Thesis

Inflated responsibility and maternal reassurance: impact on child and mother behaviour

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ABSTRACT

Background

It has been proposed in the literature that the accommodation of OCD symptoms within the family, through reassurance giving or compliance with rituals, may serve to maintain the disorder (Allsopp & Verduyn, 1990). With no existing experimental studies investigating the role of reassurance giving in children, an initial aim of the study was to examine if maternal reassurance giving can be manipulated. The impact of maternal reassurance on child OCD-type behaviours was investigated.

Method

This study used an experimental between-subjects design. 36 children aged 9–12 years were exposed to a high responsibility condition. Their mothers were randomly allocated to high maternal responsibility and low maternal responsibility condition. The experimental manipulation was adapted from previous experimental research with children. Dependent variables were reassurance seeking, reassurance giving, anxiety, checking and hesitation.

Results

Mothers in the high maternal responsibility group gave more reassurance than mothers in the low maternal responsibility group. Children in the high maternal responsibility group sought more reassurance, and hesitated more than children in the low maternal responsibility group. Groups did not differ significantly with regard to checking and anxiety.

Conclusions

The results provide preliminary support for a causal link between maternal beliefs, maternal reassurance giving and child reassurance seeking. The findings do not support the view that reassurance giving is associated with short-term anxiety or checking in children.

Reassurance giving may have worked as a substitute for checking. Both checking and reassurance could provide negative reinforcement, i.e. reduce anxiety and thus be functionally equivalent. Methodological limitations must be taken into account in the interpretation of results. The study provides evidence in support of a possible causal pathway between the family environment and childhood OCD, and has implications for cognitive models of OCD in childhood and clinical practice, and highlights some important areas for future research.

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CHAPTER ONE

1. Introduction

1.1 Overview

Obsessive-compulsive disorder (OCD) is characterised by distressing, intrusive and persistent thoughts or impulses (obsessions) and/or urges (compulsions) aimed at reducing distress or avoiding a feared outcome (Turner, 2006). OCD may have a negative impact on many areas of people's lives, including their family, as well as their social and academic lives (Piacentini, Bergman, Keller & McCracken, 2003). In recent years, attention has been drawn to the role of cognitive appraisals and family environment in the development and maintenance of this disorder. An inflated sense of responsibility (Salkovskis, 1985) is one such appraisal, and has been proposed as one of the driving and maintaining factors for OCD in adults. Salkovskis, Shafran, Rachman and Freeston (1999) hypothesised that inflated responsibility develops during childhood and is influenced significantly by parental beliefs and behaviour. It has been also suggested that the accommodation of OCD symptoms within the family, by reassurance giving or compliance with rituals, may serve to maintain the disorder (Allsopp & Verduyn, 1990). Furthering our understanding of the inflated responsibility model in the context of childhood OCD, together with exploring the effects of reassurance giving, could provide important evidence about how OCD may develop in children, in the context of their family environment.

The aim of the present study is to investigate the relationship among reassurance giving, reassurance seeking, inflated responsibility and children's anxiety, using an experimental manipulation of responsibility in children based on Reeves, Reynolds, Wilson & Coker (2010). In this study, children will be placed in a situation of high responsibility and we will manipulate their mothers' reassurance giving and examine if reassurance leads to higher levels of OCD-type behaviours in the children. First, we will

examine if maternal reassurance giving can be manipulated. If it can, we will examine the impact of reassurance giving on child behaviour.

In Chapter One, an overview of the clinical presentation of childhood OCD is presented. In particular, the diagnostic features, prevalence, and co-morbidity are described. This is followed by a discussion of theoretical frameworks used to understand OCD and its associated treatments. A critique of cognitive theories of OCD, with an emphasis on thought action fusion, meta-cognitive beliefs and inflated responsibility is then made, before evaluating the evidence base for applying these models to OCD in childhood. The latter part of the chapter discusses developmental and contextual considerations relevant to OCD in children, including child-parent interactions and family accommodation of obsessive-compulsive symptoms. Finally, the rationale for conducting this research project is outlined and the research hypotheses are stated.

1.2 Childhood Obsessive Compulsive Disorder

1.2.1. Definitions and Characteristics of OCD in Children

The key features of OCD are obsessions and/or compulsions that cause significant distress, are time-consuming, or interfere significantly with functioning (DSM-IV; American Psychiatric Association, 2000). Obsessions are unwanted, involuntary and intrusive thoughts, images and impulses to which repetitive behaviours or mental rituals (compulsions) are produced to reduce distress generated by obsessions (Swedo, Rapoport, Leonard & Lenane, 1989).

Although symptoms of OCD in young people are similar to those experienced by adults, a number of traits, specific to children's developmental stages, have been suggested (Ivarsson & Valderhaug, 2006). The content of obsessions may reflect the developmental tasks and issues with which the child is faced (Salkovskis, 1985). Obsessions regarding contamination, aggression, exactness or symmetry are most frequently reported by younger

children. Adolescents tend to report obsessions related to fear of contamination, thoughts of something terrible happening, or fears about illness or dying (Thomsen, 1999). The most common compulsive behaviours in young people include washing, checking, ordering, repeating, counting and reassurance seeking (Franklin et al., 1998; Thomsen, 1999).

Most children present with obsessions and compulsions but some, especially younger children, report compulsions only. This may reflect their cognitive development and, more specifically, their ability to identify and express their thoughts and meta-cognitions (Swedo & Rapoport, 1989; Wever & Rey, 1997). Developmental differences are also reflected in the diagnostic criteria (DSM-IV; American Psychiatric Association, 2000) and insight into the excessive, senseless and irrational nature of obsessional beliefs and compulsions is not required for children to receive a diagnosis.

Diagnosing OCD in children and young people can sometimes be difficult because of the overlap between characteristics of OCD and other disorders. For example, some cognitive appraisals, such as thought action fusion and perfectionism which are considered to be characteristics of OCD, may also be associated with other anxiety disorders, such as Generalised Anxiety Disorder (Comer, Kendall, Franklin, Hudson, & Pimentel, 2004). In addition, children with Autistic Spectrum Disorder (ASD) often engage in repetitive behaviours that are similar to compulsions seen in OCD, and their special interests are often described by parents as 'obsessions'. However, the obsessions and compulsions seen in individuals with ASD, seem to be much simpler in their nature, and most importantly are usually a source of pleasure and excitement, not anxiety and distress (Baron-Cohen & Wheelwright, 1999; Tantam, 2000). Nevertheless, these phenomenological similarities can make differential diagnosis difficult.

1.2.2 Epidemiology

    1.2.2.1. Prevalence.

Lifetime prevalence rates in community paediatric populations vary, but are reported to be between 0.1 and 4% (Flament et al., 1988; Valleni-Basile et al., 1995; Douglass, Moffitt, Dar, McGhee & Silva, 1995). Heyman et al. (2001) surveyed parents of 10,438 children aged 5 to15 years and identified 25 children who met diagnostic criteria for OCD. 64% of children were between 13 and 15 years of age, and 32% between 8 and 12 years old. There was an increase in prevalence with age; therefore the age cut-off at 15 years may explain the low prevalence reported in this sample. The prevalence of OCD seems to be similar in males and females, in both late adolescence and young adulthood (Carter & Pollock, 2000). However, early onset is more common amongst boys (Geller et al., 1998; Hanna, 1995; Zohar, 1999).

Estimates of OCD in clinical samples vary enormously from 1.2 % (Hollingsworth, Tanguay, Grossman & Pabst, 1980) to 14.9% (Last, Perrin, Hersen, & Kazdin, 1992). The wide range of estimates of OCD in paediatric samples may be attributed to the use of different diagnostic methods across studies, which make comparisons difficult. The methodological robustness of the measures used, and characteristics of the studied populations, such as age, culture, and reluctance to disclose symptoms owing to stigma associated with mental health problems, may also contribute to the heterogeneity of the findings.

Cameron (2007) suggests that children are highly unlikely to disclose OCD symptoms unless they are asked about them directly, which suggests that prevalence rates may underestimate the number of young people with OCD in clinical and non-clinical samples (Whitaker et al., 1990).

1.2.2.2. Age of onset, course and prognosis.

OCD symptoms have been identified in children as young as three years old (Chowdhury, Frampton & Heyman, 2004; Thomsen & Mikkelson, 1995). However, it is rare for OCD to be recognised that early, and an onset between 7.5 to 12.5 years is believed to be more common (Geller et al.,1998; Last, Perrin, Hersen, Kazdin, 1992). There is a general consensus in the literature that OCD onset peaks around puberty and early adulthood (Pauls, Alsobrook, Goodman, Rasmussen, & Leckman, 1995). It has been suggested that developmental changes and the transitions that young people make may contribute to the emergence of the disorder at these times (Williams & Waite, 2009).

The onset of OCD is usually gradual. Hanna (1995) interviewed 31 children and adolescents with OCD. Sudden onset was reported by only 6% of the sample, 55% reported onset over years, and 39% reported onset over weeks or months (Hanna, 1995). The course of OCD in young people varies greatly in terms of its length and severity (Shafran, 2001). Long periods of remission are often interwoven with episodes of symptom exacerbation (Bolton, Luckie & Steinberg, 1995).

In a meta-analysis of 22 studies of prognosis, Stewart et al. (2004) reported that OCD persisted in 41% (95% CI .32–.51) of cases across all samples. OCD was more likely to persist among those with longer hospital admissions, earlier age of onset and longer duration of OCD before obtaining diagnosis. Similarly, Langner et al. (2009) reported on 63 patients with early onset OCD and 191 patients with late onset OCD, and found that poor therapy outcome was associated with higher age at assessment, longer hospital admission before treatment, low motivation, and lower psychological functioning.

