressed emotion (Daley, 2001; Magana et al., 1986).

Specific elements of the FMSS and PFMSS were combined and adapted for use in the current study (i.e. critical comments, empathy and positive remarks). The methods for the identification of critical comments, empathy and positive remarks are outlined in sections 2.4.2.2.1 to 2.4.2.2.3. Aspects of the measures which were adapted within the training process are documented within the Section 2.5.1.2.

2.4.2.2.1 Critical comments.

A critical comment was defined as a statement which showed dislike or disapproval of the young person's behaviour or personality, based upon tone and content (e.g. "she's just really manipulative"; "he spits at me"). A comment that was based upon behaviour or an event that happened more than six months prior to the first therapy session was not counted. Where a critical comment was followed by a positive remark (see section 2.4.2.2.3) it was considered to have been qualified and therefore not counted. A frequency count was used to tally critical comments of the parent about the child within the session. The frequency count for each parent was then converted into a critical score, see section 2.5.1.4.

2.4.2.2.2 Empathy.

Empathy was defined as a statement within which the parent showed understanding of the young person's mental state or concern for the young person (e.g. "she was really distressed"). A comment that was based upon

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an event that happened more than six months prior to the first therapy session was not counted. Where an empathic comment was followed by a positive remark or critical comment, the empathic comment was still counted. A frequency count was used to tally the number of empathic comments. The frequency count for each parent was then converted into an empathy score, see section 2.5.1.4.

2.4.2.2.3 Positive remarks.

A positive remark was defined as a statement that described a positive characteristic or behaviour of the young person (e.g. "he is a good person"; "she is very loving"). A comment that was based upon behaviour or an event more than six months prior to the first therapy session was not counted. Positive remarks were counted in order to ensure correct coding of critical comments. Where a positive remark followed a critical comment, the critical comment was considered to have been qualified and therefore not counted. A frequency count was used to tally the number of positive remarks within the session, for the purposes of training.

2.5 Procedure

Young people referred to NHS CAMHS in Norfolk and Suffolk were screened for OCD at their initial clinic assessment. If eligible, they were given information about the ROCKY trial and invited to take part in an assessment. Assessments involved the administration of the ADIS-IV with the young person and parent(s) separately. Participants, who met diagnostic criteria and consented to be randomised, were randomised to either the individual CBT treatment arm or the parent enhanced CBT treatment arm, using concealed randomisation at the Norwich Medical School Clinical

Trials Unit with stratification for age (12-14 years or 15-17 years) and recruitment site (Norfolk or Suffolk).

Further assessment of the young person's OCD symptomology was completed prior to treatment using the CYBOCS. In addition to this, specific OCD components and mental health symptoms were assessed using standardised questionnaires. Measures of mental health symptoms were also administered to one or both parents.

Therapy was delivered by four clinical psychologists and two cognitive-behavioural therapists. All therapists provided both individual and parent-enhanced CBT and all therapy sessions were recorded. A random sample of 15% of therapy recordings were assessed using the Cognitive Therapy Rating Scale – Revised (James, Blackburn, & Reichelt, 2001) to assess adherence to the CBT model. CBT was manualised for both treatment arms and all participants were offered 14 sessions, typically once a week. In both treatment arms, session one was delivered in the same way; incorporating psychoeducation about anxiety and its role within OCD, a rationale for treatment, and an exploration of the young person's OCD symptoms. In the following sessions an individual formulation was completed with the young person, or with them and their parent collaboratively in the parent-enhanced arm. In the parent-enhanced arm, the formulation included the parent/family factors explicitly. Exposure and response prevention (ERP) and cognitive work were incorporated into both treatment arms and the treatment manual provided a guide to clinicians regarding the content of each session. Within the parent-enhanced treatment arm, a parent was included in all sessions and encouraged to take the role of

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a co-therapist so enabling support outside of the weekly therapy session. Parents within the parent-enhanced treatment arm were encouraged to take an active role in developing the formulation, planning behavioural experiments and completing homework tasks. Within the individual treatment arm at least one parent was present for the first and last sessions (session 1 and 14) as well as session 7. In both treatment arms session 7 was used to review treatment and plan the remaining sessions.

At the end of therapy, the baseline assessments were repeated by a blinded researcher, including the author of the current study. Where possible this was completed even if the young person had dropped out of treatment. Where blindness of assessors was broken (i.e. the treatment received by the young person was revealed), this was recorded and reported to the study chief investigator and local primary investigator. All subsequent CYBOCS assessments were then double-rated to ensure reliability.

Within the current study, session one therapy recordings were sourced and transcribed; further details are outlined in Section 2.5.1. Coding criteria were developed which were based upon existing established measures of expressed emotion and were adapted for use with the therapy recordings available. Training of the author on the coding criteria was undertaken by an experienced rater. Parent relationship indictors were coded using both transcriptions and recordings, to enable coding of content and tone. Frequency counts of comments were completed following coding of the transcriptions. These were then converted to scores based upon the total length of time the parent spoke for within the session. These scores were

transferred into a database with the start and end of treatment together with child and parent, data in order to complete analysis.

2.5.1 Transcriptions.

Following identification of the cases for the current study, session one therapy recordings were transcribed by the author, a member of university support staff, and two medical secretaries (following the signing of a confidentiality agreement, as shown is Appendix E). Parents' prose was transcribed verbatim and other prose (i.e. that of the therapist and young person) was summarised within the transcriptions. Times were added to transcriptions to ease navigation through the recordings when completing ratings. Where two parents were present in the first session, the primary carer (as identified by the family within the demographic information) was identified within the recording and their prose transcribed. One exception to this was where the primary carer joined the session part-way through, in this instance the secondary carer was coded throughout.

2.5.1.1 Words spoken per minute.

Both the total session time ($M = 64.17$, $SD = 11.64$) and the number of the words said by the parent ($M = 1873.75$, $SD = 1019.77$) within the session were recorded. The parent's words per minute ($M = 29.34$, $SD = 15.43$) were calculated by dividing the number of words spoken by the total session time (in minutes).

2.5.1.2 Inter-rater reliability.

The author was trained in the rating of parent relationship indicators using an adapted form of the criteria used in the FMSS (Magana et al., 1986) and Pre-school FMSS (Daley et al., 2003). A manual was developed

during the training process (Appendix F). Training took place at the University of East Anglia (UEA) and was coordinated by an experienced rater. In an initial meeting rating criteria were outlined and examples from therapy recordings were discussed. Training was completed in stages. Each stage consisted of rating a selection of therapy recordings, between eight and ten, until an acceptable level of reliability was met on all constructs (e.g. Intraclass Correlation (ICC) > .90). Within each stage the expert and author identified steps needed to improve rating techniques and reliability. Details of each step and inter-rater reliability scores are reported below.

2.5.1.2.1 Stage 1: Inter-rater reliability.

At stage one of inter-rater reliability, the expert and author rated critical comments and positive remarks only on a selection of therapy recordings (n = 10). As shown in Table 2.5, inter-rater reliability was better for critical comments than for positive remarks, and neither were at an acceptable level.

Table 2.5

Stage One Inter-Rater Reliability Scores for Critical Comments and Positive Remarks

	ICC	Sig.
Critical comments	.741	.028
Positive remarks	.583	.104

Within this stage the main training involved developing understanding around the qualification of comments and updating the manual accordingly. More specifically, it was highlighted to the author that

where a positive comment or a critical comment was qualified it should not be coded. During this stage, the author was also coding sections of text. However, upon attending the training meeting it became evident that discrete coding of a single phrases or sentences was required. This was noted and updates made to the manual, regarding statement qualification and rating of discreet statements. It was also agreed coding should include empathy for the next stage and criteria for rating this were discussed.

2.5.1.2.2 Stage 2: Inter-rater reliability.

During stage two, critical comments, positive remarks and empathy were rated on a new selection of therapy recordings (n = 8). As can be seen in Table 2.6, inter-rater reliability for critical comments and positive remarks had much improved from stage one and there was excellent agreement between raters for the rating of empathy.

Table 2.6

Stage Two Inter-Rater Reliability Scores for Critical Comments, Positive Remarks and Empathy

	ICC	Sig.
Critical comments	.861	.000
Positive remarks	.952	.009
Empathy	.951	.000

Within this stage considerations of the coding of empathy were made. Due to the nature of the recordings being of therapy, the raters were required to consider whether historical expressions of empathy should be coded, as no explicit guidance around this was available within the original

PFMSS or FMSS manuals (Daley et al., 2003; Magana et al., 1986). The rule used for positive remarks and critical comments within the FMSS (Magana et al., 1986) was therefore adopted for coding empathy within this context. It was agreed that an empathic comment should be coded only if it related to something that occurred within the last six months. Due to the nature of the recordings, direct criticism of the child by the parent in the therapy session was evident, during this stage. This was discussed and it was agreed that these comments should not be counted within critical comments but could be counted separately. Within this stage of coding, the author had coded more comments overall compared to the expert, particularly in relation to critical comments. This was discussed and it was considered that the author may have been compensating for differences in coding in the previous stage. As a result the criteria for coding were revisited and examples discussed to aid clarification. Updates were made to the manual for the next stage of coding, regarding the coding of empathy and direct criticism.

2.5.1.2.3 Stage 3: Inter-rater reliability.

Within stage three of coding, critical comments, positive remarks and empathy were rated on a new selection of therapy recordings (n = 10). Within this stage, coding for positive remarks remained consistent. However inconsistencies arose in the coding of critical comments and empathy, as shown in Table 2.7.

There were a number of small differences between the expert and trainer coding of critical comments. Specifically, of the ten recordings rated, seven of the ratings matched but three did not (difference of one or two).

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These differences were discussed and clarity was given to the author. With regard to empathy, similar to critical comments in stage two, the trainee rater had overrated, with the variance between scores of the expert and training rater being between zero and five. Following discussions and clarity regarding the rating of empathy, adjustments were considered for rating the fourth set of therapy recordings. No updates were made to the manual in this stage.

Table 2.7

Stage Three Inter-Rater Reliability Scores for Critical Comments, Positive Remarks and Empathy

	ICC	Sig.
Critical comments	.714	0.38
Positive remarks	.969	0.00
Empathy	.806	.011

2.5.1.2.4 Stage 4: Inter-rater reliability.

Within the final stage of coding, critical comments, positive remarks and empathy were rated on a new selection of therapy recordings (n = 8).

Table 2.8

Stage Four Inter-Rater Reliability Scores for Critical Comments, Positive Remarks and Empathy

	ICC	*Sig.*
Critical comments	.932	.001
Positive remarks	1.00	-
Empathy	.948	.000

As shown in Table 2.8, an acceptable level of inter-rater reliability (ICC >

.90) was met for all aspects of coding within this stage.

2.5.1.3 Coding of therapy recordings.

Following an acceptable level of inter-rater reliability being reached,

the author rated (or re-rated where transcripts had been used within the

training stages) all 40 transcripts. The author applied the knowledge

developed through the inter-rater reliability training to inform coding and

rating consistency of the transcripts. Frequency scores for the transcripts

were recorded and transferred into a database which contained the parent

and young person data from the ROCKY trial.

2.5.1.4 Word scores.

Critical and empathy scores were calculated for each parent. This

was done using the frequency of the specific comment/remark and dividing

it by the number of words the parent spoke per minute. This score was then

multiplied by one hundred and reported to two decimal places. An example

of this calculation, using a parental critical score and words per minute

frequency, is shown in Figure 2.1.

Figure 2.1 The Calculation of Parental Expression Scores.

$$\text{Critical score} \quad = \quad (4/\ 42.35) \times 100$$

$$= \quad 0.0944510 \times 100$$

$$= \quad 9.45$$

2.5.2   Ethical considerations.

As the main question related to that of the ROCKY trial, from which

this data was sourced, an extension to the existing study and an ethical

amendment was submitted, with the information regarding the current study

(reference: 08/H0310/72). Notification of the amendment was submitted to the relevant National Research Ethics Service (NRES) and Research and Development (R&D) services in May 2012 and August 2012 respectively. Favourable opinion was received in writing from the East of England (Norfolk) NRES on the 2nd July 2012 (Appendix G) and Norfolk and Suffolk R&D service on the 8th November 2012 (Appendix H).

2.5.2.1 Informed consent.

Additional consent was not required for this study as it formed part of a larger study looking at outcomes in OCD. Within the ROCKY trial, consent was obtained from parents and young people over 16. For young people under 16, assent was obtained and consent from a parent. A copy of the ROCKY trial participant information sheets and consent form can be found in Appendices I and J respectively.

2.5.2.2 Protection of participants.

As participants were involved in CAMHS during the course of the ROCKY trial, contact information provided on the information sheet was regarding further information about the research, rather than support for their OCD. Participants' GPs were notified of their involvement in the ROCKY trial (Appendix K) and assessment information was fed back to the clinician involved in the participant's treatment.

With regard to issues of risk, where this was highlighted as a concern during the assessment period, it was discussed with an experienced clinical psychologist or psychiatrist, and managed in line with recommendations of the service.

2.5.2.3 Confidentiality and anonymity.

Within the ROCKY trial all participants received a unique ID number on entry to the trial and any identifiable information was stored separately to the trial data. All data were stored in line with the Data Protection Act (The National Archives, 1998) and as recommended by the National Research Ethics Service. In order to complete assessments in the young person's home, data were transferred within a lockable briefcase. Recorded therapy sessions were stored digitally on NHS networked computers in a project-specific file, which only researchers and therapists on the project could access. Data were anonymised and entered onto a password-protected central database, accessed via password-protected computers.

Within the current study, all participants received unique ID numbers which were adopted for the ROCKY trial to avoid confusion of data. For the current study, transcribing and rating of therapy recordings was completed at locations where these data could be accessed and where possible, this was on NHS sites. Where recordings required moving away from NHS sites, an NHS approved encrypted memory stick was used to transport data and data remained on the memory stick during transcribing and rating.

For those individuals listening to and transcribing recordings, a confidentiality agreement was signed (Appendix E). This addressed issues regarding management of participant information and data management.

Once the study is completed these data will be moved to a locked archive room. Data will be stored for ten years in line with the National

Research Ethics Service Guidelines. Digital data will also be archived in line with National Research Ethics Service Guidelines. After this time, data will be destroyed.

2.6   Plan of Analysis

2.6.1   Sample size and preparatory analysis.

2.6.1.1 Sensitivity calculations.

All hypotheses adopted correlational analysis. As the sample size was predetermined for each hypothesis, and due to the exploratory design, one-tailed sensitivity calculations were completed using G Power (Faul, 1992). Based on guidelines by Cohen (1992) an α level of .05 and a recommended power of .8, was used to determine effect sizes for each hypothesis. Effect sizes were defined according to Cohen's criteria (Cohen, 1988, 1992) as either small ($\rho = .1$), medium ($\rho = .3$) or large ($\rho = .5$). Existing literature of an exploratory nature, within the field of child and adolescent OCD report findings based upon .22 - .59 effect sizes (Chambless et al., 2001; Peris, Yadegar, et al., 2012; Przeworski et al., 2011; Steketee, 1993), therefore given the exploratory nature of the design and effect sizes within existing literature, a medium effect size was considered acceptable within the current study.

2.6.2.2.2 Hypotheses 1: Parental psychopathology and parent relationship indicators

A sample size of 37 was available for the exploration of these hypotheses. A one-tailed sensitivity calculation, with a predetermined α level of .05 and power of .8, estimated a medium effect size of .38, as shown in Figure 2.2.

Figure 2.2 Sensitivity Analysis to Compute Required Effect Size for

Hypotheses 1.

Tail(s)	=	One
α err prob	=	0.05
Power (1-β err prob)	=	0.80
Total sample size	=	37
Noncentrality parameter δ	=	2.5359913
Critical t	=	1.6895725
Df	=	35
Effect size |ρ|	=	0.3848102

2.6.2.2.3 Hypothesis 2: Parent relationship indicators and inflated

responsibility.

Figure 2.3 Sensitivity Analysis to Compute Required Effect Size for

Hypotheses 2**.**

Tail(s)	=	One
α err prob	=	0.05
Power (1-β err prob)	=	0.80
Total sample size	=	38
Noncentrality parameter δ	=	2.5345755
Critical t	=	1.6882977
Df	=	36
Effect size |ρ|	=	0.3802735

A sample size of 38 was available for the exploration of these

hypotheses. A one-tailed sensitivity calculation, with a predetermined α

level of .05 and power of .8, estimated a medium effect size of .38, as shown in Figure 2.3.

2.6.2.2.4 Hypothesis 3: Parent relationship indicators and OCD symptoms.

A sample size of 40 was available for the exploration of these hypotheses. A one-tailed sensitivity calculation, with a predetermined α level of .05 and power of .8, estimated a medium effect size of .37, as shown in Figure 2.4.

Figure 2.4 Sensitivity Analysis to Compute Required Effect Size for Hypotheses 3**.**

Tail(s)	= One
α err prob	= 0.05
Power (1-β err prob)	= 0.80
Total sample size	= 40
Noncentrality parameter δ	= 2.5319735
Critical t	= 1.6859545
Df	= 38
Effect size |ρ|	= 0.3716629

2.6.2.2.5 Hypothesis 4: Parent relationship indicators, outcome and parental involvement in treatment.

A sample size of 38 was available for the exploration of hypotheses 4a and 4b relating to the relationship between parent relationship indicators and outcome. A one-tailed sensitivity calculation, with a predetermined α level of .05 and power of .8, estimated a medium effect size of .38, as shown in Figure 2.5.

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Figure 2.5 Sensitivity Analysis to Compute Required Effect Size for

Hypotheses 4a and 4b**.**

Tail(s)   = One

α err prob   = 0.05

Power (1-β err prob)   = 0.80

Total sample size   = 38

Noncentrality parameter δ   = 2.5345755

Critical t   = 1.6882977

Df   = 36

Effect size |ρ| = 0.3802735

*Figures 2.*6 Sensitivity Analysis to Compute Required Effect Size for

Hypothesis 4c.

Tail(s)   = One

α err prob   = 0.05

Power (1-β err prob)   = 0.8

Total sample size   = 22

Noncentrality parameter δ   = 2.5751231

Critical t   = 1.7247182

Df   = 20

Effect size |ρ| = 0.4812578

A sample size of 22 was available for the exploration of hypothesis

4c and a sample size of 18 was available for the exploration of hypothesis

4d. These hypotheses related to the relationship between parent relationship

indicators and outcome, depending upon parent involvement in treatment. A

one-tailed sensitivity calculation, with a predetermined α level of .05 and

power of .8, estimated a medium to large effect size of .48 for hypothesis 4c and a large effect size of .52 was calculated for hypothesis 4d, as shown in Figures 2.6 and 2.7 respectively.

*Figure 2.*7 Sensitivity Analysis to Compute Required Effect Size for Hypothesis 4d.

Tail(s)	=	One
α err prob	=	0.05
Power (1-β err prob)	=	0.8
Total sample size	=	18
Noncentrality parameter δ	=	2.5987763
Critical t	=	1.7458837
Df	=	16
Effect size |ρ|	=	0.5223353

2.6.2 Preparatory analysis.

The screening process of the data is discussed in this section. It reports methods for managing missing data and the assessment and management of data assumptions for parametric analysis.

2.6.2.1 Missing data.

Missing data at start of treatment were recorded within the database using a specific code and were not included in analysis. Similarly end of treatment missing data were also coded and not included within analysis. Where scores relied on start and end of treatment scores, and these were not available, data were considered missing and coded in this way.

2.6.2.2 Data assumptions.

The following outlines the testing of assumptions of the data used within the analysis.

2.6.3.2.1 Distribution of normality.

The distributions of the data were tested using Kolmogorov-Smirnov (K-S). Table A2.9 (Appendix L) illustrates the K-S outputs for the pre-treatment, post-treatment and change scores and Table A2.10 (Appendix L) illustrates the K-S outputs for the pre-treatment BSI subscale scores. Data that met the assumption of normality are marked with an asterisk and include CYBOCS pre-, post- and change score and BSI global severity pre-treatment score. However, the majority of the data violated the assumption of normal distribution.

The K-S test was also completed on the grouped data used within the supplementary analysis. As shown in Table A2.11 (Appendix L), CYBOCS outcome data continued to meet assumptions of normal distribution, as did empathy scores for both groups. Critical scores, within the treatment groups, did not meet the assumptions of normality.

2.6.2.2.2 Homogeneity of variance.

Levene's test was used to assess the homogeneity of variance between the treatment groups, analysed within hypotheses four. For the critical score, the variances were equal for individual and parent-enhanced CBT groups, $F(1,38) = .059$, $p = .809$. For the empathy score, the variances were equal for individual and parent-enhanced CBT groups, $F(1, 38) = 3.82$, $p = .058$. Critical and empathy scores therefore met the requirements for parametric testing, in terms of the variance between groups.

For the CYBOCS post-treatment score, the variances were equal for individual and parent-enhanced CBT groups, $F(1, 36) = .438$, $p = .51$. The variances were also equal for individual and parent-enhanced CBT groups on the CYBOCS change score, $F(1, 36) = .629$, $p = .43$. Again, similar variances were found between the two treatment groups for these variables. In summary, there were no significant differences between the variances between the two groups on any of the variables used in the between-groups analysis.

2.6.2.2.3 Managing data.

As some of the data met assumptions for use of parametric analysis and some sets did not, it was considered that transformations of the data could have led to incorrect manipulation of data (Brace, Kemp, & Snelgar, 2012; Field, 2013). Given the small sample number it was considered that bootstrapping (Efron & Tibshirani, 1993) during parametric correlational analysis would attempt to normalise curves and is considered to be more robust than the non-parametric analysis methods for smaller samples. Bootstrapping is described further in section 2.6.2.3.

2.6.2.3 Bootstrapping.

Bootstrapping is a non-parametric, sampling with replacement method, which enables more robust analysis in correlational testing of smaller samples (Efron & Tibshirani, 1993). In performing bootstrapping, samples with replacement are drawn which are equal to the original sample size and the appropriate statistics calculated. In doing so the distribution begins to approximate a Gaussian curve (i.e. it becomes normal). This then

allows for more robust estimates of significance and confidence intervals (CI).

For all correlational analysis, bootstrapping was applied. Five thousand random samples were drawn. Parameters were estimated and bias corrected and accelerated (BCa) 95% confidence intervals were reported. Significance was considered based upon the CI. Where the range between the lower and upper CI did not contain zero, findings were considered to be statistically significant.

2.6.3 Analysis.

Details of analysis completed for each of the hypotheses are explained below. Analysis was completed using per-protocol methods, these are outlined. Data was analysed using PASW Statistics 18.

2.6.3.1 Hypotheses 1: Parental psychopathology will correlate with parent relationship indicators.

A one-tailed Pearson's correlation with bootstrapping was used to analyse the data for these hypotheses. To test these hypotheses, parental psychopathology, using the BAI total score and BSI global score and positive symptom score, were correlated with the critical and empathy scores of the parent, obtained from the coded transcripts. The nine subscales of the BSI, which define various aspects of psychopathology, were also correlated with the critical and empathy scores to test these hypotheses. Hypothesis 1a suggested a positive relationship would exist between the critical score and parental psychopathology variables. While hypothesis 1b suggested a negative relationship would exist between the empathy score and parental psychopathology variables.

2.6.3.2 Hypotheses 2: Parent relationship indicators will correlate with the young person's inflated responsibility.

A one tailed Pearson's correlation with bootstrapping was used to analyse the data for these hypotheses. Responsibility levels of the young person, as defined by the RAS, were correlated with the critical or empathy scores of the parent, obtained from the coded transcripts, to test these hypotheses. Hypothesis 2a suggested a positive relationship would exist between the critical score of the parent and levels of responsibility of the young person, while hypothesis 2b suggested a positive relationship would exist between the empathy score of the parent and levels of responsibility of the young person.

2.6.3.3 Hypotheses 3: Parent relationship indicators will predict specific obsessions and compulsions.

For hypothesis 3a, a checking compulsion was defined as one in which the young person would check something in relation to preventing an unwanted prediction becoming realised (i.e. to prevent harm coming to self or others, to prevent making a mistake, to prevent something terrible happening, or in relation to washing or somatic symptoms). Similarly, for hypothesis 3b data were defined categorically as to whether the main obsession was an aggressive or non-aggressive obsession. An aggressive obsession included thoughts relating to a fear of harm coming to the self or others, fear of harming self or others, experiencing violent or horrific images, being responsible for something bad happening or doing something bad (i.e. acting on an unwanted impulse or blurting out obscenities).

A one-tailed logistic regression, with bootstrapping, was completed to analyse both hypotheses. Data from the CYBOCS was grouped based on the main compulsion or obsession as identified by the young person, in the 'target symptom' section of the CYBOCS. Data were categorised for hypothesis 3a into checking and washing compulsions, or no checking and washing compulsions. For hypothesis 3b data were defined categorically as to whether the main obsession was an aggressive or non-aggressive obsession. These categories were then entered (along with the relevant parent relationship indicator score obtained from the coded transcripts) into the logistic regression model. Hypothesis 3a suggested a significant relationship would exist between the critical score of the parent and the washing/cleaning or checking compulsions of the young person. Hypothesis 3b suggested a significant relationship would exist between the empathy score of the parent and the aggressive obsessions of the young person.

2.6.3.4 Hypotheses 4: Parent relationship indicators will correlate with outcome, and this will vary according to parental involvement in treatment.

A one-tailed Pearson's correlation, with bootstrapping, was used to test hypotheses 4a and 4b. Parental criticism and empathy were measured by the critical and empathy scores respectively, obtained at session one. Outcome was measured by the change in the young person's OCD symptoms, calculated by subtracting the end of treatment score from the baseline score on the CYBOCS. Regression analyses with bootstrapping were used to explore any significant relationships further, and the amount of variance in outcome was accounted for by the critical score of the parents at

the start of treatment. Hypothesis 4a suggested a positive relationship would exist between parental criticism and treatment outcome, that is higher parental criticism would be associated with worse outcome, while hypothesis 4b suggested higher levels of parental empathy will be correlated with better outcome in young people.

For hypotheses 4c and 4d, initial data exploration looked at differences in outcome between groups using an independent means t-test, with bootstrapping. Then further exploration of each treatment arm was then completed looking at the relationship between parental relationship indicator scores (criticism and empathy scores), treatment outcome and role of parental involvement in treatment. This was completed using the end of treatment CYBOCS score and change scores on the CYBOCS. This analysis was completed using a series of two-tailed Pearson's correlations, with bootstrapping. Regression analyses with bootstrapping were used to explore any significant relationships further. Hypothesis 4c suggested that higher levels of parental criticism, where parents were not involved in treatment, would correlate with better outcome in young people. Hypothesis 4d suggested that higher levels of parental empathy would correlate with better outcome in young people, where parents were involved in treatment.

CHAPTER THREE

3. Results

The following section outlines the descriptive and frequency statistics for the data analysed. The result of each hypothesis is then reported in turn.

3.1 Descriptive and Frequency Statistics

Tables 3.1 and 3.2 outline the descriptive and frequency statistics for the measures used in the data analysis. Parent and young person pre- and post-treatment descriptive statistics are presented in Table 3.1. Frequency data, regarding the primary obsession and compulsion of the young people, are presented in Table 3.2.

3.2 Analysis of Hypotheses

3.2.1 Hypotheses 1: Parental psychopathology will correlate with parent relationship indicators.

The critical score was not significantly correlated with the T-score on the BAI $r = -.002$, $p = .494$, BCa 95% CI [-.27, .44], the total T-score of the BSI, $r = -.121$, $p = .238$, BCa 95% CI [-.52, .40], the BSI positive symptom T-score, $r = .001$, $p = .498$, BCa 95% CI [-.39, .41], nor the T-scores of the nine subscales of the BSI (Table 3.3).

The empathy score did not significantly correlate with the T-score on the BAI $r = -.207$, $p = .109$, BCa 95% CI [-.44, .08], the total T-score of the BSI, $r = -.289$, $p = .041$, BCa 95% CI [-.55, .04], the BSI positive symptom T-score, $r = -.347$, $p = .018$, BCa 95% CI [-.63, .00], or the T-scores of the nine subscales of the BSI. Table 3.3 illustrates the results of

Table 3.1

Pre-Treatment and Post-Treatment Descriptive Statistics for Parent and Young Person Data

Variable	Measure	Pre-treatment		Post-treatment	
		N	*M (SD)*	*N*	*M (SD)*
Parental critical score	Critical comments/words per minute	40	4.76 (7.31)		
Parental empathy score	Empathic comments/words per minute	40	8.58 (6.83)		
Parental psychopathology	BSI	37	53.56 (9.86)	34	47.91 (11.42)
Parental anxiety	BAI	37	5.78 (5.46)	34	1.74 (19.04)
Young person OCD severity	CYBOCS	40	24.17 (5.64)	38	13.31 (8.26)
Young person outcome	CYBOCS T1 – CYBOCS T2		-	38	11.26 (7.61)
Young person responsibility	RAS[a]	38	95 (31.10)	34	116.47 (30.59)

Note. BSI = Brief Symptoms Inventory; BAI = Beck Anxiety Inventory; CYBOCS = Children's Yale Brown Obsessive Compulsive Scale; RAS = Responsibility Attitudes Scale; [a]reversed score.

Table 3.2

Frequency of Obsessive and Compulsive Symptoms

Variable	Frequency (n= 40)	%
Obsessions		
Contamination	12	30.0
Aggressive	13	32.5
Sexual	1	2.5
Hoarding/saving	2	5.0
Magical/superstitious	4	10
Somatic	4	10
Miscellaneous	2	5.0
None	2	5.0
Compulsions		
Washing/cleaning	10	25.0
Checking	11	27.5
Repeating	2	5.0
Counting	3	7.5
Ordering/arranging	3	7.5
Games/superstitious	2	5.0
Rituals	4	10.0
Miscellaneous	5	12.5

Table 3.3

Subscale Scores for Parental Psychopathology Compared With Parental Critical and Empathy Scores

BSI Subscale	M (SD)	Parental Critical Score			Parental Empathy Score		
		r	*P*	BCa95% CI	*r*	*p*	BCa95% CI
Depression	51.54 (8.76)	-.104	.270	[-.38, .39]	-.120	.240	[-.39, .17]
Anxiety	52.59 (9.47)	-.022	.448	[-39, .42]	-.137	.210	[-.41, .18]
Obsessive compulsive	56.75 (10.46)	-.152	.185	[-51, .31]	-.294	.038	[-.58, .01]
Somatization	50.08 (9.21)	-.090	.298	[-.32, .28]	-.090	.298	[-.35, .20]
Interpersonal sensitivity	52.43 (11.02)	-.058	.367	[-35, .32]	-.192	.128	[-.46, .16]
Hostility	54.59 (9.28)	-.017	.461	[-.26, .38]	-.191	.128	[-.47, .10]
Phobia	50.05 (9.11)	-.003	.493	[-24, .32]	-.169	.158	[-.45, .12]
Paranoia	53.72 (9.77)	-.029	.433	[-.33, .37]	-.090	.299	[-.37, .23]
Psychoticism	52.97 (8.73)	.089	.300	[-.23, .50]	.154	.181	[-.17, .43]

Note. BC$_a$ 95% CI = Bias corrected accelerated 95% confidence interval.

the subscale scores. In summary, no significant relationship was found between parental psychopathology, using the BSI and BAI, and parent criticism or empathy.