1.2.3 Co-Morbidity

Co-morbidity in childhood OCD is high, with as many as 76–84% young people meeting diagnostic criteria for other internalising and externalising disorders (Heyman et

al., 2001; Mancebo et al., 2008; Swedo & Rapoport, 1989). Heyman et al. (2001) found that 52% of children and adolescents with OCD met criteria for another anxiety disorder, 20% for a major depressive disorder, 44% for a conduct disorder and 1% for an eating disorder. The high co-morbidity observed in those with OCD, as well as the heterogeneous features of OCD, have prompted a debate around its position on the diagnostic spectrum (Ivarsson & Melin, 2008). For example, similarities between the presentation of OCD and Tourette's syndrome, eating disorders, body dysmorphic disorder, autism and tic disorders, have led to the development of the umbrella term 'obsessive-compulsive spectrum'(Bartz & Hollander, 2006).

1.3 Models of OCD

This section discusses biological, behavioural and cognitive models of OCD and treatments derived from them. Since a full discussion of biological models and pharmacological treatments is beyond the scope of this thesis, a summary of contemporary biological models and treatments will be given. This will be followed by a detailed discussion of behavioural and cognitive models and treatments.

1.3.1 Biological Model of OCD

Biological theories of OCD suggest that the disorder may be related to the following factors: genetics, structural and functional changes in the brain, and changes in the neuro-chemistry of the brain.

1.3.1.1 The genetic hypothesis of OCD. According to Hettema, Neale, and Kendler (2001), an individual with OCD is four times more likely to have a family member with OCD than those without a disorder. Similarly, Hanna, Himle, Curtis and Gillespie (2005) found that OCD was more prevalent in the close relatives of children with OCD than in the close relatives of children without OCD. Rates of OCD in first-degree relatives range from 17–23% in child probands (Chabane et al., 2005; do Rosario-Campos et al., 2005) to 8.3%

in adult probands (Hettema, Neale & Kendler, 2001). Of course, family members may present with higher rates of concordance because of a shared environment, so it is preferable to examine concordance in twin studies. A review of 70 years of twin research in OCD (van Grootheest, Cath, Beekman, & Boomsma, 2005) concluded that genetic influences in OCD accounted for between 45 and 65% of the variance. Samuels (2009) suggested that twin studies indicate that environmental factors explain approximately 50% of 'individual variation in vulnerability to OCD' (p. 279). However, as suggested by psychological models of OCD, the development of OCD may be influenced strongly by environmental factors, and it is likely that they may activate OCD in persons genetically vulnerable to developing the disorder.

1.3.1.2 Brain structure and function. Brain imaging studies suggest that specific brain structures are associated with symptoms of OCD. For example, individuals with OCD appear to have hyperactivity in the orbito-frontal cortex (Lazaro et al., 2008), and abnormalities in the basal ganglia-frontal cortex (Rosenberg & Keshavan, 1998). However, these findings do not provide evidence of causality, as it is unclear whether the reported changes occurred before or after the onset of OCD, and they may be a result of the symptoms rather than their cause.

Consistent with the findings from the adult population (Fontenelle, Mendlowicz, & Versiani, 2005; Savage & Rauch, 2000), recent neuropsychological studies suggest that children and adolescents with OCD perform worse in tests of executive functioning, memory and speed of processing, in comparison to matched controls (Andres et al., 2008). This is an interesting finding as previous research has demonstrated that memory confidence decreases in young people under conditions of high responsibility, which suggests that OCD symptoms lead to a lack of confidence in memory, rather than that underlying memory deficits are primary in OCD (Radomsky, Rachman & Hammond,

2001). Similarly, based on Andres et al. (2008), cognitive functioning may decline in individuals with OCD as a result of processing demands. That is to say, the demands of OCD may interfere with a person's cognitive functions such as memory and attention.

       1.3.1.3 Brain neurochemistry. Selective serotonin reuptake inhibitors (SSRIs) are effective in the treatment of OCD in adults and children and, therefore, it has been hypothesised that serotonin may play a role in OCD (Beer, Karitani, Leonard, March, & Swedo, 2002). Some people, however, recover from OCD without pharmacological treatment, suggesting that psychosocial factors also contribute to the development of OCD. Moreover, there is no satisfactory evidence that levels of serotonin differ among patients with OCD, non-patients and patients with other anxiety disorders (Sinha, Mohlman, & Gorman, 2004), suggesting that the effectiveness of SSRIs as a treatment for OCD does not provide an adequate support for the biological explanation of OCD (Cameron, 2007).

1.3.2 Behavioural Model of OCD

       The behavioural model of OCD draws upon Mowrer (1960), who proposed that obsessions arise when neutral objects or events become associated with aversive stimuli through a process of classical conditioning. To illustrate, a person sees a knife (neutral stimulus) and has a sudden thought of stabbing their partner (aversive stimulus). An association is made between the knife and stabbing, and a once neutral stimulus evokes a fear response whenever triggered. Mowrer proposed that compulsions provide temporary relief from the aversive stimuli and anxiety, and that fear created by classical conditioning is maintained through operant conditioning.

       Operant conditioning (Zimbardo, 1985) posits that behaviour can be reinforced in a positive or negative way. In the above example, a person may start avoiding knives or asking others to reassure them that they are not going to harm their partner. Avoidant and reassurance seeking behaviours (compulsions) serve to avoid the feared consequences and,

through the process of repetition, people learn that compulsions lead to the reduction in their anxiety associated with obsessions. The behaviour is negatively reinforced. However, because the reduction in anxiety is not permanent, the cycle of distress and relief is frequently repeated.

Drawing upon Mowrer's theory, Rachman (1978) suggested that obsessions should be hypothesised as 'conditioned aversive stimuli' that cause distress, leading to avoidant behaviour or compulsions (Rachman, 1971). He further argued that avoidance of aversive stimuli and compulsive behaviour hinders habituation and increases hypersensitivity to adverse stimuli. Habituation is the process whereby the strengths of an individual's responses to a particular stimulus decreases gradually with repeated or prolonged exposure to this stimulus (Zimbardo, 1985). Therefore, in treatment, individuals should be encouraged to expose themselves to anxiety provoking stimuli without engaging in any form of neutralising behaviour.

Although this behavioural model explains how the association among anxiety, obsessions and compulsions develops and is maintained, there are some aspects of the disorder that the model fails to explain. For example, the behavioural model of OCD does not explain why some compulsions increase anxiety, and why for a small minority of patients, there seems to be no association between obsessions and compulsions (Clark, 2004).

1.3.2.1 Exposure and response prevention (ERP). Behavioural theory was applied clinically in the form of Exposure and Response Prevention (ERP). On the basis that OCD reflects a learned behaviour (compulsions), which is carried out in order to reduce anxiety associated with negative thoughts and beliefs (obsessions), ERP seeks to break this cycle and help the person with OCD learn that their compulsion can be tolerated, and that if they

are able to repeatedly expose themselves to the obsession, without carrying out the compulsion, that the anxiety associated with the obsession will gradually reduce.

The idea that anxiety will reduce is based on the behavioural principle of 'habituation' (Zimbardo, 1985). Thus, in ERP, the person with OCD is dissuaded from carrying out neutralising behaviour following exposure (March, Franklin, Nelson, Foa, 2001). If individuals experience that anxiety reduces over time, they learn to manage high anxiety without needing to engage in compulsive behaviours. In addition, through repeated ERP, the individual also discovers that the feared consequence associated with their obsession does not occur (Albano, Knox & Barlow, 1995).

A recent meta-analysis of 18 randomised controlled trials of young people with OCD (Abramowitz, Whiteside, & Deacon, 2005) found that a placebo, SSRIs and ERP led to reliable improvements from pre- to post-test. However, compared to a placebo (effect size .48 CI .40 to .55) and SSRIs (effect size 1.13 CI .82 to 1.25), ERP was associated with larger effect sizes at post-test (effect size 1.98 CI 1.40 to 2.56) on measures of OCD and residual symptoms. Post-test scores for the ERP group, on The Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989), were on average in the mild range of severity in comparison to the moderate range for the SSRIs and placebo groups.

Bolton and Perrin (2008) randomised 20 children and adolescents to pure ERP or a wait list condition. ERP was associated with statistically and clinically significant improvements at the end of treatment and at 14 weeks follow-up, compared with the wait list control. Intention-to-treat analyses showed that the treatment effect size was 1.21, comparable to .97 effect size found in the RCT of CBT conducted by the Pediatric OCD Treatment Study Team (POTS, 2004).

Although evidence supports the use of ERP with children and adolescents, its applicability to this group has been questioned because of the observation that children

find ERP aversive and challenging, and that it is associated with a high drop-out rate.
Bolton and Perrin (2008) reported a 20% drop-out rate, and a 40% drop-out rate was
reported by Allsopp and Verduyn (1990).

1.3.3 Cognitive Models of OCD

Cognitive models of OCD propose that intrusive thoughts are normal phenomena
(Allsopp & Williams, 1996; Purdon & Clark, 1994; Rachman & De Silva, 1978; Rassin &
Muris, 2006), and that catastrophic misinterpretation transforms them into 'abnormal'
obsessions (Rachman, 1997). These 'abnormal' obsessions are intense, insistent and
intrusive, which leads the person to attempt to avoid them or neutralise them through
compulsive behaviour (Salkovskis, 1985; Wells, 1997). Based on behavioural explanations
of maintenance of symptoms, cognitive models suggest that temporary relief (negative
reinforcement) provided by the compulsions maintains the problem, as the person does not
learn that the feared outcome does not happen.

A wide range of cognitive misinterpretations that are likely to be linked to the
development and maintenance of OCD have been proposed (The Obsessive Compulsive
Cognitions Working Group, 1997). These include the thought-action fusion (TAF) model
(Rachman, 1993), the meta-cognitive model (Wells & Papageorgiou, 1998), and the
inflated responsibility model (Salkovskis, 1985). These models will be discussed in the
next section.

*1.3.3.1 Thought-action fusion (TAF).*TAF is described as a cognitive bias whereby
thoughts and actions are treated as the same (Rachman, 1993). Rachman and Shafran
(1998) argued that TAF is key in the development and maintenance of OCD as it leads to
misinterpretations of intrusive thoughts as meaningful, personally significant and likely to
have serious consequences. According to Rachman (2003), there are two components of
TAF: morality and likelihood. TAF Morality refers to the belief that thinking about an

action is morally equivalent to carrying it out (e.g. thinking about swearing in church is as bad as *actually* swearing in church). TAF Likelihood is a belief that thinking about an unacceptable event increases the likelihood of an event occurring. Rachman proposed that if people believe that thinking about disturbing events makes them more likely to happen, and if they believe that they will be held morally responsible for such events, then they will experience high levels of distress and are more likely to engage in neutralising behaviours to prevent the negative events from happening (e.g. Shafran, Thordarson, & Rachman, 1996).

Abramowitz, Whiteside, Lynam, and Kalsy (2003) found TAF in people with other anxiety disorders and depression, and suggested that TAF is linked to general features of psychopathology rather than to OCD specifically. They hypothesised that cognitions of patients with OCD would be characterised by TAF because they were highly anxious (Abramowitz et al., 2003).

Empirical evidence for TAF

TAF has been manipulated experimentally by asking participants to read a sentence such as "I hope _____ is in a car accident", and to then write the name of a loved one in the space provided. Using the sentence paradigm with 72 students, Zucker, Craske, Barrios & Holguin (2002) found that participants who received psycho-education about TAF, reported less anxiety and fewer urges to neutralise, than a control group.

Rassin, Merkelbach, Muris and Spann (1999), manipulated TAF in 19 undergraduate students. Participants in the experimental group were wired to electrical equipment and told that if they thought of an apple an electric shock would be administered to another participant. Participants in the control group did not receive any information about the threat of an electric shock. Results indicated that participants in the

experimental group experienced greater frequency of 'apple' intrusions, discomfort, and more resistance to 'apple' thoughts, than the control group.

The authors of the above studies proposed that neutralising behaviour is driven by negative appraisals of intrusive thoughts, thus providing further support for the applicability of the TAF model to OCD.

1.3.3.2 The meta-cognitive model. The meta-cognitive model of OCD posits that beliefs about the meaning and/or dangerous consequences of intrusive thoughts underlie the development of obsessional thinking (Wells, 1997, 2000; Wells & Matthews, 1994). The model proposes that a normal intrusive thought is appraised as threatening when it triggers meta-cognitive beliefs about the meaning of thoughts in general.

The model posits that if the personal meaning of thoughts is appraised as threatening, then based on the Self-Regulatory Executive Functioning (S-REF) model of emotional disorder (Wells & Matthews, 1996), specific strategies to cope with the perceived threat will be activated. Such strategies include: thought suppression, checking, neutralising and ruminative reasoning. Which strategy is selected depends on appraisals that have been triggered. To illustrate, the appraisal that having a specific thought indicates that something dangerous has already happened is likely to elicit checking behaviour. These strategies are described as 'counterproductive' as they prevent the person from learning new information that would serve to disconfirm the beliefs. These strategies also increase the frequency of intrusive thoughts, through, for example, constant preoccupation with a person's mental states, which increases the salience of mental stimuli (Purdon & Clark, 1999). Beliefs about the negative consequences of not using the strategies also serve to maintain their use. Ironically, however, use of the strategies becomes problematic and leads to a person experiencing distress owing to the beliefs held by the person regarding the consequences of carrying them out e.g. 'I will never be able to relax' (Purdon & Clark,

1999). The model also emphasises the role of beliefs about rituals. These beliefs may produce idiosyncratic rules ('stop signals') that determine when a compulsive behaviour can be 'safely' stopped.

Overall, the meta-cognitive model explains the role of meta-cognitive beliefs in the maintenance, but not the aetiology, of OCD. It suggests that treatment should focus on identifying and modifying meta-cognitive beliefs about intrusions and emotions, and that beliefs about the need to perform rituals should also be targeted.

Empirical evidence for the meta-cognitive model

Evidence for the meta-cognitive model has come from experimental and correlational designs. Fisher and Wells (2005) used a counterbalanced, repeated measures, crossover design with eight patients with OCD. Each patient was exposed for 5 minutes to their feared obsessional stimuli. Following this, they received a meta-cognitive treatment rationale. The exposure was then repeated and a habituation rationale was given to each participant. Participants were asked to rate their anxiety, level of belief and urges to neutralise in the first, third and fifth minutes of each condition. The meta-cognitive rationale resulted in greater decreases in anxiety ($z = -2.03$ $p < .05$) and urges to neutralise ($z = -1.963$ $p < .05$), than the habituation rationale. The use of a counterbalanced experimental design is a strength of the study as it allowed for controlling for variability in the sample across conditions and order effects. However, the study relied on subjective ratings of anxiety, and the authors hypothesised that the results might have been confounded by demand characteristics.

Questionnaire studies suggest that meta-cognitive beliefs are positively associated with OCD symptoms. For example, in a study by Myers, Fisher and Wells (2009), 238 students were asked to complete a series of online questionnaires, which assessed three central components of the meta-cognitive model: fusion beliefs, beliefs about rituals, and

criteria which indicate that rituals can be stopped. Each belief was entered separately into regression analyses. Significant positive association was found between each of the beliefs and obsessive-compulsive symptoms. Results also showed that taken together, meta-cognitive beliefs explained between 20 and 30% of the variance in symptoms. The authors suggested that meta-cognitive beliefs may play an important role in the interpretation of intrusions and, subsequently, they may affect the way we behave in response to those intrusions.

The efficacy of meta-cognitive therapy (MCT) for OCD, which involves targeting appraisals and thought-fusion beliefs, teaching mindfulness, and modification of internal criteria for cessation of rituals has been examined in a case series of four adults with OCD (Fisher & Wells, 2008). All participants were administered the Yale Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989), the Beck Depression Inventory (BDI; Beck & Steer, 1993) and the Padua Inventory (PI; Sanavio, 1988), before and after treatment. At a three-month follow-up statistically and clinically significant improvement was noted for all four participants. This was maintained at six-month follow-up in three participants. Therefore, the results offer preliminary support for the efficacy of meta-cognitive therapy.

1.3.3.3 The inflated responsibility model. According to the inflated responsibility model (Salkovskis, 1985, 1989a, 1989b; Salkovskis, Richards, & Forrester, 1995), intrusive thoughts are normal phenomena experienced by most people in the general population, which become obsessional in their nature only when they are interpreted as in terms of responsibility for harm to self or others (Salkovskis, 1985). Salkovskis (1985) also argued that cognitive estimation of probability of harm and severity of harm play an important role in the aetiology and maintenance of OCD.

Salkovskis, Shafran, Rachman, & Freeston (1999) suggest that, as in other anxiety disorders, assumptions that people develop as a result of their early life experiences may be important in the development of OCD. They propose that these assumptions may be salient for most of a person's life but that they can be activated by critical incidents or situations which fulfil the conditions inherent in the assumptions (Salkovskis et al., p. 1057). These assumptions may lead to the misinterpretation of normal intrusive thoughts as significant and dangerous, which in turn leads to anxiety and depression and a need to engage in neutralising behaviour. Neutralising behaviour initially reduces distress generated by obsessional thoughts, but maintains the obsessional thinking in the long-term as it further focuses the person's attention on intrusive thoughts and prevents disconfirmation of misinterpretations (Salkovskis, 1998). Neutralising behaviours, also referred to as safety behaviours, take a number of forms such as: avoidance, thought suppression, rituals and reassurance seeking, with reassurance seeking being probably the most frequently exhibited (Salkovskis, 1999). The role of safety behaviours in OCD, with a specific focus on the role of reassurance seeking in the maintenance of the disorder, will be discussed in more detail in Section 1.5.2.4.

Empirical evidence for the inflated responsibility model

Experimental manipulations of responsibility in adults have supported the causal role of inflated responsibility in OCD. For example, Ladouceur et al. (1995) developed an experimental paradigm to investigate responsibility and compulsive behaviour. They recruited 40 non-clinical adults who were asked to sort medications based on their colour. A high responsibility (HR) group was told that their work would have a direct impact on treatment safety and efficacy for a widespread virus in a South-East Asian country. Those in the reduced responsibility (RR) group were told the study was interested in the perception of colour. Participants in the HR group hesitated and checked more than those

in the RR group. In addition, participants in this group were more preoccupied with errors

and reported higher levels of anxiety. The results of this study have been replicated in

studies that manipulated responsibility by the presence or absence of a researcher during an

experiment (Lopatka & Rachman, 1995; Shafran, 1997). The results of these studies

indicate that reduction of responsibility is associated with decreased discomfort.

Arntz, Voncken, and Goosen (2007) used a classification task to manipulate

responsibility in individuals with OCD (N=27), anxiety (N=37) and non-clinical controls

(N=28). Increased checking behaviours and higher subjective OCD-like experiences were

reported by participants in the high responsibility OCD group, compared with all other

groups.