3.2.2 Hypothesis 2: Parent relationship indicators will correlate with the young person's inflated responsibility.

No significant relationship was found between parental criticism and inflated responsibility, $r = .087$, $p = .298$, BCa 95% CI [-.12, .27] or between parental empathy and inflated responsibility, $r = -0.081$, $p = .309$, BCa 95% CI [-.35, .22].

3.2.3 Hypotheses 3: Parent relationship indicators will predict specific obsessions and compulsions.

Logistic regression analysis, with bootstrapping, as shown in Table 3.4, found no significant relationship between parental criticism and whether or not the young person's primary compulsion was that of washing/checking, $b = .09$, $p = .086$, BCa 95% CI [-.06, .36]. Similarly, logistic regression analysis, with bootstrapping, found no significant relationship between parental empathy and whether the young person's primary obsession was an aggressive one or not $b = -.058$, $p = .230$, BCa 95% CI [-.17, .03], as shown in Table 3.4.

Table 3.4

Logistic Regression Analysis Predicting OCD Obsessions and Compulsions from Parental Critical and Empathy Scores Score

	Compulsions and parental criticism				Obsessions and parental empathy			
			95% CI for OR				95% CI for OR	
	B (SE)	OR	Lower	Upper	*B (SE)*	OR	Lower	Upper
Included								
Constant	-.281 (.405)				-.260 (.551)			
Score	.090 (.066)	1.094	.962	1.244	-.058 (.057)	.943	.844	1.055

Note. SE= standard error; CI = confidence interval; OR = odds ratio.

3.2.4 Hypotheses 4: Parent relationship indicators will correlate with outcome, and this will vary according to parental involvement in treatment.

3.2.4.1 Parent relationship indicators and outcome in young people.

Initial analysis was completed by exploring the relationship between the critical score and the CYBOCS score at end of treatment. A significant negative relationship was found between parental critical score and the young person's end of treatment score, $r = -0.395$, $p = .007$, BCa 95% CI [-.58, -.10], meaning that higher levels of parental criticism at the start of treatment correlated with a lower OCD symptom score in the young person at the end of treatment. The relationship between the parental critical score and the outcome score, that is, the change in CYBOCS score from start to end of treatment, was also analysed. Correlational analysis found a significant positive relationship, $r = .402$, $p = 0.006$, BCa 95% CI [.01, .61]. This suggested that a higher level of parental criticism at session one of treatment, was associated with a greater change in a young person's CYBOCS score post-treatment i.e. better outcome.

This finding was explored further using linear regression with bootstrapping, to consider whether parental criticism predicted treatment outcome. A significant model emerged: $F(1,36) = 6.957$, $p = .012$, BCa 95% CI [.10, .72], indicating that parental criticism at start of treatment significantly predicted treatment better outcome, and accounted for 16.2% of the variance, see Table 3.5.

Table 3.5

Regression Analysis Predicting Treatment Outcome for Young People with

OCD from Parental Criticism

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	. 402	.162	.139	7.06365

A further regression which controlled for the start of treatment score was undertaken. In order to examine whether parental criticism significantly predicted treatment outcome, the start of treatment score was entered into the model first followed by the critical score. The results indicated that criticism was not a significant predictor of outcome, whilst controlling for pre-treatment CYBOCS scores, t = -2.75, p = .022, BCa 95% CI [-.69, .19] due to the confidence interval crossing zero (Table 3.6). Although bootstrapping techniques were used, this regression was completed using a sample of 37 participants and therefore results must be considered tentatively.

Within the whole sample no significant relationship was found between the empathy score and either the CYBOCS score at end of treatment, $r = .028$, $p = 0.869$, BCa 95% CI [-.32, .31], or the CYBOCS change score i.e. treatment outcome, $r = .031$, $p = 0.854$, BCa 95% CI [-.30, .38].

Table 3.6

Linear Model of Predictors of Treatment Outcome, with 95% Bias

Corrected and Accelerated Confidence Intervals Reported in Parentheses.

Confidence Intervals and Standard Errors Based on 5000 Bootstrap

Samples.

	b	SE B	β	p
Step 1				
(Constant)	-3.447 (-15.567, 8.506)	5.815		p = .557
CYBOCS start of treatment score	.682 (.184, 1.192)	.231	.441	p = .006
Step 2				
(Constant)	-.842 (-13.088, 9.5281)	5.430		p = .878
CYBOCS start of treatment score	.660 (.199, 1.186)	.213	.427	p = .004
Critical Score	-.419 (-.692, .197)	.152	-.379	p = .009

Note. Adjusted R^2 for Step 1 = .17; Adjusted R^2 for Step 2 = .30 (ps = .001)

3.2.4.2 Parent relationship indicators, outcome in young people and parental involvement in treatment.

Descriptive statistics of the two treatment groups, individual CBT (n = 22) and parent-enhanced CBT (n = 18) at pre-treatment, are displayed in Table 3.7. Between-groups analysis was initially conducted to identify any differences in outcome between groups at the end of treatment. Supplementary analysis of the treatment arm groups was then completed

using correlational and regression analysis, to look at differences between

the groups.

Table 3.7

Pre-Treatment Descriptive Statistics for Individual and Parent-Enhanced

CBT Groups

Variable	Measure	Individual CBT *M (SD)*	Parent-Enhanced CBT *M (SD)*
Parental critical score	Critical comments/ per min	4.67 (7.98)	4.88 (6.63)
Parental empathy score	Empathic comments/ per min	9.58 (8.07)	7.36 (4.88)
Parental psychopathology	BSI	50.50 (10.98)	57.17 (7.08)
Parental anxiety	BAI	4.85 (5.22)	6.88 (5.68)
Young person OCD severity	CYBOCS	24.40 (5.01)	23.88 (6.47)
Young person responsibility	RAS[a]	94.15 (30.25)	84.39 (32.81)

Note. BSI = Brief Symptoms Inventory; BAI = Beck Anxiety Inventory; CYBOCS = Children's Yale Brown Obsessive Compulsive Scale; RAS = Responsibility Attitudes Scale; [a]reversed score.

Between-groups analysis was completed, using an independent

samples t-test with bootstrapping, to examine differences in outcome

between groups. Both available end of treatment CYBOCS scores and

change CYBOCS scores for the young person's OCD symptoms were used.

This data was missing for two participants in the parent-enhanced CBT arm.

On average, participants who received individual CBT (M = 12.73, SE =

1.71) experienced lower scores on the CYBOCS at end of treatment than

those who received parent-enhanced CBT (M = 14.13, SE = 2.19).

However, this difference was not significant t(36) = -.509, p = .614, BCa

95% CI [-6.51, 3.91] and did not represent a significant effect size r = .08.

Outcome in the individual CBT group (M = 11.68, SE = 1.54) was on

average better than outcome in the parent-enhanced treatment group (M =

10.69, SE = 2.08), as defined by the change score on the CYBOCS, t(36) =

.393, p = .697, BCa 95% CI [-4.16, 6.28] and did not represent a significant

effect size r = .07. As no significant differences in outcome were found

between those who received parent-enhanced CBT versus those who

received individual CBT, within-groups analyses were completed to look at

possible influences on outcome, within the different treatment conditions.

Table 3.8

Relationship between Parent Relationship Indicators and Outcome of

Individual CBT for OCD

	Young person outcome					
	CYBOCS end of treatment score			CYBOCS change score		
Relationship Indicator	r	p	BCa 95% CI	r	p	BCa 95% CI
Critical score	-.436	.043	[-.60, -.25]	.473	.026	[-.18, .74]
Empathy score	.323	.142	[-.11, .62]	-.264	.235	[-.56, .11]

Note. CYBOCS = Children's Yale Brown Obsessive Compulsive Scale.

Within-groups analyses were completed using correlations and the

confidence intervals were estimated using non-parametric bootstrapping.

Within the group who received individual CBT (n = 22), where the young

person received treatment alone, the parent's critical score at the start of

treatment was negatively correlated with the end of treatment score on the

CYBOCS, *r* = -.436, *p* = .043, BCa 95% CI [-.60, -.25], but was not

correlated with the change score on the CYBOCS, r = .473, p = .026, BCa
95% CI [-.18, .74]. This indicates that in situations where the parent was not
involved in treatment, there was a relationship between parental criticism
and their child having lower levels of OCD symptoms at the end of
treatment. No further significant relationships were found between empathy
scores and treatment outcome, when receiving individual CBT, as shown in
Table 3.8.

The relationship between parental critical score and CYBOCS end of
treatment score was explored further initially using a bootstrapped linear
regression. A significant model emerged: F(1,20) = 4.689, p = .043, BCa
95% CI [-.86, -.02], explaining 19% of the variance in the end of treatment
score, as shown in Table 3.9.

Table 3.9

Regression Analysis Output for Parental Critical Score and Outcome in
Individual Treatment for OCD.

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.436	.190	.149	7.41745

A further regression which controlled for the start of treatment score
was completed in order to test the reliability of the significant model. In
order to examine whether parental criticism significantly predicted
treatment outcome for participants randomised into individual CBT, the
start of treatment score was entered into the model first followed by the
critical score. The results indicated that criticism was not a significant
predictor of outcome, whilst controlling for pre-treatment CYBOCS scores,
t = -2.40, p = .014, BCa 95% CI [-1.15, .83] due to the confidence interval

crossing zero (Table 3.10). However, caution is advised, as this regression, although making use of bootstrapping techniques, was completed using a sample of only 21 participants.

Table 3.10

Linear Model of Predictors of Treatment Outcome for Individual CBT, with 95% Bias Corrected and Accelerated Confidence Intervals Reported in Parentheses. Confidence Intervals and Standard Errors Based on 5000 Bootstrap Samples.

	B	SE B	β	p
Step 1				
(Constant)	-5.532 (-19.109, 8.971)	7.905		p = .492
CYBOCS start of treatment score	.748 (.242, 1.233)	.318	.466	p = .029
Step 2				
(Constant)	-3.223 (-15.534, 6.159)	7.164		p = .658
CYBOCS start of treatment score	.736 (.271, 1.356)	.285	.459	p = .018
Critical Score	-.431 (-1.151, .839)	.179	-.428	p = .026

Note. Adjusted R^2 for Step 1 = .17; Adjusted R^2 for Step 2 = .33 (ps = .008)

For those who received parent-enhanced CBT (n = 16), parental empathy score was negatively correlated with the end of treatment score on the CYBOCS, r = -.524, p = .037, BCa 95% CI [-.81, -.06] and positively correlated with the change score on the CYBOCS, r = .568, p = .022, BCa 95% CI [.18, .80]. This indicated that the higher the parent's empathy score in session one of therapy, the lower the child's OCD symptoms at the end of

treatment, as determined by the CYBOCS, when parents were included in treatment. Similarly, the second finding suggested where parents expressed more empathy towards their child this resulted in a better outcome for the young person in treatment. No significant relationships were found between parent critical scores and end of treatment score or treatment outcome when receiving parent-enhanced CBT, as shown in Table 3.11.

Table 3.11

Relationship between Parent Relationship Indicators and Outcome of Parent-Enhanced CBT for OCD

| | Young person outcome | | | | | |
| | CYBOCS end of treatment score | | | CYBOCS change score | | |
Relationship Indicator	*r*	*p*	BCa 95% CI	*r*	*p*	BCa 95% CI
Critical score	-.354	.179	[-.75, .48]	.322	.223	[-.26, .64]
Empathy score	-.524	.037	[-.81, -.06]	.568	.022	[.18, .80]

Note. CYBOCS = Children's Yale Brown Obsessive Compulsive Scale.

The relationship between empathy and both CYBOCS end of treatment score and CYBOCS change score was explored further using two simple regression analyses with non-parametric bootstrapping. Significant models emerged in both analyses. In the first model 22.3% of the variance in the end of treatment score was explained by parental empathy, $F(1,14) = 5.301$, p = .037, BCa 95% CI [-1.43, -.05], see Table 3.12. In model two, 27.4% of the variance in outcome, using the change score, was accounted

for by parental empathy at the start of treatment, where the young person's

parent is involved in treatment, see Table 3.13, $F(1,14) = 6.666$, $p = .022$,

BCa 95% CI [.16, 1.68].

Table 3.12

Regression Analysis Output for Parental Empathy Score and End of

Treatment Score in Parent-Enhanced CBT for OCD

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.524	.275	.223	7.72483

Table 3.13

Regression Analysis Output for Parental Empathy Score and Outcome in

Parent-Enhanced CBT for OCD

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568	.323	.274	7.08524

In order to examine whether parental empathy significantly

predicted treatment outcome for participants randomised into parent-

enhanced CBT, a further hierarchical regression was completed using end of

treatment scores on the CYBOCS as the dependent variable. In order to

control for pre-treatment scores on the CYBOCS, this variable was entered

on Step 1, while on Step 2, empathy scores were entered. The results

indicated that empathy was a significant predictor of outcome, whilst

controlling for pre-treatment CYBOCS scores, $t = -2.60$, $p = .014$, BCa 95%

CI [-1.53, -.05] (Table 3.14). This suggested that parental empathy

continued to be a robust predictor of end of treatment score. However,

caution is strongly advised, as this regression, although making use of

bootstrapping techniques, was completed using a sample of only 15

participants, and therefore must be considered highly tentative.

Table 3.14

Linear Model Of Predictors of Treatment Outcome for Parent-Enhanced

CBT, with 95% Bias Corrected and Accelerated Confidence Intervals

Reported in Parentheses. Confidence Intervals and Standard Errors Based

on 5000 Bootstrap Samples.

	b	SE B	β	p
Step 1				
(Constant)	-.965 (-27.218, 17.874)	9.157		p = .918
CYBOCS start of treatment score	.608 (-.221, 1.736)	.360	.412	p = .113
Step 2				
(Constant)	5.426 (-20.137, 18.480)	8.087		p = .514
CYBOCS start of treatment score	.626 (-.061, 1.712)	.303	.424	p = .059
Empathy Score	-.908 (-1.530, -.051)	.349	-.533	p = .022

Note. Adjusted R^2 for Step 1 = .11; Adjusted R^2 for Step 2 = .37 (ps = .02)

CHAPTER FOUR

Discussion

This section begins with a summary of the aims of the current study. The findings of the study are then reviewed and considered alongside the existing literature. A methodological critique of the study follows, and the strengths and weaknesses of the research are identified. Implications of the results are considered, in relation to theory and clinical practice. Finally, some suggestions regarding future research are made, followed by a summary of the study.

4.1 Research Aims

The aim of the current study was to examine whether a relationship exists between parent relationship indicators (criticism and empathy) and treatment outcome in OCD, and whether this varied according to parental involvement in treatment. This was completed using data from an existing RCT which looked at treatment effectiveness in an adolescent OCD population by comparing individual and parent-enhanced CBT. Further aims of the study were to evaluate whether parental psychopathology was associated with levels of parental criticism or empathy, using the same sample. Finally the study explored associations between parent relationship indicators, inflated responsibility in the young person, and specific OCD symptoms.

4.2 Summary of Findings and Previous Research

    4.2.1 Hypotheses findings.

    This section reviews the findings in relation to each hypothesis in turn.

    4.2.1.1 Hypotheses 1: Parental psychopathology will correlate with relationship indicators.

    There was no relationship between parental psychopathology and parental criticism or parental psychopathology and parental empathy. Therefore both hypothesis 1a and 1b were rejected.