Questionnaire studies with non-clinical samples have also shown a significant

association between OCD symptoms and measures of responsibility beliefs (e.g. Freeston,

Ladouceur, Gagnon & Thidodeua, 1993). Studies with clinical populations have also

supported this association. For example, Salkovskis et al. (2000) found that individuals

with OCD (N=49), scored higher on the Responsibility Attitude Scale (RAS) and the

Responsibility Interpretation Questionnaire (RIQ) than individuals with other anxiety

problems (N=38), and a non-clinical control group (N=143).

1.3.3.4 Cognitive treatments for OCD: Cognitive Behaviour Therapy (CBT). The

National Institute for Health and Clinical Excellence (NICE, 2006) recommends CBT as

the treatment of choice for OCD in children and young people. NICE (2006) also

recommends that family members or carers are actively involved in the planning and

treatment process of children and adolescents with OCD. However, as highlighted by

NICE, these guidelines are mainly based on the efficacy of CBT in adult populations,

clinical practice and observations.

Although, as emphasised by NICE (2006), empirical evidence on the efficacy of CBT for children and adolescents is quite limited, a meta-analysis of randomised controlled trials of OCD in people younger than 19 years old conducted by Watson and Rees (2008) identified five studies that compared CBT to a control group (e.g.behavioural therapy, family therapy) and ten that compared pharmacotherapy to a control group (e.g. treatment as usual). Both treatments were found to be superior to the control. However, CBT showed a greater effect size (pooled effect size of 1.45 95% CI .68 to 2.22, $p = .002$) than pharmacotherapy (pooled effect size .48 95% CI .36 to .61, $p < .00001$).

1.3.4 Summary of Cognitive Models of OCD

Cognitive models propose that the appraisal of intrusive thoughts, and not the intrusive thoughts themselves, is critical to the development of OCD. Considerable empirical evidence exists for the relationship between TAF, meta-cognitive beliefs and OCD in non-clinical samples.

The inflated responsibility model proposed by Salkovskis (1985) has received most attention and has been researched extensively in adult clinical and non-clinical samples using correlational studies, experimental research and intervention studies. The following section examines the applicability of Salkovskis's model to childhood OCD.

1.4 Applicability of Adult Cognitive Models of OCD to Children

This section provides a critical review of research which evaluates the use of cognitive models of OCD in children and young people. It is based on a systematic review of the literature and the method of identifying relevant research is described. The available studies are classified on the basis of their research design and the model being tested, and are critically evaluated.

1.4.1 Literature Search Strategy

The following databases were searched in March 2010 to gather relevant citations: PsychINFO (OCLC), EMBASE, Web of Science/Web of Knowledge, Science Direct (Elsevier), UEA Catalogue. The search was limited to papers published from 1985 onwards, because cognitive theories of inflated responsibility, TAF and meta-cognitive beliefs had not been developed before that year. Key search terms used were: 'child* or adolescent or young people or juvenile or paediatric', in combination with 'OCD or obsessive-compulsive', 'cognitive models or cognitive processes or cognitive appraisals', metacognition or metacognitive beliefs', 'responsib*' and 'thought-action fusion or magical thinking'. As papers were gathered, key authors in the area were identified (e.g. 'Salkovskis', 'Shafran', 'Freeston', 'Rachman', 'Barrett', and 'Farrell') and the author searches were also carried out.

The search was supplemented by examining the reference lists from all retrieved articles and by a hand search of relevant journals (The Journal of Anxiety Disorders, Behaviour Research and Therapy) over the past ten years. In addition to this, researchers at the University of East Anglia and colleagues working in the field of OCD were consulted.

1.4.2 Inclusion and Exclusion Criteria

Articles were included if they were written in English and published in peer-reviewed journals. They had to offer data regarding cognitive models of OCD, including inflated responsibility, meta-cognitive and TAF models. Papers were included if the participants were 18 years or under.

The search identified 140 papers. On reading the abstracts of each paper, the majority of papers were excluded as they were not specific to cognitive models, included adult samples, or were review papers. 12 papers met the inclusion criteria. Reeves,

Reynolds and Coker (2010) and Reynolds, Austin, and Parker (in prep) were also included and critically evaluated here. This is because the current study extends these findings.

The studies have been organised into four categories based on whether they investigated OCD-specific cognitive models in childhood (inflated responsibility, TAF or meta-cognitions) or whether they examined a number of cognitive appraisals. Within these categories, studies are grouped by sample type (clinical or non-clinical) and research design (experimental or questionnaire).

Experimental designs carried out on clinical populations are generally acknowledged as being the most powerful as they can demonstrate causality and results of such experiments can be generalised to clinical settings. These types of designs are, however, underrepresented in research, due partly to the difficulty in recruiting participants from clinical populations and partly to the difficulty in designing rigorous experiments. There is also a concern that the results of experimental manipulations cannot be easily generalised to real-life situations. Questionnaire designs, on the other hand, are often preferred by researchers as they are relatively easy and quick to conduct, although they cannot determine what is the cause and what is the effect in a given situation, nor can they determine the sequence of events (Goodwin, 2010).

1.4.3 Studies Investigating TAF Model

1.4.3.1 Non-clinical samples and questionnaire designs. Muris, Meesters, Rassin, Merckelbach, and Campbell (2001) examined the relationship between TAF and OCD in 427 young people aged 13 to 16 years old. TAF was measured using the Thought-Action Fusion Questionnaire for Adolescents (TAFQ-A) adapted from the adult version to accommodate developmental differences. There was a significant association between TAF and symptoms of OCD, depression and other anxiety disorders. However, when trait

anxiety was controlled, only symptoms of OCD and generalised anxiety were still associated with TAF.

Bolton, Dearsley, Madronal-Luque, and Baron-Cohen (2002) examined the relationship between magical thinking and obsessive-compulsive symptoms in 127 children aged 5 to 17 years. The Magical Thinking Questionnaire (MTQ) was developed specifically for the purposes of this study. Contrary to the hypothesis, magical thinking was not associated with age. There was a significant relationship between magical thinking and obsessive-compulsive symptoms.

Evans, Milanak, Madeiros, and Ross (2002) explored the relationship between magical thinking and rituals in 31 children aged 3–8 years, and found no association between age and magical thinking, which is consistent with Bolton et al. (2002). Like Bolton et al., there was an association between magical thinking and children's compulsive behaviour.

The described studies highlight the role of TAF and magical thinking in childhood OCD, thus providing support for the applicability of cognitive models of OCD to the population of children and adolescents. However, due to their correlational nature, causal associations could not be established. In addition, the cognitive development of non-clinical children may be significantly different from the cognitive development of children with psychological difficulties, and needs to be considered when interpreting these results.

1.4.4. Studies Investigating the Meta-Cognitive Model

1.4.4.1 Non-clinical samples and questionnaire designs. Two studies have examined whether OCD is better predicted by meta-cognitions or inflated responsibility. Mather and Cartwright-Hatton (2004) investigated the relationship between responsibility, meta-cognitive beliefs and obsessive-compulsive symptoms in 166 adolescents, aged between 13 and 17 years. Responsibility and meta-cognitions were correlated with

obsessive-compulsive symptoms. However, after controlling for age, gender, and depression, only meta-cognitive-beliefs significantly predicted obsessive-compulsive symptoms.

A number of methodological limitations make it difficult to draw any definite conclusions. The authors question poor test-retest reliability of one of the meta-cognition questionnaire subscales. There are also some doubts about how representative these results are, as the response rate was not calculated. Therefore, it is unclear whether the sample was representative of the adolescent population.

Matthews, Reynolds and Derisley (2007) found a significant association between inflated responsibility, thought-action fusion, meta-cognitive beliefs and OCD in a non-clinical sample of 233 adolescents, aged 13 to 16 years. Responsibility appraisals completely mediated the effect of TAF, and partially mediated the effect of meta-cognitive beliefs. The authors concluded that inflated responsibility and meta-cognitive beliefs may be as important in understanding OCD in childhood as they are in the case of adult OCD.

The discrepancy between Mathews et al. (2007) and Mather and Cartwright-Hatton (2004) is puzzling. The studies used the same measures of responsibility and meta-cognitive beliefs, and participants did not differ significantly between the studies. However, Matthews et al. did not control for mood, whereas Mather and Cartwright-Hatton did. Thus, future research may benefit from examining the role of depression and cognitive processes associated with OCD in children and adolescents.

Cartwright-Hatton et al. (2004) adapted the meta-cognitive questionnaire (MCQ; Cartwright-Hatton & Wells, 1997) for adolescents (MCQ-A). They examined meta-cognitive beliefs and their emotional correlates. The study found a significant positive correlation between scores on the MCQ-A and OCD symptoms and concluded that the meta-cognitive model is applicable to young people.

1.4.5 Studies Investigating the Inflated Responsibility Model

    1.4.5.1 Clinical samples and experimental designs. Barrett and Healy-Farrell (2003) investigated the role of responsibility appraisals in children and young people with OCD, aged 7 to 17 years. A behavioural avoidance task (BAT; Lopatka & Rachman, 1995; Shafran, 1997) was used to manipulate responsibility. Signed contracts between the participant and the experimenter were used to manipulate responsibility and participants were exposed to a feared situation under three conditions: high, moderate, and low responsibility. There was no association between inflated responsibility and perception of probability, severity of harm, anxiety, avoidance or ritualising.

    There are a number of plausible explanations for these null findings. The authors noted that participants in the high-responsibility condition were reluctant to accept responsibility. The manipulation was unsuccessful in differentiating between the low and moderate responsibility conditions. They concluded that appraisals of responsibility may not be a key factor in the maintenance of OCD in children and young people.

    1.4.5.2 Non-clinical samples and experimental designs. To date, only two studies have used experimental designs to examine cognitive models of OCD in non-clinical children. In order to test the inflated responsibility model, Reeves et al. (2010) recruited 81 non-clinical children aged 9 to 12 years. Based on Ladouceur et al. (1995), children were asked to sort sweets according to whether they contained nuts, and were told that the sweets would be given to a group of children where one child had a nut allergy.

    Participants were randomly allocated to three experimental conditions: high responsibility, reduced responsibility, and no manipulation. Responsibility was manipulated by giving children different information based on the amount of responsibility they had for sorting the sweets. The high responsibility group were told that the experimenter would not check the sweets before giving them to the group of children. The

reduced responsibility group were told that the sweets would be checked and that any mistakes would not be their fault. Participants in the no manipulation group were not given any information about whether the experimenter would or would not check the sweets. Dependent variables were checking behaviours, hesitations, and state anxiety. As predicted by the inflated responsibility model, participants in the high responsibility condition checked and hesitated more than those in the reduced responsibility group.

Reynolds et al. (in prep) used the same experimental manipulation in a non-clinical sample of 66 children (9–12 years old) but addressed some of the limitations of the above study by including a control group, that was not given any information regarding nut allergies, harm or responsibility. In addition, reassurance seeking was added as another dependent variable. Children in the high responsibility group reported higher levels of perceived responsibility than those in the other groups. They also hesitated more and sought more reassurance, although there was no between-groups difference in checking behaviours.

The strengths of these studies are the use of experimental design, the face validity of the manipulation, as well as high response rates and good spread of age. Additional strength lies in the inclusion of reassurance seeking in the Reynolds et al. (in prep) study. However, the manipulation of responsibility was unsuccessful among all of the groups in both studies, and the statistical power of the Reynolds et al. study was insufficient to detect group differences. It was noted by the authors that some children struggled to understand the meaning of some of the questions, which suggests that they might have misunderstood the questions and, subsequently, gave inaccurate answers.

1.4.5.3 Non-clinical samples and questionnaire designs. Magnusdottir and Smari (2004) examined the inflated responsibility model of OCD in 202 children aged between 10 and 14 years. Participants completed an adapted version of the Responsibility Attitude

Scale (RAS; Salkovskis et al., 2000), the Child Depression Inventory (CDI; Kovacs & Beck, 1977) and the Leyton Obsessive Inventory-Child Version (LOI-CV; Berg, Whitaker, Davies, Flament & Rapoport, 1988). There were moderate, positive correlations between RAS and CDI, and RAS and LOI-CV. In a hierarchical regression, where LOI-CV scores were entered as the dependant variable, and age, gender, CDI scores and RAS scores as independent variables, responsibility attitudes predicted obsessive-compulsive symptoms more than depression, age or gender.

Yorulmaz, Altin and Karanci (2008) investigated the relationship between responsibility beliefs and different subtypes of OCD in two non-clinical groups in Turkey; 380 adolescents and 378 university students. They found a strong association between inflated levels of responsibility and compulsive checking. The authors noted that this was the first investigation of the inflated responsibility model in young people from non-Western countries, and suggested that the role of cognitive appraisals in OCD may be similar in Western and non-Western countries.

The strength of both studies is large sample size. However, the direction of the relationships found cannot be established owing to the correlational nature of the studies. Additionally, some participants in the Magnusdottir and Smari (2004) study were as young as 10 years old and the authors noted that some concepts on the RAS might have been too abstract for them.

1.4.6 Studies Investigating more than one Cognitive Model

1.4.6.1 Clinical samples and questionnaire designs. Barrett and Healy (2003) examined cognitive appraisals of TAF, self-doubt, responsibility (including probability and severity) and cognitive control in 3 groups of children aged 7–13 years: children with OCD (N = 28), a clinical control group of anxious children (N = 17) and a non-clinical control group (N = 14). Children with OCD reported significantly higher ratings of thought-action

fusion, responsibility, severity, and less cognitive control in comparison to children in the non-clinical group, but were significantly different from the anxious group only on cognitive control.

The use of a clinical control group is a strength of this study. A number of limitations should also be considered, including the sample size (N=59), which gave insufficient power to detect differences. Participants in the anxious group reported some obsessive-compulsive symptoms, which may account for some of the similarities in cognitive appraisals across the anxious and the OCD group. The youngest participants, who were 7 years old, may have been too young to reflect on their internal processes and articulate them.

Farrell and Barrett (2006) investigated TAF, thought-suppression, responsibility, probability, severity, self-doubt and cognitive control in patients with OCD, including 34 children aged 6–11 years, 39 adolescents aged 12–17 years, and 38 adults aged 18–66 years. Adults and adolescents reported higher responsibility attitudes than the children, but the groups did not differ significantly on cognitive appraisals of TAF, self-doubt, cognitive control and severity ratings. Farrell and Barrett suggested that responsibility appraisals may be less important in the development of OCD in childhood, and that they may become more significant to the development and maintenance of OCD with increasing age.

Libby, Reynolds, Derisley, and Clark (2004), investigated cognitive appraisals in 28 young people with OCD, 28 anxious children (N=28) and a non-clinical group (N=62). Young people with OCD reported significantly higher levels of inflated responsibility, one dimension of perfectionism (concern over mistakes), and Thought-Action Fusion (likelihood other) than the other groups, suggesting again that adult cognitive models of OCD may be applicable to childhood OCD.

1.4.7 Summary of Evidence for Cognitive Models of OCD in Children

Cognitive appraisals appear to be important in understanding OCD in children. However, evidence from the literature does not identify one specific cognitive appraisal that is most relevant to childhood OCD. Studies to date have produced conflicting findings regarding the mediating roles of inflated responsibility and meta-cognitions in the development and maintenance of childhood OCD. To demonstrate, evidence from two experimental studies (Reeves et al., 2010; Reynolds et al., in prep) supports the application of an inflated responsibility model in childhood OCD, but the study by Barrett and Healy-Farrell (2003) does not. Therefore, more research is needed to clarify the discrepancy between these findings. In addition, of particular interest would be experimental research on clinical samples, as it would help to establish causal links between cognitive appraisals and OCD symptoms.

1.5 Developmental and Family Factors in OCD

Although cognitive models provide a framework for understanding OCD, our conceptualisation of this disorder in the context of children and adolescents would not be comprehensive without considering relevant developmental and contextual factors. The next section provides an overview of child cognitive developmental theory. This is followed by a discussion of family factors that may play a role in the development and maintenance of childhood OCD. Specifically, the role of parental threat interpretation, parental rearing styles and the family's accommodation of OCD symptoms is explored.

1.5.1   Child Cognitive Development

One of the most prominent theories of child cognitive development is that developed by Piaget (1962). Piaget proposed four main stages of cognitive development: sensorimotor, pre-operational, concrete operational, and formal operational. He suggested that children's ability to reflect on their own thinking, to engage in hypothetical deduction,

as well as their abstract reasoning develop during the formal operational stage. He also posited the existence of three stages of moral development in childhood: pre-moral (0–4 years), moral realism (4–9 or 10 years), and moral subjectivism (9 or 10 years old upwards). The moral realism stage corresponds to the concrete operational stage, and moral subjectivism to the formal operational stage (Carr, 2006). At the moral realism stage, children evaluate acts based on their consequences. At the moral subjectivism stage, however, the wrongness of an action is evaluated on the basis of one's intentions. Piaget proposed that the transition from moral realism to moral subjectivism occurs between the ages of 9 and 10, and that it is around this time when children begin to incorporate the role of intent when making moral judgements.

Curiously, OCD onset seems to peak between the ages of 10 and 12 years (e.g. Geller et al., 1998), which may be related to cognitive development. It could be hypothesised that the ability to reflect on one's thinking that children develop at this stage helps them to focus and reflect on the impact of their own internal processes and actions on others, which in turn makes them more susceptible to cognitions related to inflated responsibility.

However, whilst children go through the same developmental stages, only a minority develop inflated responsibility beliefs. Salkovskis et al. (1999) proposed specific hypotheses about the development of inflated responsibility, which emphasised social learning, family environment and early life experiences. Research into psychosocial factors could, therefore, aid our understanding of why some children develop OCD and why some remain resilient.

1.5.2 OCD and the Family

It has been proposed that environmental factors, such as parental rearing style and family accommodation of OCD symptoms, contribute to OCD (Waters & Barrett, 2000).

1.5.2.1 Parental rearing style. Alonso et al. (2004) proposed that parental rearing style may contribute to the development of OCD in genetically vulnerable individuals. Specific parental characteristics which may be implicated in OCD include parental control, overprotectiveness, rejection, criticism, and lack of warmth (Waters & Barrett, 2000). For example, adults with OCD report that their family was characterised by low emotional warmth, and overly controlling and overprotective behaviour of parents (Alonso et al.). However, the above conclusions have been drawn from studies that relied on retrospective and subjective recalls/reports of parenting behaviours, which raises questions about the validity of such reports due to memory biases. Barrett, Shortt, and Healy (2002) tried to address the impact of memory biases by the use of direct observations of parent-child interactions. They compared the behaviour of 18 children with OCD, 21 children with externalising disorders, and 22 non-clinical participants, and their parents during a family interaction. Parent-child dyads were asked to discuss hypothetical situations, involving a potential social threat and a potential physical threat, and discuss what the child should do. Mothers and fathers of children with OCD were less confident in their child's abilities, used less positive problem-solving strategies, and were less likely to reward their child's independence than other parents. Children with OCD were less confident, showed less positive problem-solving and less warmth than children in the other groups.