    These findings are similar to those of Peris, Yadegar et al. (2012), who reported that there was no relationship between maternal psychopathology and maternal criticism amongst mothers of young people with OCD. However, the findings are inconsistent with Hibbs et al. (1991) who concluded that criticism was significantly related to psychiatric disorders in parents of young people with OCD. One possible reason for inconsistency across the studies is that Hibbs et al. (1991) used a different method for measuring criticism and parental psychopathology than both Peris, Yadegar et al.(2012) and the current study.

    The results from the study by Hibbs et al. (1991) were concluded from findings which related to the construct of high EE, which is comprised of both criticism and emotional over involvement, and constructs which Hibbs et al. (1991) failed to explore separately. On the other hand, Peris, Yadegar et al. (2012) explored criticism and emotional over involvement separately and reported that criticism did not relate to maternal psychopathology. Hibbs et al. (1991) also made use of a different sample of

parents, by including both fathers and mothers together in a single sample. When these groups (mothers and fathers) were explored separately, the relationship between parental psychopathology and criticism disappeared. However, the authors suggested this may have been due to the small numbers of parents with 'no-diagnosis'. The opposite of this was true for the current study as there was limited variability in parent psychopathology. This was considered a weakness and is discussed within section 4.5.2. It may therefore be hypothesised that relationships between parent psychopathology and other variables may be difficult to detect, due to too much or too little group variability, which may skew the data. Even though parents of young people with OCD are reported to have higher psychopathology than parents of children with no mental health difficulties (Derisley et al., 2005), there may not be significant variability in symptoms to enable true exploration of the role this variable plays within other constructs.

The relationship between empathy and parental psychopathology has not previously been considered within the OCD literature. Within the wider literature relating to child mental health, greater maternal empathy has been associated with fewer externalising disorder symptoms within the mother (Psychogiou et al., 2008). It was considered that findings in the current study might replicate older studies within the maternal depression literature, which suggested that greater parental empathy was related to lower levels of psychopathology (Longfellow et al., 1981). However, the current study failed to replicate these findings, which may be due to associated weaknesses within the current study, such as the measure of empathy itself,

as discussed in Sections 4.4 and 4.5, or the lack of variability in parental psychopathology, as previously discussed.

4.2.1.2 Hypotheses 2: Parent relationship indicators will correlate with the young person's inflated responsibility.

As there was no relationship between inflated responsibility and parental criticism or empathy, both hypotheses 2a and 2b were rejected.

This forms part of one of the hypothesised pathways to inflated responsibility and OCD (Salkovskis et al., 1999), however the findings of the current study do not support parental criticism as a plausible pathway. Although studies within the OCD field have not looked directly at this relationship, a recent model of criticism and OCD has suggested that experiences of criticism in childhood lead to a hypersensitivity to criticism (Pace et al., 2011). This may lead to sensitivity in particular belief domains (e.g. responsibility or perfectionism), with an aim to prevent further criticism. Within the literature Renshaw et al. (2006) identified a non-significant trend between how much a relative believes a patient is responsible for their actions and criticism from relatives of adult OCD sufferers. Experimental studies are perhaps more supportive of this relationship however they assess perceived parental criticism, rather than direct criticism (Lopatka & Rachman, 1995). Although these relationships have been hypothesised, the literature is limited and no direct exploration of parental criticism and inflated responsibility in the young person has been considered until now. Considering that Pace et al. (2011) has proposed that criticism may partially explain the aetiology of OCD, further research is needed in order to test the validity of this OCD pathway.

With regard to empathy, there was no relationship between parental empathy and inflated responsibility in the young person, in the current study. Within the developmental literature, Hoffman (1983) has suggested that interactions within the parent-child relationship may heighten a child's sense of empathy and guilt, which has been linked to inflated responsibility (Leith & Baumeister, 1998; Rachman, 1993). However, based upon the findings of this study, empathy was not considered to be related to, or a causal factor of, inflated responsibility. Bearing this in mind, and based upon ideas of Salkovskis et al. (1999) who considered inflated responsibility to have a moral underpinning, emotions which are related to empathy, such as guilt, may play a role in this relationship. A study testing out multiple factors which may contribute to the pathway may help in considering this relationship further. The finding may also be explained due to the methods used to measure parental empathy, as this could be considered to be a rather simplistic approach to a complex element of the parent-child relationship, which is influential from birth (Hoffman, 2001). Further research should be carefully considered, but would be beneficial in developing the evidence base for inflated responsibility beliefs in young people.

4.2.1.3 Hypotheses 3: Parent relationship indicators will predict specific obsessions and compulsions.

Hypotheses 3a and 3b were rejected as parental criticism did not predict specific cleaning or checking compulsions in the young person and parental empathy did not predict aggressive obsessions in the young person.

These findings are inconsistent with experimental studies supporting the relationship between perceived criticism and increased checking

behaviours (Mancini et al., 2004). Additionally, while ordering, washing and checking compulsions are predicted by perfectionism and rigidity in parents (Calvo et al., 2009), which has been considered to be associated with criticism (S. Clark & Coker, 2009). In addition, this finding did not support others who have suggested increasing responsibility which itself may be influenced by augmented criticism (Pace et al., 2011), increases checking behaviours (Arntz et al., 2007; Lopatka & Rachman, 1995; Shafran, 1997).

Although several studies have looked at similar aspects of parental relationship indicators and compulsions, there appear to be many variations between the studies, in terms of the design and measures, which limits the comparability of the findings. Existing studies appear to support this relationship yet the findings from the current study do not. There are several weaknesses within the current study which may have accounted for this apparent inconsistency. These will be discussed in more detail in Sections 4.4 and 4.5.

Similarly, the findings of the current study indicate that parents' ability to be empathic towards their child does not predict fear of harm coming to self or others for the young person. Whilst some studies have looked at compulsions and their relationship with the young person's morality (Doron et al., 2012; Fontenelle et al., 2009), and others have considered that morality of a young person is influenced by a parental figure (Psychogiou et al., 2008), few studies have considered obsessions, and none have considered aggressive obsessions. It would be helpful to consider this more closely, including the constructs of empathy which might be specific

to certain obsessions. For example shame might be linked to morally based obsessions such as concerns around God or thoughts of being a bad person, as this feature of empathy is linked to personal distress (Leith & Baumeister, 1998). Similarly, guilt may be linked to obsessions where there may be a threat of harm to others, as this aspect of empathy has been shown to be linked to perspective taking (Leith & Baumeister, 1998). Further research could explore this more explicitly by separating out obsessions and compulsions, and considering aspects which may be influential in their development.

4.2.1.4 Hypotheses 4: Parent relationship indicators will correlate with outcome, and this will vary according to parental involvement in treatment.

Hypothesis 4a was rejected as there was no significant relationship between parental criticism and treatment outcome. Initially, a significant relationship was found between parental criticism and outcome. However when start of treatment (or baseline) OCD symptom scores were controlled, this relationship disappeared. These conclusions should be considered tentatively, as although the sample size was similar to other studies, the findings are based upon a relatively small sample.

The initial finding was consistent with previous research which suggests that not all parental criticism has a negative impact upon treatment outcome, as some forms of criticism (i.e. non-hostile criticism), have been shown to improve outcome (Chambless, Bryan, Aiken, Steketee, & Hooley, 1999; Chambless & Steketee, 1999; Zinbarg et al., 2007). However, after controlling for other factors known to predict outcome (namely, pre-

treatment symptom severity), findings from this study suggest that parent criticism does not play a role in predicting treatment outcome for young people with OCD. This finding appeared to support some of the recent findings within child and adolescent OCD studies (Peris, Yadegar, et al., 2012; Przeworski et al., 2011) which failed to find a predictive role for parental criticism in post treatment OCD symptomology either within the whole sample or where parents were involved in CBT treatment. This is further supported within the broader literature (Kronmüller et al., 2008; Zinbarg et al., 2007).

Further exploration which considered the role of parental involvement in treatment partially replicated the initial finding within the individual CBT arm, but not at all in the parent-enhanced CBT arm. Hypothesis 4c, which considered that higher levels of criticism would be correlated with better outcome, where parents were not involved in treatment, was initially accepted. However, when start of treatment symptom severity was controlled, this relationship disappeared. Therefore it was concluded that criticism was not found to play a predictive role in OCD symptoms at end of treatment in those young people who received individual CBT. This is consistent with the evidence base that suggests criticism does not play a role in end of treatment symptom severity where the treatment of choice, CBT, has been offered (Peris, Yadegar, et al., 2012; Przeworski et al., 2011).

In terms of empathy, no relationship was found to exist between parental empathy and treatment outcome when looking at the group as a whole, and hypothesis 4b was therefore rejected. Initially, it was therefore

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considered that parental concern and understanding was not important in relation to treatment outcome. This is contrary to the evidence suggesting that warmth of the parents may play a role in outcome (Le Grange et al., 2011; O'Brien et al., 2006). When parental involvement in treatment was looked at more closely, empathy significantly predicted treatment outcome when the parents were involved in treatment. This continued to be relevant even when start of treatment symptoms, usually a good predictor of end of treatment symptoms, were controlled. Therefore, hypothesis 4d was accepted. Empathy accounted for almost a third of the variance in outcome, indicating that where parents were involved in treatment, a parent's ability to be empathic towards their child was a significant predictor of treatment outcome. There is minimal research looking at this relationship, but the finding has some support within the broader literature (O'Brien et al., 2006; Steketee, 1993) and could also be considered within the therapeutic alliance literature (Chiu, McLeod, Har, & Wood, 2009; Lambert & Barley, 2001; Shirk & Karver, 2003). The latter suggests that a good therapeutic alliance, consisting of empathy, warmth and congruence between patient and therapist (Lambert & Barley, 2001), can be a modest predictive factor of outcome. Given that within the parent-enhanced CBT arm the parent was encouraged to act as a co-therapist, it is not surprising that parental empathy predicted treatment outcome. Given the uniqueness of this finding, further research would be valuable.

Further understanding of the roles that parental criticism and empathy play in treatment outcome may also have significant clinical implications within the child and adolescent OCD population, especially

given the recommendations of parental involvement in treatment (National Institute for Health and Care Excellence, 2006). These recommendations are discussed in more detail within Section 4.6.2.

4.3 Overview of Previous Research and Key Findings

The significance of parental empathy in the prediction of treatment outcome suggests that involving parents who are empathic within treatment may be beneficial in ensuring positive treatment outcomes for adolescents who have OCD. The reverse is also the case; it may be a disadvantage to treatment outcome, to include a parent who is not empathic in therapy. This is a unique finding of the current study and supports findings by Steketee (1993) that a more positive outcome was likely to be associated with empathic relatives in adults with OCD. We could therefore hypothesise that parents who show greater empathy may be more likely to have a better alliance with their child. Given the literature within the framework of therapeutic alliance (Lambert & Barley, 2001), and the role empathy plays in the therapist-patient relationship, the parent-child relationship could be considered to be similar. This relationship is likely to be emphasised within therapy where parents are involved, and therefore further exploration of this finding is required to enhance the understanding of this relationship and its role in treatment outcome.

Initial findings suggested that parental criticism predicted better outcome, but closer analysis of the findings suggested this is not the case once other factors are controlled. However this analysis was completed on a small sample size and therefore the findings should be interpreted with caution. Similarly, where parents were more critical and not involved in

treatment, better outcome was observed initially. This appeared to support literature which proposes that involving critical relatives in treatment may be a disadvantage in relation to an individual's response to treatment (Steketee, Frost, et al., 1998) and that it may be more beneficial not to involve critical parents in family based treatment approaches (Eisler et al., 2007; Przeworski et al., 2011; Van Noppen & Steketee, 2003; Zinbarg et al., 2007). Whilst further exploration of this relationship found parental criticism did not predict treatment outcome for individual CBT, the analysis was once again completed on a sample size much smaller than that recommended to complete such analysis (Field, 2013). Despite this, the study concluded that parental criticism does not predict outcome when other factors are controlled and, regardless of treatment type, these are tentative findings. Although the current study findings appear to enhance the literature looking at environmental influences on treatment outcome in OCD, further research using a larger sample size would be valuable in further testing the relationship between these variables. Whilst having critical parents in treatment may be a barrier to recovery and therefore not having them present may enable a quicker recovery for the child (Eisler et al., 2007; Steketee, Frost, et al., 1998), the current study does not appear to support a role for parental criticism in relation to recovery for a child with OCD. It is however important to consider methodological weaknesses when interpreting the findings. This includes how the current study takes a different approach to measuring criticism, as a single construct, rather than one within the construct of EE, which may help to explain some of the differences in findings.

Although in other areas, such as PTSD, criticism and hostility have been shown to impact outcome (Tarrier et al., 1999), high EE has not been found to predict outcome within the more recent OCD literature when other factors were controlled (Peris, Yadegar, et al., 2012; Przeworski et al., 2011). However, high EE was found to predict post-treatment functioning (Przeworski et al., 2011). This suggests that further research is required to breakdown the construct of EE and allow for more meaningful exploration of factors influencing OCD symptomology and changes in OCD symptoms over time. Other research also suggests that criticism may be a dynamic concept, combining positive and negative components (Tracy et al., 1987). Therefore it may contribute to improvement and worsening of symptoms (Chambless & Steketee, 1999), perhaps accounting for the mixed picture of outcome within the field of OCD.

Further parental relationship indicator ratings during or at the end of treatment would also be helpful in order to assess whether a change in aspects of the child-parent relationship occur. This would also support the limited literature which has found a relationship between changes in these constructs and outcome in child and adolescent OCD (Peris, Sugar, et al., 2012). In relation to this, Vostanis et al. (1992) found that within the context of family therapy, parental criticism and emotional over involvement significantly reduced within the early stages of therapy, whilst warmth was found to increase later in therapy. Conversely, Steketee (1993) found that perceptions of the patient about their relative did not change significantly from pre-treatment to follow-up. Further research is therefore required to consider the role of the parent-child relationship in treatment outcome in

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child and adolescent OCD. Similarly, longer term follow up would be interesting to explore as to whether changes are maintained or if criticism or empathy impact upon the chance of relapse, which has been shown to have mixed findings within the literature (Hooley, 2007; Steketee & Chambless, 2001).

4.4 Methodological Critique

4.4.1 Design.

The design of the current study enabled a number of relationships to be tested, to enable exploration of the existing literature and investigation of newer areas within the field of adolescent OCD. The availability of longitudinal data made the study more robust as it enabled a dynamic assessment of variables. However a number of weaknesses were apparent, these included the correlational design, which did not allow for an exploration of causality and only considered the attribution of one other variable to treatment outcome. Also, the design did not include measures of a number of variables which may have had an impact upon outcome, such as the therapeutic alliance.

Although there was a comparison group within the study, an attention-control group was not included in the original design. An attention-control group would have generated a better understanding of the parental relationship indicators within the OCD group and enabled elimination of other variables relating to parental relationship indicators and outcome. By not including these aspects within the design, this may have increased the likelihood of type one errors occurring within the results, meaning incorrect relationships between variables may have been concluded

(Field, 2013). Finally given the study used data from an existing RCT, the CBT used within the trial may not be comparable to that delivered within clinical practice, due to increased resource, a manualised approach, additional supervision and scrutiny of therapy due to being part of a research trial. Thus, ecological validity may be been compromised. There is evidence that CBT delivered within the context of a clinical trial is typically associated with larger effect sizes (Ishikawa, Okajima, Matsuoka, & Sakano, 2007), with trials involving children showing larger effect sizes than those involving adults (Olatunji et al., 2012). Therefore, it cannot be assumed that the current findings would be replicated within routine clinical practice or other populations. This may therefore limit the transferability of findings.