1.5.2.2 Threat interpretation bias in parents and their children. General cognitive theory of childhood anxiety (Kendall & Ronan, 1990; Kendall & Chansky, 1991) posits that anxious children are more likely to focus on threat or danger when processing information, owing to the over-activity of schemas which store information regarding threat and danger, and systematic (threat biased) cognitive distortions. This is consistent with Beck and Emery's (1985) cognitive model of anxiety, which proposes that cognitions of anxious people are characterised by a heightened perception of threat.

Children develop within families and, therefore, it is important to consider the role of parental behaviours and cognitions in the aetiology of childhood anxiety. One model that incorporates parental cognitions is Hudson and Rappee's (2004) model of generalised anxiety disorder (GAD). The model proposes that children who inherit a genetic predisposition to anxiety may be characterised by high levels of arousal, emotionality, and sensitivity, and thus be temperamentally vulnerable to anxiety. It posits that increased arousal and emotionality may lead children to interpret situations in a more threatening way (processing bias) and to develop avoidance-oriented coping styles. Hudson and Rapee suggested that because avoidance prevents the child from learning how to deal with a perceived threat, they learn that they have no control over danger, which reinforces avoidant behaviour and their cognitions about the dangerousness of the world.

The model suggests that anxious parents are likely to have cognitions focused on their child's vulnerability and/or the dangerousness of the world, which make them likely to interact with their children by being controlling and overprotective. These cognitions may lead to parents encouraging their children to avoid situations they see as threatening. The model also proposes that avoidant behaviour is often accompanied by parents giving verbal information to their children about possible threats. Parental overprotective, or overly controlling, behaviour reinforces children's perception of the world as a dangerous and unpredictable place.

In addition, the authors suggest that children may model the anxious behaviour of their parents, peers and siblings, and subsequently exhibit anxious behaviour when faced with fearful or ambiguous stimuli. Moreover, stressful life events may further increase an individual's vulnerability to developing anxiety in genetically predisposed individuals.

Figure 1. A model of the development of Generalised Anxiety Disorder (GAD; Hudson & Rapee, 2004)
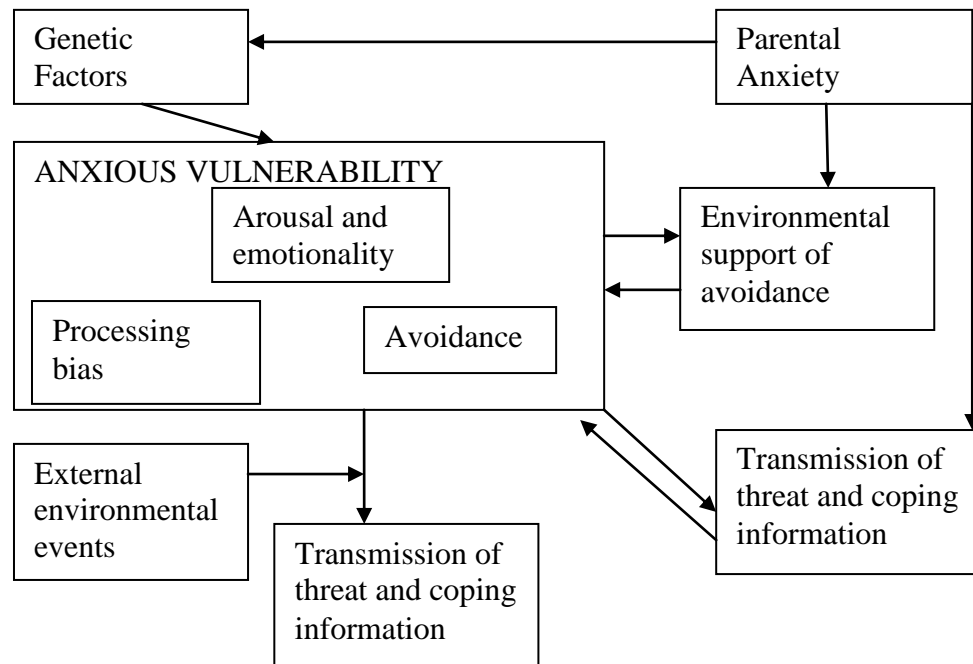
The next section considers in more detail the impact of parental cognitions on a child's cognitive appraisals.

Of particular relevance here may be research focusing on the parents' influence on their children's interpretations of danger and their problem-solving skills. To investigate this, a number of studies (e.g. Barrett, Rapee, Dadds, & Ryan, 1996; Chorpita, Albano, & Barlow, 1996; Creswell, Schniering, & Rapee, 2005; Shortt, Barrett, Dadds, & Fox, 2001) used the ambiguous stories paradigm in which hypothetical situations are read separately to the child and parents. The child is asked to generate a list of possible interpretations of the situations and to list their ideas of how to behave. The child is then asked to choose the most likely interpretation of those listed and to explain what they should do next. The child and their parent then meet and discuss each situation. They are asked to agree on the most likely interpretation and to develop a plan of action based on this interpretation. Findings of the studies that used the ambiguous stories paradigm suggest that anxious children and their parents or mothers make more threat interpretations than controls. A study by

Creswell et al. (2005) also found a positive correlation between mothers and children's threat interpretations.

The association between parent and child anxiety-related cognitive processes has also been investigated by exposing children to mildly stressful situations, i.e. making a five-minute video and then asking the mothers to predict their child's performance. This paradigm was used in studies by Kortlander, Kendall and Panichelli-Mindel (1997) and Cobham, Dadds and Spence (1999). These studies found that only mothers with high anxiety predicted that their child would show more anxiety and avoidance during a video-making task.

Gifford, Reynolds, Bell and Wilson (2008) examined interpretation biases of anxious children and their mothers. Mothers and their children completed an ambiguous stimuli task based on the task developed by Hadwin, Frost, French, and Richards (1997). Participants were asked to interpret single words. Anxious children and their mothers had higher threat interpretation scores than children and mothers in a non-clinical group, and there was a significant positive correlation between child anxiety and maternal threat interpretation.

Lester, Field, Oliver, and Cartwright-Hatton (2009) examined if cognitive biases of anxious parents are the same when they interpret situations that they may encounter, and when they interpret situations that their children may face. 40 parents (34 mothers and 6 fathers) were asked to interpret 10 ambiguous situations involving themselves and 10 ambiguous situations involving their children. Participants were then presented with four alternative versions of each situation and asked to rate each sentence on how similar they were in meaning to one of the situations they had read previously. Anxious parents had a bias towards interpreting situations as threatening to themselves and to their child.

To summarise, the research evidence suggests that parental beliefs about the dangerousness/safety of the world and their child's ability to cope, influence their expectations regarding outcomes of specific situations their child is in. It is possible that parents whose beliefs are characterised by high levels of dangerousness, and who doubt their child's ability to cope, do not encourage their child to face the threat and may influence them through their own biased interpretations. Lester et al. (2009) proposed that cognitions of anxious parents may be transmitted to children in a range of different ways (i.e. direct information or modelling). Presumably then cognitions of parents with other cognitive styles (e.g. inflated responsibility or TAF) may be passed to their children through the same mechanism, thus making them vulnerable to OCD, and subsequently maintaining OCD by promoting avoidance.

1.5.2.3 Family accommodation. Family accommodation is a process whereby family members assist or participate in OCD rituals to the extent that the family's lifestyle is modified around the symptoms (Peris et al., 2008; Van Noppen & Steketee, 2009). Reported rates of accommodation vary but are generally high, with up to 75% of parents engaging in some form of accommodation (Cooper, 1996; Storch et al., 2007). Most common accommodation behaviours include avoidance, provision of items needed to complete rituals (e.g. hand gels), and provision of reassurance (Calvocoressi et al., 1995; Rettew, Swedo, Leonard, Lenane, & Rapoport, 1992). It has been proposed that parents provide reassurance to minimise their child's distress and their own distress, and to streamline family functioning (Freeman et al., 2003; Storch et al., 2007). However, accommodation has been associated with high parental distress, anxiety, depression and increased parental criticism (Amir, Freshman, & Foa, 2000; Peris et al., 2008). In Storch et al. (2007), parental accommodation, as measured by the Family Accommodation Scale (FAS; Calvocoressi et al., 1995; 1999), was positively correlated with symptoms' severity,

externalising and internalising behaviour problems, and parent-rated impairment in the child's functioning. Parental accommodation mediated the relation between OCD symptom severity and child functional impairment. Therefore, complying with rituals, giving reassurance, and encouraging avoidance of anxiety provoking stimuli may put the family under enormous strain and contribute to the exacerbation of the child's OCD symptoms (Barrett, Rapee, Dadds, & Ryan, 1996; Storch et al., 2007).

Although the family's accommodation of the symptoms is often well intentioned, it is hypothesised to reinforce and maintain the symptoms (Allsopp & Verduyn, 1990). In addition, the accommodation of the young person's obsessive-compulsive symptoms and the demand this places on individual family members, as well as on the family as a unit, often leads to tensions and conflicts within the family (Steketee & Van Noppen, 2003). This in turn may impact on the child's levels of anxiety and their need to perform ritualistic behaviours.

Given the hypothesised maintaining role of family accommodation and its presumed negative impact on family functioning, it is now recommended that family members or carers are actively involved in the planning and treatment process of children and adolescents with OCD (NICE, 2006). Observations from clinical practice suggest that involving family members in the treatment programme helps the family to develop better skills to cope with the child's obsessive-compulsive symptoms. The emphasis is put on supporting the child without unintentionally re-enforcing the child's difficulties.

Taken together, the above studies suggest that certain family characteristics and family accommodation of OCD behaviour may be important elements of childhood OCD, and need to be explored further in future research. The next section considers a specific aspect of family accommodation of OCD; the role of reassurance seeking in OCD.

1.5.2.4 Reassurance-seeking behaviour and OCD. Cognitive behavioural theories of OCD posit that excessive reassurance seeking is one of the key features of the disorder. In the context of OCD, reassurance seeking can include persistent requests for information to reduce the anticipation of threat associated with obsessive intrusions, even when one is fully aware of the answer. Reassurance seeking, like other safety behaviours, contributes to the maintenance of the original threat beliefs by preventing disconfirmation of obsessional thoughts. Additionally, because this response produces a short-term reduction in anxiety, the behaviour is reinforced (Rachman, 2002). It would therefore appear that reassurance-seeking behaviour is counterproductive as it maintains and reinforces anxiety.

Salkovskis (1985, 1999) argued that reassurance seeking was a method of spreading the responsibility for harm to others. Rachman (2002) conceptualised reassurance seeking as 'checking by proxy' and proposed that individuals may engage in both reassurance-seeking and checking behaviour in an attempt to 'reduce the probability of the nasty event occurring or to reduce the effects of such an event' (p.629). Consistent with Salkovskis (1999), Rachman suggested that checking is triggered by an increase in perceived threat, responsibility and anxiety. Consequently, people check to reduce anxiety but, paradoxically, the more they check, the more anxious they feel, which in turn increases their urges to check.

Rachman's (2002) model of compulsive checking has been examined in a number of experimental studies (e.g. Arntz, Voncken, & Goosen, 2007; Ladoucer et al., 1995), all of which have found a significant association between high perceived responsibility/threat and greater urges to check. Therefore, if high levels of perceived responsibility/threat are associated with greater urges to check, and if reassurance is indeed a form of checking 'by proxy', it can be hypothesised that increases in perceived responsibility/threat will lead to greater reassurance-seeking behaviour.

This hypothesis has been tested by Parrish and Radomsky (2006). Responsibility and reassurance were manipulated in a classification task (pill sorting). Non-clinical participants (n = 124) were randomly allocated to four experimental conditions: high responsibility-high reassurance; high responsibility-low reassurance; low responsibility-high reassurance; and low responsibility-low reassurance. Participants were asked to rate their anxiety, urges to seek reassurance, urges to check, and confidence, before and after the experimental manipulation. Low responsibility was associated with lower urges to check and to seek reassurance, and higher memory confidence. High levels of responsibility were related to greater urges to check and reassure. The hypothesis that repeated reassurance would lead to increases in anxiety, urges to check, and urges to seek reassurance was not supported.

However, methodological limitations may limit the interpretation of the results. Reassurance was given in a standardised manner which may have reduced the validity of the experimental manipulation. In addition, participants received very precise and unambiguous feedback, which may not reflect the quality of feedback usually received by individuals with OCD.

Parrish and Radomsky (2010) interviewed three groups of adults; 15 with OCD, 15 with major depressive disorder and 20 healthy controls. Participants in the OCD group, were found to seek reassurance about perceived general threats (e.g. fire: 'Are you sure the stove is off?'), whereas depressed participants were mainly concerned with social threats (e.g. abandonment: 'Do you still love me?') and their performance on tasks ('Do you think I can handle this job?'). Consistent with the hypotheses, reassurance seeking was sought to reduce anxiety and to prevent general harm in the OCD group, and to prevent social harm in the depressed group and non-clinical group. Participants in clinical groups reported that

reductions in anxiety and interpersonal concerns were the most common reasons for stopping reassurance-seeking behaviour.

Bearing in mind the possible counterproductive effects of safety behaviours and reassurance seeking in particular, as well as their potentially disabling impact on the functioning of the child with OCD and their family, it is surprising that Parrish and Radomsky's (2006; 2010) studies are the only published studies to date that addressed the issue of reassurance in the context of OCD.

The impact of excessive reassurance seeking has been examined in the context of health anxiety (Hadjistavropoulos, Craig, & Hadjistavropoulos, 1998; Salkovskis & Warwick, 1986), depression (Abela, Zuroff, Ho, Adams, & Hankin, 2006; Joiner & Schmidt, 1998), and in the context of medical procedure in physical health settings (Gonzalez, Routh, & Armstrong, 1993; Manimala, Blount, & Cohen, 2000). In these settings, excessive reassurance seeking has been associated with short-term reduction in anxiety and with the exacerbation of reassurance seeking in the long-term, and can be explained by negative reinforcement described in Section 1.3.2. The question remains whether the same processes operate when the excessive reassurance seeking is exhibited by individuals with OCD.

1.6 Chapter Summary

Obsessive-compulsive disorder can have a negative impact on children's functioning, as well as on their cognitive, social and emotional development (Piacentini et al., 2003). The theoretical understanding and conceptualisation of childhood OCD is based on adult models. The cognitive behavioural model is probably the most prominent psychological model and includes three constructs: TAF, meta-cognitive beliefs and inflated responsibility. The inflated responsibility model has been examined in several experimental and correlational studies with adults, and there is preliminary experimental

and observational evidence for a causal role of inflated responsibility in childhood OCD (e.g. Libby et al., 2004; Reeves et al., 2010).

It has been also proposed in the literature that environmental factors such as parental rearing style and family accommodation of OCD symptoms through, for instance, provision of reassurance, are important factors when considering the development and maintenance of OCD (Waters & Barrett, 2000). Research, however, on this behaviour in relation to childhood OCD is absent.

1.7 Research Aims and Rationale

Reassurance seeking is frequently observed in individuals with OCD and can lead to significant accommodation by family members and to significant distress. It has been hypothesised that reassurance seeking is driven by fear of negative outcomes ,and that individuals seek reassurance to increase their certainty that the feared outcome will not occur, or if it does, that they will not be uniquely responsible. Reassurance seeking seems to temporarily reduce anxiety, but leads to increased anxiety and reassurance seeking in the future. Although the nature of compulsive reassurance seeking has been described in the literature from a clinical perspective, research on reassurance-seeking behaviour in childhood OCD is lacking. Thus, the aim of this study is to investigate the association between reassurance seeking, inflated responsibility and children's anxiety. In addition, it was hypothesised that if mothers shared the inflated responsibility beliefs of their child this might have an impact on their behaviours in the task, specifically on their reassurance-giving behaviours. Therefore, the impact of maternal reassurance on a child's reassurance-seeking behaviour will also be explored.

1.8 Research Hypotheses

Hypothesis 1. In a condition of high maternal responsibility, mothers will offer more reassurance to their children than mothers in a low maternal responsibility condition.

Hypothesis 2. Children in a high maternal responsibility condition will seek more reassurance than children in a low maternal responsibility condition.

Hypothesis 3. Children in high maternal responsibility condition will check more, hesitate more, and take longer to complete the sorting task than children in the low maternal responsibility condition.

Hypothesis 4. After completing the sorting task children in the high maternal responsibility condition will report higher levels of anxiety than children in the low maternal responsibility condition.

CHAPTER TWO

2. Method

2.1 Overview

In this chapter, a description of the design of the current study is presented. This is followed by a description of participants, the experimental task and measures. Subsequently, ethical considerations are addressed. Finally, the procedure of the study is explained in detail.

2.2 Design

The current study used a between-groups experimental design. The independent variable was perceived responsibility, with two levels of manipulation: high and low responsibility. Mother-child dyads were randomly allocated to two experimental groups, high responsibility and low responsibility, using a block randomisation method.

The dependent variables were:

1. Number of times child seeks reassurance.

2. Number of times mother gives reassurance.

3. Number of checks.

4. Number of hesitations.

5. Time taken to complete the task.

6. Level of child anxiety.

Data was collected before and after the experimental manipulation. Demographic information, anxiety symptoms in children and their mothers, and child depression symptoms were measured before the experimental manipulation, and were controlled in the statistical analysis where necessary. The children's state anxiety was also measured before and after the experimental task. Non-parametric tests were used when data was skewed.

2.3 Participants

The participants were 36 children aged between 9 and 11 years, and their mothers. This age group was chosen because evidence from previous research (Barrett & Healy, 2003) suggests that responsibility beliefs are developed from this age, and because, on average, people develop their first OCD symptoms between the ages of 7.5 and 11.6 (Honjo et al., 1989; Thomsen & Mikkelsen, 1991).

2.3.1 Inclusion and Exclusion Criteria

Children were included if they were age between 9 and 11 years old and were fluent in English. They were excluded if they had special educational needs (as determined by teachers), a nut allergy, colour blindness or were under the care of Child and Adolescent Mental Health Services (CAMHS).

Children were only able to take part in the study if their mother also consented to take part. Mothers, rather than fathers, were recruited, following Bogels & Phares (2008), who suggest that mothers and fathers may have different roles in the development and maintenance of child anxiety disorders. Therefore, including both mothers and fathers might have made the interpretation of the results difficult.

2.3.2 Sample Size

The sample size was calculated with the GPOWER program (Faul, Erdfelder, Lang, & Buchner, 2007). Sample size calculation was based on data from Reeves et al. (2010), which investigated the manipulation of responsibility in non-clinical children. They reported a large effect size (d = 0.64; Cohen, 1992) for the variable of perceived responsibility. Based on a large effect size and a significance level of 5%, 36 mother-child dyads were recruited in each experimental group (total n=72) to achieve 80% power.