4.4.2 Measures.

Although the study took a somewhat novel approach to coding parental relationship indicators, therapy recordings have been used previously as a method by which to code EE (Vostanis et al., 1992). This method, however, this has raised questions regarding the validity of the measure of the constructs of criticism and empathy within the current study. Although the coding categories were derived from an established measure of EE, adaptability was required in relation to applying these criteria to therapy recordings. The coding of empathy as a frequency score on its own was also new. This may have influenced the validity and reliability of this measurement within the study. Related to this, within existing measures of EE, the child is not in the room with the parent. Within the current study, this may have had an impact upon the parents' levels of criticism and

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empathy about their child. Similarly, the presence of the therapist may have had an impact upon the parent's comments within the session and they may not have expressed their true thoughts and feelings about their child. We could equally surmise that the more critical parents may not be influenced by the presence of others, as criticism is representative of the 'natural' relationship and they therefore do not feel a need to inhibit responses.

Although practical for the purposes of research, the measurement of parental relationship indicators using therapy recordings has both strengths and weaknesses. Arguably, it was a rather simplistic approach to measure a rather complex relationship. Given that the parent-child relationship is influential from birth (Hoffman, 2001), capturing it within an hour therapy session may not offer a true representation of the existing relationship. On the other hand, given the nature of the recording the interactions between parent and child are likely to be more realistic than those coded when the parent is interviewed or asked to talk specifically about their child for a set amount of time, as occurs in some of the existing measures of EE (Daley, 2001; Magana et al., 1986; Vaughn & Leff, 1976).

With regard to other measures used, these were all age appropriate. Although some of these were self-report, many of them were well established. The BSI (Derogatis, 1975) is a well-established measure of psychopathology, which has been validated within non-clinical populations. However, a more effective way to assess this may have been to use a valid diagnostic interview, as the questionnaire may not have had enough sensitivity to highlight psychopathology, this is discussed further within Section 4.5.2.

The primary outcome measure, the CYBOCS, is one of the most widely used measures of child and adolescent OCD within the literature, and is considered the 'gold-standard' in relation to assessing treatment outcome. This was also a researcher rated measure rather than a self-report measure, which may have increased validity and reliability.

4.4.3 Recruitment and participants.

A strength of the current study is the use of a clinical population within routine NHS services. As there were minimal exclusion criteria, the study could be considered to have good external validity. The sample of participants was probably characteristic of young people treated for OCD in the United Kingdom, however, there may be some difficulties regarding generalisability of findings due to the limited ethnic diversity within the sample, which was comprised only of white British young people, all with English as their first language.

The sample size recruited for this study was not dissimilar to studies looking at outcome in child and adolescent OCD populations (Peris, Yadegar, et al., 2012; Przeworski et al., 2011). Although the small sample size was predetermined, given the relatively low prevalence of OCD and required levels of recruitment within a fixed period of time, a new study was not feasible. The sample size was also limited, due to session one therapy recordings from the ROCKY trial not being available for ten participants. However as this was an exploratory study, the sample size was considered acceptable. As the ROCKY trial, and hence this study, was small and underpowered, a larger study may replicate findings or report different findings in relation to the roles that parental criticism and empathy have in

outcome. Findings of this study, especially where multiple regression analyses were completed on sample sizes that were considerably smaller than advised (Field, 2013), should therefore be interpreted with caution and inform the design of a larger confirmatory study.

The current study used both mothers and fathers in order to code parental relationship indicators. This was determined by participants and a predominance of mothers in the available sample. Although it may be more helpful to consider one or both parental relationship indicators, results are still comparable to existing studies. Previous studies have also acknowledged this to be a difficulty due to the preponderance of mothers attending the assessment phase (Przeworski et al., 2011). Given that the role of fathers in terms of the parent-child relationship, OCD and outcome has also been shown be significant (Przeworski et al., 2011), further investigation of both maternal and paternal roles would be beneficial.

The ROCKY trial, from which this study was derived, was a RCT. This design restricted recruitment as it required individuals to 'opt in' to treatment within the trial. Although it may not be possible to determine if this approach biased the sample, an 'opt out' approach may have resolved this. Although this method has been considered controversial, it has been adopted in other studies. It has also been considered to reduce sample bias (Junghans, Feder, Hemingway, Timmis, & Jones, 2005; Priest et al., 2012) and therefore has been increasingly used within low risk groups.

4.5 Strengths and Limitations

A number of strengths and limitations were evident within the study and these are discussed below. The general strengths and limitations of the ROCKY trial, from which this study was derived, are also discussed.

4.5.1 Strengths of the current study.

The study of parental relationship indicators or EE, and its relationship to treatment is important to explore within the field of child and adolescent OCD. As it allows for the exploration of the mechanisms that may make treatments offered more or less effective. To date, exploration of parental relationship indicators in relation to outcome in young people receiving individual or parent-enhanced CBT for OCD has not been completed, thus making the current study unique.

Within the ROCKY trial, from which the current study is derived, a number of notable strengths have been identified including the diagnosis of OCD at baseline using the 'gold-standard' diagnostic interview schedule, concealed randomisation and completion of assessments by blinded assessors (meaning that assessors could not be biased in relation to the treatment arm). CBT treatment within the ROCKY trial was also manualised and adherence to the treatment was assessed.

4.5.2 Limitations of the current study.

For a number of participants, there was more than one parent in the first session and in these cases only one parent was coded. However, the presence of another parent may have had an impact upon the comments of the parent being coded. For example, the presence of another parent could have limited the amount of time the coded parent had to speak. The other

parent may have also directly or indirectly influenced what the coded parent might say. In some cases, this was observed in the context of 'neutralising' the comments of the other parent. Where one parent may have appeared to be more critical, the other would attempt to qualify or balance expressions relating to the child. Although on the one hand this may have replicated the true experience of the parent-child relationship, it was certainly a limitation in terms of comparability and potential bias.

A further limitation was that the parents predominantly represented a 'normal' population, as parental psychopathology scores fell mainly within a non-clinical range. This meant there was lack of variability between scores and this may have had an effect upon the results. Therefore, a more sensitive measure of psychopathology or symptoms would be better placed to explore any relationship between parent psychopathology and parental relationship indicators, using a 'non-clinical' parent sample, in the future.

Although manualised, session one was notably different between therapists and impacted upon the information coded within the session. Some therapists took extensive histories or completed timelines of symptoms, which referred to information and events that were more than six months prior to therapy commencing. Therefore, these comments could not be coded due to the coding criteria. This meant that significant sections of the recording were unusable, for some participants. Further to this, age effects relating to the therapy delivered were not considered within this study, or the original study, in part due to limited sample size and predominance of adolescents within the sample. There is evidence that parental factors may be more or less influential depending upon the age of

the child and their stage of development (Verhoeven, Bögels, & Bruggen, 2012). With this in mind, we cannot assume that the current finding would be replicated with a younger population. Further research should therefore try to explore this and control for age effects upon treatment.

Within the ROCKY trial, diagnosis at the end of treatment was not assessed, using the ADIS. Although symptoms were assessed using questionnaires and researcher interviews, we do not know how many participants no longer met diagnostic criteria for OCD or anxiety disorders at the end of treatment.

4.6 Implications of Results

4.6.1 Overview of theoretical implications.

As no relationship was found between parental psychopathology and relationship indicators, the results of the current study cannot support research that posits that parental psychopathology is indicative or predictive of higher levels of criticism or a particular negative parenting style (Leinonen, Solantaus, & Punamäki, 2003; M. Smith, 2004). Within the field of child and adolescent OCD this remains inconclusive (Hibbs et al., 1991; Peris, Sugar, et al., 2012).

This study forms an extension to the inflated responsibility pathway proposed by Salkovskis et al. (1999), with the addition of parental psychopathology and empathy. Salkovskis et al. (1999) proposed that parental criticism is a potential causal factor in OCD development, and is relatively under researched within the OCD literature. This study failed to provide evidence to support this pathway, as parental criticism was not found to have a relationship with inflated responsibility within the young

person. Similarly, empathy was not found to be associated with this pathway. Salkovskis et al. (1999) proposed that cleaning and checking compulsions would correlate with this pathway, but relationships with these compulsions were not found to be significant within the current study. With this in mind, it could be considered that the pathway from parental criticism to inflated responsibility and specific compulsions proposed by Salkovskis et al. (1999) may need revising, as overall the findings of the study raised questions regarding this hypothesised pathway. However, the true nature of criticism in relation to the development of OCD is complex. It could be considered that criticism from infancy develops vulnerability to mental health difficulties, such as OCD and, when these symptoms emerge criticism plays a role in maintaining the disorder, but may not influence treatment outcome. Further studies are required to look at the hypothesis relating to parental criticism, and from this reconsider the pathways.

Currently, research suggests that where parents are critical, worse outcomes would be expected, especially where parents may be involved in therapy (Beauchaine, Webster-Stratton, & Reid, 2005; Eisler et al., 2007; Kronmüller et al., 2008; Zinbarg et al., 2007). The findings of the current study are inconsistent with this and instead similar to the findings of others who did not find a relationship between parental criticism and outcome in CBT treatment for young people with OCD (Peris, Yadegar, et al., 2012; Przeworski et al., 2011). However, it would appear that much of the literature explores the concept of criticism within EE and few examine criticism in detail. There is also evidence that good and bad criticism may exist and these may have different influences on outcome (Chambless &

Steketee, 1999; Zinbarg et al., 2007). Although initial findings indicated that criticism may have been related to better outcome, it could be that criticism represents an important marker regarding the parent taking interest in their child. This marker may then be an important factor in relation to treatment outcome, especially when the parent is not included in treatment with their child. In line with this, suggestions have been made that mild criticism may be a helpful motivator for young people during therapy, while hostile reactions and excessive criticism may interfere with progress in treatment for OCD (Steketee, Van Noppen, Lam, & Shapiro, 1998). Theoretical exploration of these ideas would appear to be useful as the current study fails to support a role for criticism in treatment outcome, but acknowledges that this relationship may be a complex one.

New findings within the field of child and adolescent OCD have emerged from the current study, relating to the role of parental empathy in treatment outcome, where the parent is involved in treatment. This is a distinctive finding, with theoretical significance. Although empathy of the young person was not directly measured we could hypothesise that this may have been elevated and its development is dependent upon how parents put pressure on their children to control their behaviour, in order to be considerate of others (Hoffman, 2001). It is difficult to ascertain whether these parents were over empathic and whether their empathy was a changeable or constant construct. The adoption of ideas proposed by Hoffman (2001), that parent interaction with the child may lead to empathic over-arousal, might aid understanding of the relationship between empathy and OCD. As such, we could theorise that empathic over-arousal may lead

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to the development of anxiety disorders in the young person, and that the parenting process needs to be 'just right' to guard against the development of anxiety in their child. However, for now this can only be hypothesised and further research exploring this construct more closely would be valuable, given the beneficial role empathy appeared to have in treatment outcome within the current study, where empathic parents were involved in treatment.

The current study has highlighted the complex relationship between parent and child factors and outcome in OCD, which no single theory can explain. The development of a robust biopsychosocial model of child and adolescent OCD would best represent the findings of the current study and those within the existing literature. The model should not only consider the pathways to the development of OCD but maintenance and factors influencing outcome, within biological, psychological and environmental frameworks.

4.6.2 Implications for clinical practice.

The current research is an exploratory study, within a novel area. Given the findings relating to the roles of parental criticism and empathy in treatment outcome, there may be implications with regard to assessment, formulation and intervention of OCD in children and adolescents.

With regard to the assessment of young people and their families, it may be important to consider the assessment of the parent-child relationship. Where possible and relevant it may be beneficial to incorporate this into the psychological formulation, which may help to inform the advantages and disadvantages of involving a young person's parent(s)

within the treatment programme. Based upon the findings of the current study, including critical parents within treatment may not make a difference in relation to outcome. Although the true nature of the impact of parental relationship indicators is not conclusive within this study, it perhaps highlights the need for therapists to be more attentive to decisions that are made within the treatment process, or perhaps not make assumptions based upon existing literature. Given current recommendations regarding family involvement in the treatment of OCD in children and adolescents (National Institute for Health and Care Excellence, 2006) and the finding relating to empathy within the current study, it may be considered that involving or not involving parents may be advantageous in particular instances. For example this may depend upon on the level of empathy the parent has for their child, and in relation to their symptoms. Findings of the current study continue to support the need to adopt an idiosyncratic approach to treatment within the child and adolescent OCD population.

There may also be implications for relapse. It has been suggested within the broader literature that parental criticism may lead to an increased chance of dropout from treatment or relapse of symptoms (Fernandez & Eyberg, 2009; Hooley, 2007; Hooley et al., 1986; Tompson et al., 2010). Although the current study did not look at long term follow up or relapse, it may be helpful to consider this in relation to treatment planning. It may also help in understanding the role of parental relationship indicators such as criticism or empathy in terms of prognosis of child and adolescent OCD, and whether specific adaptions need to be made to existing interventions.

4.7 Recommendations for Future Research

Replication of the current study, addressing the weaknesses highlighted, would certainly be beneficial. Primarily using a larger sample within a RCT or stand alone treatment trial with the addition of an attention-control group would enable further exploration of the roles of criticism and empathy. In particular, it would be useful to look at differences in relation to parent-enhanced and individual treatment. An additional study could explore this further by randomising young people to treatment based upon their parent's levels of empathy. Within any further research, a more robust measure of parental relationship indicators, or EE, should be used to help ascertain the reliability of the findings of the current study. Further exploration of long term outcome would aim to increase understanding of its relationship in the prognosis of OCD.

Given that both parents play a role in relation to parenting and as differences between mothers and fathers is inferred within the literature (Pereira, Barros, Mendonça, & Muris, 2014; Verhoeven et al., 2012), further research should try to address this. Completing parental relationship indicator measures with both the mother and father of the child, would enable greater exploration of the interaction between the mother-father-child relationships in relation to outcome. This could be completed by using measures of EE, or features of it.

Further exploration of the pathways to inflated responsibility, proposed by Salkovskis et al. (1999) is also needed, as the results of the current study do not appear to support one of the hypothesised pathways, at least in part. Other ideas relating to empathy and the roles of guilt and

shame, which have been hypothesised in relation to OCD symptomology, could also be considered within further research.

Future research could also explore the roles of parental criticism and empathy in relation to outcome. In particular, it would be useful to consider the contribution of these factors over time, along with the possible role that treatment plays in changing them. Finally, the adoption of a more experimental approach may help in detailed exploration of the relationships identified and possible causality.

4.8 Overall Summary and Conclusions

OCD in children and young people is a very serious, and often disabling, problem. OCD is thought to affect at least 1% of the child and adolescent population (Zohar, 1999), and is best understood within a biopsychosocial framework (Taylor & Jang, 2011). The emphasis of research has progressed from understanding the development of OCD, to the exploration of efficacious treatments. However, this is by no means conclusive and increasing attention is turning to social factors that influence treatment and the relapse of symptoms. Further research is required to enable a greater understanding of these factors and adaptions to improve treatment.

The main aim of this study was to investigate whether a relationship existed between parental relationship indicators and outcome in adolescent OCD, and whether this varied according to the level of parental involvement in treatment. The results provide some insight into the relationship between parental criticism, parental empathy and treatment outcome. A number of hypotheses regarding these relationships have been considered in relation to

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existing literature. A unique finding was that parental empathy was shown to predict better outcome, where parents were involved in treatment. This finding may have significant clinical implications, however, replication of the current study is required to investigate this further. In contrast to some of the existing literature, the study did not find a relationship between parental psychopathology and parental criticism or empathy, within its adolescent OCD population (Leinonen et al., 2003; M. Smith, 2004). Finally, as proposed by Salkovskis et al. (1999), the study aimed to explore associations between parental relationship indicators (namely criticism and empathy), inflated responsibility in the young person, and specific OCD symptoms. However, findings of the current study failed to support one of the hypothesised pathways to inflated responsibility, and therefore OCD.

This is the first study to explore the influence of parental relationship indicators upon outcome in young people receiving individual or parent-enhanced CBT. Given the exploratory nature of the study, findings should be interpreted with caution. Further studies that address the limitations of the current study would broaden the understanding of the role of parental relationship indicators in the prognosis of OCD, and its treatment outcome. This may then lead to the development of more effective interventions for children and adolescents with OCD, and their families.

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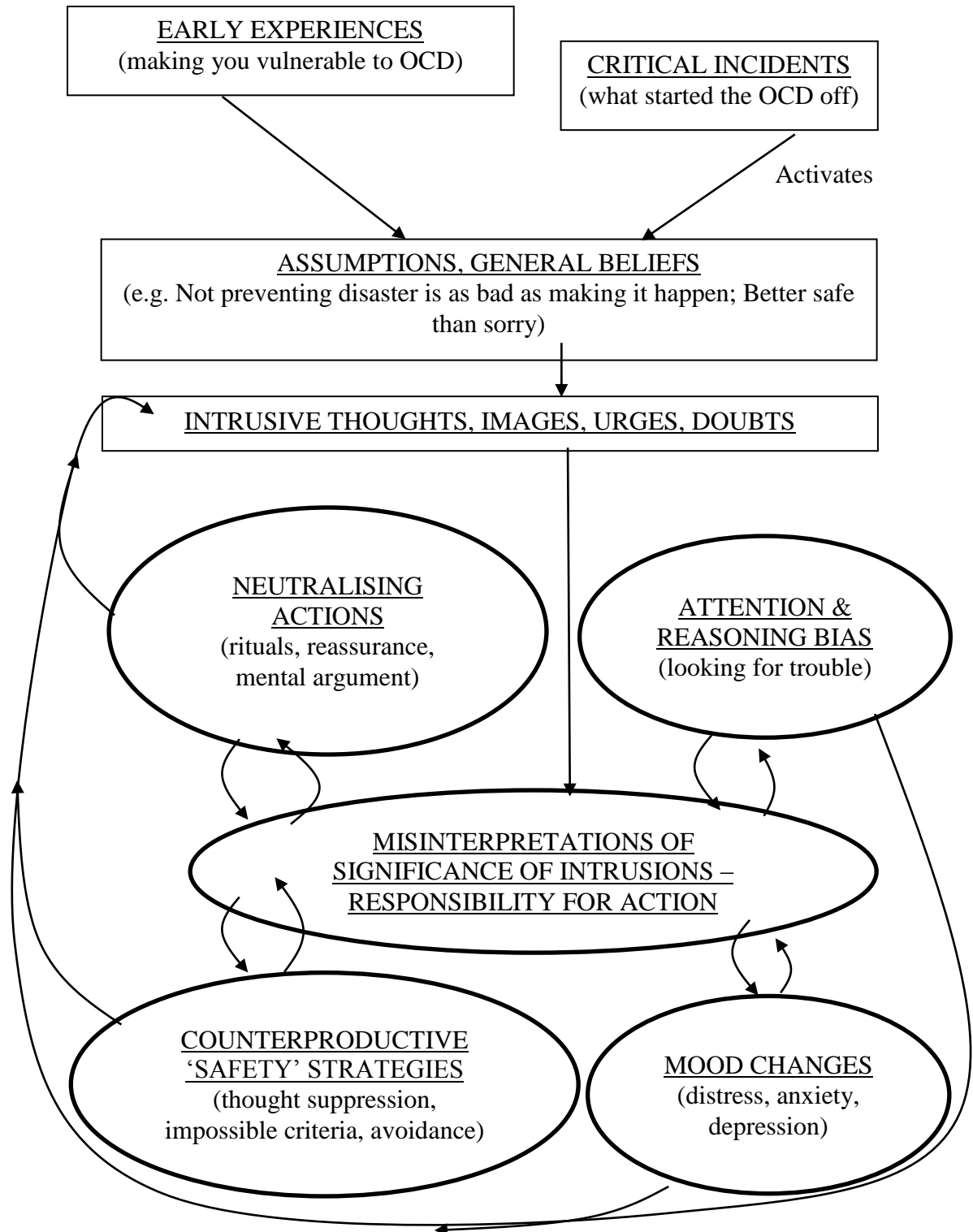psychopathology affect brain development during adolescence.

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Appendix A: Inflated responsibility model of OCD

Figure A1.1 Inflated responsibility model of OCD (Salkovskis et al., 2000).

An integrated schematic model describing the cognitive hypothesis of the

origins and maintenance of obsessional problems.

EARLY EXPERIENCES
(making you vulnerable to OCD)

CRITICAL INCIDENTS
(what started the OCD off)

Activates

ASSUMPTIONS, GENERAL BELIEFS
(e.g. Not preventing disaster is as bad as making it happen; Better safe than sorry)

INTRUSIVE THOUGHTS, IMAGES, URGES, DOUBTS

NEUTRALISING ACTIONS
(rituals, reassurance, mental argument)

ATTENTION & REASONING BIAS
(looking for trouble)

MISINTERPRETATIONS OF SIGNIFICANCE OF INTRUSIONS – RESPONSIBILITY FOR ACTION

COUNTERPRODUCTIVE 'SAFETY' STRATEGIES
(thought suppression, impossible criteria, avoidance)

MOOD CHANGES
(distress, anxiety, depression)

Appendix B: Proposed pathways to inflated responsibility in OCD

Table A1.1

Speculations On How The Origins Of Responsibility May Be Reflected In The Subsequent Development Of OCD (Salkovskis, Shafran, Rachman, & Freeston, 1999, p. 1067).

	Pathways				
	1	2	3	4	5
Most common critical period for belief to develop	Childhood	Childhood into puberty	Childhood into later adolescence	Adolescence/ adulthood	Across ages
Speed of onset of OCD	Gradual	Gradual	Gradual	Sudden	Sudden
Specific identifiable trigger	No	No	Sometimes	Yes	Yes
Association with depression	If criticism and/or guilt involved	Weak	Yes	Yes, via guilt	No, but may predispose
Predicted response to CBT	Below average	Below average	Average	Very variable	Above average
Symptoms likely to be over represented.	Broad based rituals to protect others, including strangers. Ordering and arranging?	Particularly rumination and perfectionism	Specific checking and washing to protect loved ones	Broad checking procedures to protect others' health and welfare	Many checking and idiosyncratic compulsions to protect others, including strangers

Note. CBT = Cognitive Behavioural Therapy.

Appendix C: The Children's Yale Brown Obsessive Compulsive Scale (CYBOCS)

TARGET SYMPTOM LIST FOR OBSESSIONS

Obsessions (Describe, listing by order of severity, with 1 being the most severe, 2 second most severe, etc.):

1. _____

2. _____

3. _____

4. _____

		None	*Mild*	*Moderate*	*Severe*	*Extreme*
1.	**Time spent on obsessions**	0	1	2	3	4
		No symptoms	*Long*	*Moderately long*	*Short*	*Extremely short*
1b.	**Obsession-free interval** (do not add to subtotal or total score)	0	1	2	3	4
2.	**Interference from obsessions**	0	1	2	3	4
3.	**Distress of obsessions**	0	1	2	3	4
		Always resists				*Completely yields*
4.	**Resistance**	0	1	2	3	4
		Complete control	*Much control*	*Moderate control*	*Little control*	*No control*
5.	**Control of obsessions**	0	1	2	3	4

Obsession subtotal (add items 1-5)   _____

TARGET SYMPTOM LIST FOR COMPULSIONS

Compulsions (Describe, listing by order of severity, with 1 being the most severe, 2 second most severe, etc.):

1. _____

2. _____

3. _____

4. _____

		None	*Mild*	*Moderate*	*Severe*	*Extreme*
6.	**Time spent on compulsions**	0	1	2	3	4
		No symptoms	*Long*	*Moderately long*	*Short*	*Extremely short*
6b.	**Compulsion-free interval** (do not add to subtotal or total score)	0	1	2	3	4
7.	**Interference from compulsions**	0	1	2	3	4
8.	**Distress of compulsions**	0	1	2	3	4
		Always resists				*Completely yields*
9.	**Resistance**	0	1	2	3	4
		Complete control	*Much control*	*Moderate control*	*Little control*	*No control*
10.	**Control of compulsions**	0	1	2	3	4

Compulsion subtotal (add items 6-10)   _____

CY-BOCS Totals (add items 1-10) _____
(also complete at top of page 1)

		Excellent				*Absent*
11.	**Insight into O-C Symptoms**	0	1	2	3	4

		None	*Mild*	*Moderate*	*Severe*	*Extreme*
12.	**Avoidance**	0	1	2	3	4
13.	**Indecisiveness**	0	1	2	3	4
14.	**Pathologic responsibility**	0	1	2	3	4
15.	**Slowness**	0	1	2	3	4
16.	**Pathologic doubting**	0	1	2	3	4

Clinician Ratings

17.	**Global Severity**	0	1	2	3	4	5	6
18.	**Global Improvement**	0	1	2	3	4	5	6

19.	**Reliability**	Excellent = 0	Good = 1	Fair = 2	Poor = 3

Appendix D: The Responsibility Attitude Scale (RAS)

ID No: Date:

RAS

1. I often feel responsible for things which go wrong.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

2. If I don't act when I see danger coming, then I am to blame for any consequences if it happens.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

3. I am too sensitive to feeling responsible for things going wrong.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

4. If I think bad things, this is as bad as doing bad things.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

5. I worry a great deal about the effects of things which I do or don't do.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

6. To me, not acting to prevent disaster is as bad as making disaster happen.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

7. If I know that harm is possible, I should always try to prevent it, however unlikely it seems.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

8. I must always think through the consequences of even the smallest actions.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

9. I often take responsibility for things which other people don't think are my fault.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

10. Everything I do can cause serious problems.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

11. I am often close to causing harm.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

12. I must protect others from harm.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

13. I should never cause even the slightest harm to others.
Totally   Agree Very   Agree   Neutral   Disagree   Disagree   Totally
Agree   Much   Slightly   Slightly   Very Much   Disagree

14. I will be punished for my actions.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

15. If I can have even a slight influence on things going wrong, then I must act to prevent it.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

16. To me, not acting where disaster is a slight possibility is as bad as making that disaster happen.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

17. For me, even slight carelessness is unforgiveable when it might affect other people.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

18. In all kinds of daily situations my inactivity can cause as much harm as deliberate bad actions.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

19. Even if harm is a very unlikely possibility, I should always try to prevent it at any cost.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

20. Once I think it is possible that I have caused harm, I can't forgive myself.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

21. Many of my past actions have been intended to prevent harm to others.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

22. I have to make sure other people are protected from all the consequences of the things I do.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

23. Other people should not rely on my judgement.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

24. If I cannot be certain I am blameless, I feel that I am to blame.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

25. If I take sufficient care, then I can prevent any harmful accidents.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

26. I often think that bad things will happen if I am not careful enough.

Totally Agree | Agree Very Much | Agree Slightly | Neutral | Disagree Slightly | Disagree Very Much | Totally Disagree

Appendix E: Transcription confidentiality agreement form

<u>Confidentiality Agreement</u>

In completing the work assigned and listening to NHS therapy recordings

from the Reducing Obsessions and Compulsions in Kids and Young people

(ROCKY) project I agree to:

1. Store the recordings on an appropriate device (which will be

   supplied) and not remove recordings from this at any time.

2. Ensure that none of the information heard on the recordings is shared

   or discussed with anyone other than those individuals directly

   involved*.

3. Ensure that any information discussed in the recordings is handled

   with the strictest confidentiality and no identifiable information is

   transferred to the transcriptions of the recordings.

Those involved include Harriet Mcilwham, Pete Langdon, Shirley Reynolds.

By signing below I have agreed to the above

Signature: _____ Name_____
Date: /   /

Main Researcher:

Signature: _____ Name_____
Date: /   /

Supervised by:

Signature: _____ Name_____

Date: /   /

Appendix F: Parent relationship indictor coding manual

Parent Relationship Indictor Manual

Coding of criticism, positive remarks and empathy of parents in session one

therapy tapes.

Harriet Mcilwham & Pete Langdon

Version 3 June 2013

Manual

The following document outlines the procedure for coding aspects of expressed emotion (EE) session one of therapy where a young person and their parent or carer are present. The coding outline is defined and where possible uses coding criteria from existing established measured of EE i.e. the five minute speech sample (Daley, Sonuga-Barke, & Thompson, 2003). However factors unique to the therapeutic environment are considered i.e. the presences of both the child and parent together.

Procedure

Coding Critical Comments

Coding For Themes (Strings of Critical Comments or Repetitions)

- Where the same topic is repeated is should not be coded more than once.

- Where there are several critical comments in the same string
  - if the comments relate to the same behaviour it should be coded as one
  - if they are unrelated behaviours then are coded as separate critical comments.

- Topics related to OCD should be coded into symptoms specific themes based on different behaviours or behavioural focus e.g. where a young person has concerns around contamination, if there is a critical remark about cooking in relation to this that would be

coded as one; if the parent then went onto another aspect i.e. cooking or washing then this would be coded separately.

- The critical comment MUST BE the opinion of the respondent.

- The behaviour being commented upon has to be <u>within the last six months</u>.

Table 1

Coding critical comments in therapy tapes

Method of identification	Examples of critical phases	Tone
Count frequency of statements which criticise or find fault with the young person based on *tone and critical phases* **n.b. if in doubt do not rate critical comments.**	Generally descriptive words indicative of a negative trait inherent in the young person e.g. aggression; irritability. 'Jane is a horrible girl' or 'Jack is a nightmare' 'He spits at me' (negative behaviour & tone)	It is possible to score a critical comment based on tone even of the statement doesn't not contain a critical comment. Once the baseline tone of the individual is established it is possible to identify fluctuations in tone which denote, depending upon their direction whether it is a critical comment.

Direct Criticism within the Therapy Session

This is when the parent might directly criticise the young person in the therapy session i.e. the young person might be describing and event and the parent may then correct the young person (based on tone and content) e.g. 'No peter it wasn't like that at all, you are wrong' would be a direct

criticism. 'But peter I'm not sure that was what happened, it seemed to me that you were upset', would not be a direct criticism.

These examples should not be coded within criticism frequency.

Coding Positive Remarks

Coding For Themes (Strings of Positive Remarks or Repetitions)

- Where the same topic is repeated is should not be coded more than once.

- Where there are several positive remarks in the same string it can be only counted as one.

- Topics related to OCD should be coded into symptoms specific themes based on different behaviours or behavioural focus e.g. where a young person has concerns around contamination, if there is a positive remark about cooking in relation to this that would be coded as one; if the parent then went onto another aspect i.e. cooking or washing then this would be coded separately.

- The comment cannot be quantified i.e. 'pretty good' or 'fairly bright'.

- Statements coined in negative way cannot be rated e.g. 'he's a great kid, not'.

- The behaviour being commented upon has to be <u>within the last six months</u> and <u>cannot be in the past tense.</u>

Table 2

Coding positive remarks in therapy tapes

Method of identification	Examples of positive phases	Tone
Count frequency of statements which praise, give approval or appreciation based *on tone and positive phases.* *n.b. if in doubt do not rate positive remarks.*	Generally descriptive words indicative of a positive trait inherent in the young person e.g. intelligence or sociability. 'Jack is very loving/extremely creative/ intelligent'	It is possible to score a positive remark based on tone even of the statement doesn't not contain positive content. Once the baseline tone of the individual is established it is possible to identify fluctuations in tone which may denote, depending upon their direction, a positive remark.

Coding Empathy

Coding for Themes (Strings of Empathic Remarks or Repetitions)

- When the same topic is repeated it should not be coded more than once

- Where there are several empathic remarks in the same string it can only be coded as one.

- Empathic statements can be counted regardless of being after or followed by critical comments

- The comment should display understanding or concern i.e. commenting on the mental state of the child.

- Where parents express concern in terms of how their actions impact the child, coding of empathy should be completed.

Table 3

Coding of empathy in therapy tapes

Method of identification	Examples of positive phases	Tone
Count frequency of statements which show understand of the young person or concern for them based *on tone and empathic phases.* **n.b. if in doubt do not rate emapthy.**	Generally descriptive words indicative of concern i.e. commenting on the mental state of the child. e.g. poor lucy, she must have been so worried about the germs, it must be so difficult for her.	It is possible to score empathy based on tone even of the statement doesn't not contain empathic content. Once the baseline tone of the individual is established it is possible to identify fluctuations in tone which may denote, depending upon their direction, empathy.

Timing

The amount of time the parent talks within the therapy session should be recorded to enable this to be controlled for at analysis. This should be recorded on the coding sheet and converted to a comparable score using the following calculation, with an answer ranging from 0-1:

Total amount of time parent talks during therapy session/total session time

CODING COVER SHEET

CASE ID: **TRANSCRIBER'S**

INITIALS:

RATER 1 INITALS: **RATER 2 INITIALS:**

Category	Rater 1	Rater 2	Difference	Notes
Critical Comments				
(Direct Criticism)				
Positive Remarks				
Empathy				

Notes

References

Daley, D., Sonuga-Barke, E. J., & Thompson, M. (2003). Assessing expressed emotion in mothers of preschool AD/HD children: Psychometric properties of a modified speech sample. *Br J Clin Psychol, 42*(Pt 1), 53-67. doi: 10.1348/014466503762842011

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Appendix G: East of England (Norfolk) national research ethics service approval letter

02 July 2012

Professor Shirley Reynolds
s.reynolds@uea.ac.uk
Professor of Clinical Psychology
University of East Anglia
School of Medicine
University of East Anglia
NR4 7QH

Dear Professor Reynolds

Study title:	The acceptability, feasibility and effectiveness of individual versus parent enhanced cognitive behaviour therapy in young people with obsessive compulsive disorder
REC reference:	08/H0310/72
Protocol number:	PB-PG-0706-10128
Amendment number:	**Substantial Amendment #25**
Amendment date:	08 June 2012
Amendment details:	(1) to extend the study for another 2.5 years (to 31 December 2013) to allow for further use of data collected (2) to rate and transcribe the number of critical and positive comments, using the Five Minute Speech Sample.

The above amendment was reviewed 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
CV	Harriet McIlwham	
CV	Dr P Langdon	
Letter of Introduction Dr Peter Langdon, research team member, from CI at UEA	From CI Professor Shirley Reynolds	01 June 2012
Letter of Introduction Harriet McIlwham, research team member, from CI at UEA	From CI Professor Shirley Reynolds	01 June 2012
FMSS revised Manual Daley, D.; Sonuga-Barke, E.J & Thompson, M.	Version 1, 2003	
Protocol	Version 5	01 June 2012
Notice of Substantial Amendment (non-CTIMPs)	Substantial Amendment #25	08 June 2012
Covering Letter	From CI Prof Shirley Reynolds	08 June 2012
FMSS revised coding sheet	Version 1 2003	

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.

08/H0310/72:	Please quote this number on all correspondence

Yours sincerely

PP. Har Hari Kaur

Michael Sheldon (Chair)
Chair

E-mail: har.hari.kaur@eoe.nhs.uk

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

review

Copy to: Norfolk and Suffolk NHS Foundation Trust
Ms Brenda Jones
Brenda.Jones@nwmhp.nhs.uk

NRES Committee East of England - Norfolk

Attendance at Sub-Committee of the REC meeting on 02 July 2012

Name	Profession	Capacity
Michael Sheldon (Chair)	Retired Clinical Psychologist	Lay
Dr Robert Stone	General Practitioner	Expert

Appendix H: Norfolk and Suffolk research and development approval letter

Norfolk and Suffolk **NHS**

NHS Foundation Trust

Research and Development Dept
Hellesdon Hospital
Drayton High Road
Norwich
NR6 5BE
Telephone 01603 421552
E mail: RDOfficemailbox@nsft.nhs.uk

Professor Shirley Reynolds
Professor of Clinical Psychology
School of Medicine, Health Policy & Practice
University of East Anglia
Norwich
NR4 7TJ

29th April 2013

Dear Shirley

Re: The acceptability, feasibility and effectiveness of individual versus parent enhanced cognitive behaviour therapy in young people with obsessive compulsive disorder, AMENDMENT 25 APPROVAL.

Further to the initial study approval letter, a substantial amendment has been received for research governance review and approval. We understand that Ethical Approval for the amendment was granted on 2nd July 2012 by NRES Committee East of England – Norfolk and that this amendment is requested on a no-cost extension basis.

I am pleased to inform you that the amendments have been approved, and so may proceed. This approval is valid in the following organisation:

- **Norfolk and Suffolk NHS Foundation Trust**

The final list of amendment documents reviewed and approved are as follows:

Document	Version #	Date
Protocol	5	01.06.12

Your research governance approval is valid providing you comply with the conditions set out below:

1. You notify the Research and Development Office should you deviate or make changes to the approved documents.
2. You alert the Research and Development Office by contacting me, if significant developments occur as the study progresses, whether in relations to the safety of individuals or to scientific direction.
3. You complete and return the standard annual self-report study monitoring form when requested to do so at the end of each financial year. Failure to do this will result in the suspension of research governance approval.
4. You comply fully with the Department of Health Research Governance Framework, and in particular that you ensure that you are aware of and fully discharge your responsibilities in

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respect to Data Protection, Health and Safety, financial probity, ethics and scientific quality. You should refer in particular to Sections 3.5 and 3.6 of the Research Governance Framework.

5. You ensure that all information regarding patients or staff remains secure and strictly confidential at all times. You ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice, Data Protection Act and Human Rights Act. Unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

If you require any further confirmation, please contact me at the above address.

Yours sincerely,

Dr Jon Wilson
Deputy Medical Director (Research)

Appendix I: ROCKY trial participant information sheets

Information Sheet for Young People (Under 16)
Reducing Obsessions and Compulsions in Kids and Young People (ROCKY)

We are inviting you to take part in the ROCKY project. This information sheet is to help you decide if you want to take part. Please take time to read it carefully and discuss it with your family. We have given your parent/guardian similar information. If there is anything that is not clear, or that you would like to know more about please ask.

What is the purpose of the project?
The aim of this project is to find out if involving parents in therapy with young people who have obsessive compulsive disorder (OCD) is more effective than individual therapy with the young person. We do not know if involving parents very closely in therapy is more helpful than involving them less closely and this project is designed to find that out. We also want to find out how much treatment for OCD costs the NHS and families.

Why have I been chosen?
We have asked you to take part in this project because you have obsessive compulsive disorder (OCD) and you have come to get help from the team at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House.

Do I have to take part?
No. If you do not take part you will still receive normal care at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House.

What will happen to me if I take part?
If you decide to take part in the study you will receive psychological treatment (Cognitive Behaviour Therapy – CBT) for obsessive compulsive disorder. This is recommended as the best available treatment for OCD.

We want to see if including a parent in therapy is more helpful than individual therapy for the young person. Half of the young people in the project will receive CBT with one of their parents involved in every session and involved in homework between sessions. Half of the young people will receive individual CBT. In both types of treatment, parents will meet their child's therapist, be kept informed of their child's progress and will be able to discuss any concerns.

To make it a fair comparison of the two types of treatment we will decide which young person receives which type of treatment *at random*. This means that everyone has a 50% chance of receiving either version of treatment. Randomisation is a very important principle of research into treatments. Please ask if you would like to discuss it further. It is important that you understand what randomisation means for you and that you are happy to take part.

As you are under 16, if you want to take part in the project we will ask your parent to give consent. We will also ask you to sign and say that you are willing to take part. You will then come back to the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House, for an interview to confirm if you have OCD or not. Following this you will be asked to complete some questionnaires and an interview, this should take no longer than an hour and a half. To see how you have got on with your therapy we will repeat the questionnaires and interview at the end of treatment and after six months. At various stages before and after treatment we will also interview you and your parent, for about half an hour, to help us establish the cost of your treatment and of having OCD. We can help with this if you find any of it difficult.

When you consent you will be randomised to decide what therapy you will receive and treatment will begin. With your permission, we will audiotape your therapy sessions to check you are getting the best treatment.

Please turn over

During therapy we will ask you and your parent how things are going. Once treatment has ended we will interview some young people to find out what they thought of their treatment, with permission this will be audio taped and should last no longer than thirty minutes. Further to this some young people may be asked to have a more detailed face-to-face interview.

What do I have to do if I want to take part in the project?
Before we can include you in the project one of your parents needs to provide written consent. This proves that they are happy to take part and that you have had a chance to talk about the research. We will also ask you if you are happy to take part and you will sign a form to give your agreement.

What are the possible disadvantages and risks of taking part?
We do not think there are any important disadvantages or risks of taking part.

What are the possible benefits of taking part?
By taking part in the project you will help improve treatment for other young people with OCD. You will also receive a quarterly newsletter, with information about the ROCKY project, Obsessive Compulsive Disorder, useful information and competitions.

Will my taking part in the research be kept confidential?
We will keep all information about you private and safe. The project materials will be kept in a secure filing cabinet in the centre and short summaries will appear in your clinical notes. Project information kept on a computer will be password protected and will not include information that could identify you or your family. Only named researchers on this study will have access to your clinical and project information. With your agreement we will tell your GP that you are taking part in this project.

Who is organising and funding the project?
The project is being funded by the National Institute of Health Research as part of its Research for Patient Benefit Programme. Professor Shirley Reynolds from the Medical School at UEA is the Chief Investigator. The Principal Investigator for Norfolk is Dr Jo Derisley, Consultant Clinical Psychologist at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House. However from May 2009 until May 2010 Professor Shirley Reynolds will be the acting Principal Investigator for Norfolk. Dr Sarah Clark, a Clinical Psychologist at the Child Health Centre, Bury St Edmunds, is the project Principal Investigator for Suffolk.

Who has reviewed the project?
The project has been reviewed and approved by the National Institute of Health Research, by the Mental Health Research Network who will assist in project management, by the Norfolk Research Ethics Service, and by the Norfolk and Waveney Mental Health Trust.

Thank you for reading this – we hope you will decide to join the ROCKY project.

If you would like to take part in the project or talk to someone about it please contact your ROCKY researcher: Harriet Mcilwham, Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House Tel: 01603 421950 Email: rockyproject@uea.ac.uk
Alternatively, if you would like further information about the project you can contact Professor Shirley Reynolds (Chief Investigator ROCKY project) School of Medicine, Health Policy and Practice, University of East Anglia, Norwich, Norfolk, NR4 7TJ. Tel: 01603 593312: Email: s.reynolds@uea.ac.uk

Information Sheet for Parents (child under 16)
Reducing Obsessions and Compulsions in Kids and Young People (ROCKY)

We are inviting you and your child to take part in the ROCKY project. This information sheet is to help you decide if you want to take part. Please take time to read it carefully and discuss it with the rest of your family. Ask us if there is anything that is not clear or if you would like more information. We have also provided information for your child and would be very grateful if you would discuss it together.

What is the purpose of the project?
The aim of this project is to find out how best to involve parents/ guardians in therapy with children and young people who have obsessive compulsive disorder (OCD). OCD is a very distressing disorder for the child and can be very disruptive and distressing to their family. There are effective ways of treating OCD in children and young people. However, we do not know if involving parents very closely in therapy is more helpful than involving them less closely and this project is designed to find that out. We also want to find out how much treatment for OCD costs the NHS and families.

Why have we been chosen?
We have asked you to take part in this project because you have a child who has obsessive compulsive disorder and you are now asking for help.

Do we have to take part?
No. If you do not take part you will still receive normal care at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House.

What will happen to us if we take part?
If you decide to take part in the project your child will receive psychological treatment (Cognitive Behaviour Therapy – CBT) for obsessive compulsive disorder. This is recommended as the best available treatment for OCD by the National Institute of Clinical Excellence (NICE) guidelines.

We want to see if there is any difference between therapy with a parent closely involved compared with therapy where a parent is less closely involved. Half of the children and young people who take part will receive CBT with one of their parents involved in every session and involved in homework between sessions. Half of the children will receive CBT with their parent less closely involved. In both types of treatment, parents will be kept informed of their child's progress and will be able to discuss any concerns with their child's therapist.

To make it a fair comparison of the two types of treatment we will decide which child / young person receives which type of treatment at random. This means that everyone has a 50% chance of receiving each version of CBT. Randomisation is a very important principle of research into treatments. Please ask if you would like to discuss it further. It is important that you understand what randomisation means for you and your child, and that you are happy to take part.

If you agree to take part in the project and sign the consent form, you and your child will be invited back to the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House. for an interview to confirm if your child has OCD or not. Following this you will be asked to complete some questionnaires and an interview, this should take no longer than an hour and a half. To see how your child has got on in therapy we will repeat the questionnaires and interview at the end of your child's treatment and six months after you finish your treatment. At various stages before and after treatment we will also interview you your child, for about half an hour, to help us establish the cost of your child's treatment and of them having OCD. We can help with this if you find any of it difficult.

Please turn over

When you consent you will be randomised to decide what therapy your child will receive and treatment will begin. With your permission, we will audiotape your child's therapy sessions to check they are getting the best treatment.

During therapy we will ask you and your child how things are going. Once treatment has ended we will interview some young people and parents to find out what they thought of their treatment, with permission this will be audio taped and should last no longer than thirty minutes. Further to this some parents and young people may be asked to have a more detailed face-to-face interview.

What do I have to do if I want to take part in the project?
As your child is under 16, before we can include you in the project we need you to provide written consent. This proves that you are happy for yourself and you child to take part and that you have had a chance to talk about the project. We will also ask your child if they are happy to take part and they will sign a form to give their agreement.

What are the possible disadvantages and risks of taking part?
We do not think there are any important disadvantages or risks of taking part. Some parents will be asked to take a more active part in their child's therapy and this may be time-consuming and inconvenient for them.

What are the possible benefits of taking part?
By taking part in the project you will help improve treatment for other you people with OCD. You will also receive a quarterly newsletter for you and your child, with information about the ROCKY project, Obsessive Compulsive Disorder, other OCD research, news and helpful information and a competition for your child.

Will my taking part in the project be kept confidential?
We will keep all information about you private and safe. The project materials will be kept in a secure filing cabinet in the centre and only short summaries of the materials will appear in your clinical notes. Project information kept on a computer will be password protected and will not include information that could identify you or you child. Only named research workers on this study will have access to the clinical and project information. With your consent we will tell your GP that you and your child are involved in this project.

Who is organising and funding the project?
The project is being funded by the National Institute of Health Research as part of its Research for Patient Benefit Programme. Professor Shirley Reynolds from the Medical School at UEA is the Chief Investigator. The Principal Investigator for Norfolk is Dr Jo Derisley, Consultant Clinical Psychologist at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House. However from May 2009 until May 2010 Professor Shirley Reynolds will be the acting Principal Investigator for Norfolk. Dr Sarah Clark, a Clinical Psychologist at the Child Health Centre, Bury St Edmunds, is the project Principal Investigator for Suffolk.

Who has reviewed the project?
The project has been reviewed and approved by the National Institute of Health Research, by the Mental Health Research Network who will assist in project management, by the Norfolk Research Ethics Service, and by the Norfolk and Waveney Mental Health Trust.

Thank you for reading this – we hope you will decide to join the ROCKY project. If you would like to take part in the project or talk to someone about it please contact your ROCKY researcher: Harriet McIlwham Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House. Tel: 01603 421950 Email: rockyproject@uea.ac.uk
Alternatively, if you would like further information about the project you can contact Professor Shirley Reynolds (Chief Investigator ROCKY project) School of Medicine, Health Policy and Practice, University of East Anglia, Norwich, Norfolk, NR4 7TJ Tel: 01603 593312: Email: s.reynolds@uea.ac.uk

Information Sheet for Young People (Over 16)
Reducing Obsessions and Compulsions in Kids and Young People (ROCKY)

We are inviting you to take part in the ROCKY project. This information sheet is to help you decide if you want to take part. Please take time to read it carefully and discuss it with your family. We have given your parent/guardian similar information. If there is anything that is not clear, or that you would like to know more about please ask.

What is the purpose of the project?
The aim of this project is to find out if involving parents in therapy with young people who have obsessive compulsive disorder (OCD) is more effective than individual therapy with the young person. We do not know if involving parents very closely in therapy is more helpful than involving them less closely and this project is designed to find that out. We also want to find out how much treatment for OCD costs the NHS and families.

Why have I been chosen?
We have asked you to take part in this project because you have obsessive compulsive disorder (OCD) and you have come to get help from the team at the Child and Adolescent Mental Health Services, Mary Chapman House.

Do I have to take part?
No. If you do not take part you will still receive normal care at the Child and Adolescent Mental Health Services, Mary Chapman House.

What will happen to me if I take part?
If you decide to take part in the study you will receive psychological treatment (Cognitive Behaviour Therapy – CBT) for obsessive compulsive disorder. This is recommended as the best available treatment for OCD.

We want to see if including a parent in therapy is more helpful than individual therapy for the young person. Half of the young people in the project will receive CBT with one of their parents involved in every session and involved in practise between sessions. Half of the young people will receive individual CBT. In both types of treatment, parents will meet their child's therapist, be kept informed of their child's progress and will be able to discuss any concerns.

To make it a fair comparison of the two types of treatment we will decide which young person receives which type of treatment _at random_. This means that everyone has a 50% chance of receiving either version of treatment. Randomisation is a very important principle of research into treatments. Please ask if you would like to discuss it further. It is important that you understand what randomisation means for you and that you are happy to take part.

If you want to take part in the project we will ask you to sign a consent form to say that you are willing to take part. We will also ask your parent if they are also willing to take part. You will then be invited back to the Child and Adolescent Mental Health Services, Mary Chapman House, for an interview to confirm if you have OCD or not. Following this you will be asked to complete some questionnaires and an interview, this should take no longer than an hour and a half. To see how you have got on with your therapy we will repeat the questionnaires and interview at the end of treatment and after six months. At various stages before and after treatment we will also interview you and your parent, for about half an hour, to help us establish the cost of your treatment and of having OCD. We can help with this if you find any of it difficult.

When you consent you will be randomised to decide what therapy you will receive and treatment will begin. With your permission, we will audiotape your therapy sessions to check you are getting the best treatment.

Please turn over

During therapy we will ask you and a parent how things are going. Once treatment has ended we will interview some young people to find out what they thought of their treatment, with permission this will be audio taped and should last no longer than thirty minutes. Further to this some young people may be asked to have a more detailed face-to-face interview.

What do I have to do if I want to take part in the project?
Before we can include you in the project you need to provide written consent to show that you are willing to take part and that you have had a chance to talk about the research. We will also invite your parent to take part and to give their views. They will also be asked to give consent.

What are the possible disadvantages and risks of taking part?
We do not think there are any important disadvantages or risks of taking part.

What are the possible benefits of taking part?
By taking part in the project you will help improve treatment for other young people with OCD. You will also receive a quarterly newsletter, with information about the ROCKY project, Obsessive Compulsive Disorder, useful information and competitions.

Will my taking part in the research be kept confidential?
We will keep all information about you private and safe. The project materials will be kept in a secure filing cabinet in the centre and short summaries will appear in your clinical notes. Project information kept on a computer will be password protected and will not include information that could identify you or your family. Only named researchers on this study will have access to your clinical and project information. With your agreement we will tell your GP that you are taking part in this project.

Who is organising and funding the project?
The project is being funded by the National Institute of Health Research as part of its Research for Patient Benefit Programme. Professor Shirley Reynolds from the Medical School at UEA is the Chief Investigator. The Principal Investigator for Norfolk is Dr Jo Derisley, Consultant Clinical Psychologist at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House. However from May 2009 until May 2010 Professor Shirley Reynolds will be the acting Principal Investigator for Norfolk. Dr Sarah Clark, a Clinical Psychologist at the Child Health Centre, Bury St Edmunds, is the project Principal Investigator for Suffolk.

Who has reviewed the project?
The project has been reviewed and approved by the National Institute of Health Research, by the Mental Health Research Network who will assist in project management, by the Norfolk Research Ethics Service, and by the Norfolk and Waveney Mental Health Trust.

Thank you for reading this – we hope you will decide to join the ROCKY project.
If you would like to take part in the project or talk to someone about it please contact your ROCKY researcher: Harriet McIlwham Child and Adolescent Mental Health Services, Mary Chapman Tel: 01603 421950 Email: rockyproject@uea.ac.uk Alternatively, if you would like further information about the project you can contact Professor Shirley Reynolds (Chief Investigator ROCKY project) School of Medicine, Health Policy and Practice, University of East Anglia, Norwich, Norfolk, NR4 7TJ. Tel: 01603 593312: Email: s.reynolds@uea.ac.uk

Information Sheet for Parents (young person over 16)
Reducing Obsessions and Compulsions in Kids and Young People (ROCKY)

We are inviting you and your child to take part in the ROCKY project. This information sheet is to help you decide if you want to take part. Please take time to read it carefully and discuss it with the rest of your family. Ask us if there is anything that is not clear or if you would like more information. We have also provided information for your child and would be very grateful if you would discuss it together.

What is the purpose of the project?
The aim of this project is to find out how best to involve parents/ guardians in therapy with children and young people who have obsessive compulsive disorder (OCD). OCD is a very distressing disorder and can be very disruptive to families. There are effective ways of treating OCD in young people. However, we do not know if involving parents closely in therapy is more helpful than involving them less closely and this project is designed to find that out. We also want to find out how much treatment for OCD costs the NHS and families.

Why have we been chosen?
We have asked you to take part in this project because you have a child who has obsessive compulsive disorder and you are now asking for help.

Do we have to take part?
No. If you do not take part you will still receive normal care at the Child and Adolescent Mental Health Services, Mary Chapman House.

What will happen to us if we take part?
If you decide to take part in the project your child will receive psychological treatment (Cognitive Behaviour Therapy – CBT) for obsessive compulsive disorder. This is recommended as the best available treatment by the National Institute of Clinical Excellence (NICE) guidelines.

We want to see if there is any difference between therapy with a parent closely involved compared with therapy where a parent is less closely involved. Half of the children and young people who take part will receive CBT with one of their parents involved in every session and involved in homework between sessions. Half of the children will receive CBT with their parent less closely involved. In both types of treatment, parents will be kept informed of their child's progress and will be able to discuss any concerns with their child's therapist.

To make it a fair comparison of the two types of treatment we will decide which child / young person receives which type of treatment at random. This means that everyone has a 50% chance of receiving each version of CBT. Randomisation is a very important principle of research into treatments. Please ask if you would like to discuss it further. It is important that you understand what randomisation means for you and your child, and that you are happy to take part.

If you agree to take part in the project and sign the consent form, you and your child will be invited back to the Child and Adolescent Mental Health Services, Mary Chapman House, for an interview to confirm if your child has OCD or not. Following this you will be asked to complete some questionnaires and an interview, this should take no longer than an hour and a half. To see how your child has got on in therapy we will repeat the questionnaires and interview at the end of your child's treatment and six months after you finish your treatment. At various stages before and after treatment we will also interview you your child, for about half an hour, to help us establish the cost of your child's treatment and of them having OCD. We can help with this if you find any of it difficult.

Please turn over

When you consent you will be randomised to decide what therapy your child will receive and treatment will begin. With your permission, we will audiotape your child's therapy sessions to check they are getting the best treatment.

During therapy we will ask you and your child how things are going. Once treatment has ended we will interview some young people and parents to find out what they thought of their treatment, with permission this will be audio taped and should last no longer than thirty minutes. Further to this some parents and young people may be asked to have a more detailed face-to-face interview.

What do I have to do if I want to take part in the project?
As your child is over 16, he/she is able to consent for their involvement in the project. However we also ask for your consent, this proves that you are happy for yourself and you child to take part and that you have had a chance to talk about the project.

What are the possible disadvantages and risks of taking part?
We do not think there are any important disadvantages or risks of taking part. Some parents will be asked to take a more active part in their child's therapy and this may be time-consuming and inconvenient for them.

What are the possible benefits of taking part?
By taking part in the project you will help improve treatment for other young people with OCD. You will also receive a quarterly newsletter for you and your child, with information about the ROCKY project, Obsessive Compulsive Disorder, other OCD research, news and helpful information and a competition for your child.

Will my taking part in the project be kept confidential?
We will keep all information about you private and safe. The project materials will be kept in a secure filing cabinet in the centre and only short summaries of the materials will appear in your clinical notes. Project information kept on a computer will be password protected and will not include information that could identify you or you child. Only named research workers on this study will have access to the clinical and project information. With your consent we will tell your GP that you and your child are involved in this project.

Who is organising and funding the project?
The project is being funded by the National Institute of Health Research as part of its Research for Patient Benefit Programme. Professor Shirley Reynolds from the Medical School at UEA is the Chief Investigator. The Principal Investigator for Norfolk is Dr Jo Derisley, Consultant Clinical Psychologist at the Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House. However from May 2009 until May 2010 Professor Shirley Reynolds will be the acting Principal Investigator for Norfolk. Dr Sarah Clark, a Clinical Psychologist at the Child Health Centre, Bury St Edmunds, is the project Principal Investigator for Suffolk.

Who has reviewed the project?
The project has been reviewed and approved by the National Institute of Health Research, by the Mental Health Research Network who will assist in project management, by the Norfolk Research Ethics Service, and by the Norfolk and Waveney Mental Health Trust.

Thank you for reading this – we hope you will decide to join the ROCKY project.

If you would like to take part in the project or talk to someone about it please contact your ROCKY researcher: Harriet McIlwham, Child and Adolescent Mental Health Services (CAMHS), Mary Chapman House Tel: 01603 421950 Email: rockyproject@uea.ac.uk
Alternatively, if you would like further information about the project you can contact Professor Shirley Reynolds (Chief Investigator ROCKY project) School of Medicine, Health Policy and Practice, University of East Anglia, Norwich, Norfolk, NR4 7TJ. Tel: 01603 593312: Email: s.reynolds@uea.ac.uk

Appendix J: ROCKY trial consent form

-On Headed Paper-

Patient Identification Number for this trial:

CONSENT FORM
Title of Project: Reducing Obsession and Compulsions in Kids and Young People (ROCKY)

Name of Researchers: Professor Shirley Reynolds, Dr Jo Derisley, Dr Sarah Clark.

Please initial box

1.   I confirm that I have read and understand the information sheet dated ………………… (version ....) for the above study and have had the opportunity to ask questions

☐

2.   I understand that my participation, and that of my child, is voluntary and that I am free to withdraw at any time without giving a reason, without our medical care or legal rights being affected

☐

3.   I understand that sections of any of my child's clinical notes at the CAMHS Mary Chapman House may be looked at by members of the research team (named below).

☐

4. I agree that details I give may be used in the research project by those named below

☐

5. I understand that our GP will be told about our involvement in this study.

☐

6. I give permission for all therapy sessions my child receives to be audio recorded.

☐

_____   _____

Name of Parent   Signature   Date

_____   _____

Name of child   Signature   Date

_____   _____

Researcher   Signature   Date

1 copy for family; 1 for research files; 1 to be kept with clinical notes
NB. Members of the Research team and who may have access to the above data/information include: Shirley Reynolds (Chief investigator and Acting Principal Investigator Norfolk May 2009-May 2010), Jo Derisley (Principal Investigator Norfolk), Sarah Clark (Principal Investigator Suffolk), Linda Rowland (Clinical Psychologist) and allocated ROCKY research assistants/researchers as recognised/named by Norfolk Research Ethics Committee.

Appendix K: Letter to GP to inform them of young person's participation in

the ROCKY trial

-On Headed Paper-

GP Name

GP Surgery

GP Address

GP Postcode

Dear GP Name

RE: Name of Participant (DOB) Address of Participant.

Following the assessment of the above, on (date), at the (centre specific), (Name) and his/her family were invited to take part in the ROCKY (Reducing Obsessions and Compulsions in Kids and Young People) project. This is a RCT to establish the effectiveness and cost effectiveness of involving parents in their child's treatment. Both (Name) and his/her parents consented to take part in the trial on the (date). The full details of the project have been made clear to both parent and child and should they wish to stop the trial at any point they will be supported to do so.

Should you have any questions relating to the above or any other issues concerning the research please feel free to contact either myself, at the number above, or Professor Shirley Reynolds (Chief Investigator), University of East Anglia, School of Medicine) on 01603 593312.

Yours sincerely

Site Specific Clinician /Research Assistant
Job Title, Site Specific Name.

Appendix L: Outputs relating to the testing of data assumptions

Table A2.9

Kolmogorov-Smirnov Outputs to Assess Distribution Curve of Data Used in Analysis for Pre and Post Treatment Data

Variable	Measure	Pre-treatment score			Post-treatment score			Change score		
		Statistic	df	Sig.	Statistic	df	Sig.	Statistic	df	Sig.
Parental criticism	Critical score	.257	40	.000						
Parental empathy	Empathy score	.139	40	.051						
OCD symptoms start of treatment	CYBOCS	.093	40	.200*	.109	38	.200*	.091	38	.200*
Young person responsibility	RAS[a]	.120	38	.179						
Parental anxiety	BAI	.181	37	.003						
Parental psychopathology	BSI global severity score	.113	37	.200*						

Note. BSI = Brief Symptoms Inventory; BAI = Beck Anxiety Inventory; RAS = Responsibility Attitudes Scale; CYBOCS = Children's Yale Brown Obsessive Compulsive Scale; MFQ = Mood Feeling Questionnaire; Y-BAI = Youth Beck Anxiety Inventory; [a]reversed score; *significance i.e. curve normal distribution.

Table A2.10

Kolmogorov-Smirnov Outputs of Pre-Treatment BSI Subscales to Assess Distribution Curve of Data Used in Analysis

Variable	Measure	Kolmogorov-Smirnov		
		Statistic	df	Variable
Parental psychopathology	BSI depression	.240	37	.000
	BSI anxiety	.167	37	.011
	BSI obsessive compulsive	.144	37	.052
	BSI somatization	.242	37	.000
	BSI interpersonal sensitivity	.174	37	.006
	BSI hostility	.187	37	.002
	BSI phobia	.388	37	.000
	BSI paranoia	.215	37	.000
	BSI psychoticism	.328	37	.000
	BSI positive symptom score	.120	37	.195

Note. BSI = Brief Symptom Inventory

Table A2.11

Kolmogorov-Smirnov Outputs of Parental Relationship Indicator Scores,

CYBOCS Post-Treatment and Change Scores to Assess Distribution Curve

of Data Used in Analysis

	Individual CBT			Parent enhanced CBT		
Measure	Statistic	df	Sig.	Statistic	df	Sig.
Critical score	.279	22	.000	.231	18	.012
Empathy score	.140	22	.200*	.121	18	.200*
CYBOCS end of treatment score	.111	22	.200*	.171	16	.200*
CYBOCS change score	.105	22	.200*	.143	16	.200*

Note. CYBOCS = Children's Yale Brown Obsessive Compulsive Scale; CBT = Cognitive Behavioural Therapy; *significance i.e. curve normal distribution.