2.3.3 Recruitment

Children were recruited from three primary schools in Norfolk. Eight head teachers were initially contacted by email and three agreed to take part (see Appendix A for information about the participating schools). On receipt of the head teachers' written permission for the children and their mothers to be contacted (Appendix B), information packs were sent to mothers via the schools. Information packs consisted of an invitation letter (Appendix C), an information sheet and a consent form for mothers (Appendices D and E), and information and assent forms for young people (Appendices F and G). To encourage participation, a £3 book token was offered to schools for every young person taking part.

90 information packs were sent to children and mothers from Primary School A of which 10 were returned, giving a response rate of 11%. 154 information packs were sent to Primary School B, of which 16 were returned, giving a response rate of 10.4 %. 126 packs were sent to primary School C, of which 10 were returned, giving a response rate of 7.9 %. The overall response rate was 9.7%.

2.3.4 Demographic Data

In total 36 children and their mothers participated in the study. 15 of the children were male (41.7%) and 21 were female (58.3%). The mean age of the sample was 10.3 years (SD =0.6). Full demographic data is reported in the results Section 3.2.

2.4 Experimental Task

The experimental task was adapted from Reeves et al. (2010). Children were given a bag of 120 sweets of six different colours (blue, green, orange, gold, brown, and white). Children were told that the blue and green sweets contained nuts, the orange and gold

sweets might contain nuts, and the brown and white sweets did not contain nuts. They were told that their task was to sort the sweets into three bowls.

Responsibility was induced by telling all children that the sweets would be given to a class of children, one of whom had a nut allergy. They were told that the researcher would not check the sweets before they were given to the children so they needed to sort the sweets as carefully as possible. The children were given the following instructions: "Please listen carefully to the following instructions. It is not a test and you can ask your Mum for help if you need to. In front of you, there are 120 sweets that have got all mixed up. The blue and green sweets contain nuts. The orange and gold sweets might contain nuts, because they were made in a factory where there are nuts. The brown and white sweets do not contain any nuts. Later on, I will be giving the sweets to some children where one child has a nut allergy. This is why I would like you to sort the sweets based on whether they have nuts in them or not.

I would like you to sort the sweets by putting them into these bowls. Put all the sweets with nuts (blue and green sweets) into this bowl. The sweets that might contain nuts (orange and gold sweets) into this bowl. The sweets without nuts (brown and white sweets) into this bowl. I have written it out on this piece of paper to remind you. Take one sweet at a time without looking in the bag. Work as quickly and as carefully as you can. If you are not sure, you can check the bowls and change the sweets as many times as you want.
After you have finished, I will not be checking how you have sorted the sweets before I give them to the children. Therefore it is important that you sort the sweets as carefully as possible."

Maternal reassurance was manipulated as follows:

High Responsibility (Mothers)

Mothers in the high responsibility group were told by the researcher: "I will be asking your child to sort sweets based on whether they have nuts in them or not. Your child will also be told that after they finished I will not be checking how they have sorted the sweets before I give them to a group of children where one child has a nut allergy".

Low Responsibility (Mothers)

Mothers in this group were told by the researcher: "I will be asking your child to sort sweets based on whether they have nuts in them or not. Your child will also be told that the sweets will be given to a class of children, one of whom has a nut allergy. I will tell them that I will not check the sweets before they are given to the children and that they therefore need to be very careful. However, as you know, this is an experiment. After your child has sorted the sweets I will not give the sweets to a group of children so it does not matter whether your child makes mistakes or not".

On the researcher's arrival at participants' homes mothers were seen on their own first. This was to ensure that the children did not hear the instructions given to the mothers.

2.5 Ethical Considerations

Ethical approval for the study was given by the Faculty of Health Ethics Committee, at the University of East Anglia (UEA) (see Appendix H for letters). Guidance and recommendations of the British Psychological Society (BPS) and Medical Research Council (MRC) on conducting research were also followed.

2.5.1 Consent

Head teachers and mothers were given information sheets describing the overall objectives and procedures of the study. A telephone number was provided so that mothers and children could contact the researcher if they wanted further information about the study. Mothers and young people returned consent forms if they gave permission for the

researcher to telephone them at home (Appendix E), and if they wanted to participate in the study.

Children were given age-appropriate information sheets (Appendix F) and were also asked to give their written assent to participation in the research (Appendix G). All participants were told that they could withdraw from the research at any point without giving a reason. They were also told that withdrawal would not have any impact on children's care or education.

2.5.2 Confidentiality

All data was managed in accordance with the Data Protection Act (1998) and the UEA's guidelines on Good Practice in Research. All written records and videos were kept in a locked cupboard. All participants were identified by a unique identification number. Mother and child questionnaires were linked numerically. Only the researchers held an identification list along with the raw data. Young persons and mothers were informed that their identity would not be revealed in any research outputs.

2.5.3 Deception

The British Psychological Society's (BPS, 2006) ethical guidelines state that in order to study some psychological processes, it is sometimes necessary to withhold some details of test hypotheses from participants. In this study, children were given false information about their level of responsibility, and mothers in the high responsibility condition were given false information about the consequences of the task. The BPS guidelines state that the use of deception should be based on the reaction of participants once the deception is revealed. A version of this experimental task had been used previously (Reeves et al., 2010; Reynolds et al., in prep) and none of the participants became distressed. Similarly, none of the participants in the current study became distressed at any point.

Children and mothers were given an opportunity to discuss their experience of taking part.

2.5.4 Managing Distress

None of the participants became distressed during the sorting task. Three children reported psychological difficulties at a clinically significant level as measured by SCAS and their parents were informed by letter and advised to contact their general practitioner.

2.6 Measures

2.6.1 Demographic Questionnaire

Mothers completed demographic questionnaires before the experimental task. The questionnaire gathered information regarding age, gender, ethnicity, colour blindness of the child, and child's and family's history of allergies.

2.6.2 Dependent Measures

The child and mother were videotaped during the sorting task and this was used to rate behaviours. The child measures were based on the measures used by Reeves et al. (in press).

2.6.2.1 Measures of child behaviour

1. Number of times child seeks reassurance. Reassurance was defined as: (a) asking the mother if what they were doing was right, (b) asking the mother to check it for them, (c) asking the mother to do it with them, (d) asking the mother what would happen if they did it wrong, (e) glancing at the mother, (f) looking at the mother for an extended period of time.

Each instance of reassurance seeking initiated by the child was counted. Mothers' responses to children's reassurance-seeking behaviour were not counted as maternal reassurance giving.

2. Number of checks. A check was defined as: (a) stopping the gaze or looking inside a particular container for at least one second, (b) emptying the content of a container on the table or into the participant's hand, (c) sorting through the bowls at any point during the task, (d) looking at the colour key to see whether a sweet contained nuts, (e) feeling the sweet for at least one second.

3. Number of hesitations. The researcher counted the number of hesitations made by a child during the sorting task. A hesitation was defined as: (a) a movement of a child's hand between two different containers for at least one second, (b) close examination of a sweet for at least one second.

4. Time taken to complete the task. The time taken to complete the task was measured in seconds with a stopwatch. Timing started as soon as a child was told to start the task and was stopped when the child informed the researcher or their mother that they had finished.

2.6.2.2 Measures of mother behaviour. Reassurance giving was defined as: (a) glancing over, (b) helping the child with the task, (c) offering unprompted reassurance.

2.6.2.3 The State Trait Anxiety Inventory for Children (STAIC; Spielberger, Edwards, Lushene, Montuori, & Platzek, 1973). The STAIC is a self-reporting measure used to assess the temporary condition of 'state anxiety' and long-standing 'trait anxiety' in young people aged between 9 and 12 years of age. It consists of two separate scales. Each scale has 20 items on a 3-point Likert scale, ranging from 0 (never true/not at all) to 2 (completely true/often). The STAIC has good test-retest reliability ($r=.63$ to $.72$; Finch, Kendall, Montgomery, & Morris, 1975). Only the state anxiety scale was administered. It was chosen because it measures subjective, consciously perceived feelings of apprehension, tension, and worry that fluctuate over time (Spielberger et al., 1973). The STAIC was used to measure child anxiety before and after the task, to determine whether the task changed the child's level of state anxiety

2.6.3 Covariates

2.6.3.1 The Spence Children's Anxiety Scale (SCAS; Spence, 1998). The SCAS is a self-reporting measure consisting of 45 items. It has been designed to assess symptoms of anxiety in children aged 8 to 12 years old. It has six subscales; panic/agoraphobia, social anxiety, separation anxiety, obsessions/compulsions, generalised anxiety, and fear of physical injury. Children are asked to rate the frequency of each item on a 4-point scale ranging from 0 (never) to 3 (always). The measure has high internal consistency (α .92) (Spence, 1998). Test-retest reliability coefficient after 6 months was found to be .51 for the total score (Spence, 1998). The SCAS was used to measure anxiety and obsessive-compulsive symptoms across the groups. This was done to assess whether there is a relationship between children's scores on the SCAS and their performance.

2.6.3.2 Children's Depression Inventory-Short Form (CDI-S; Kovacs, 1985). The CDI-S is a 10-item questionnaire designed to measure symptoms of depression in children aged 7 to 17 years. Children record how much they have been bothered by each depressive symptom during the past two weeks on a 3-point scale (0 to 2). Examples are: 'I am sometimes sad', 'I am often sad', 'I am always sad'. The CDI-S has a good level of internal consistency (α .80) (Kovacs, 1985). Test-retest reliability coefficients range from .74 to .77 in a non-clinical sample (Smucker, Craighead, Craighead, & Green, 1986; Rush et al., 2005). The CDI-S was used to assess depression levels across the groups. This was done to see whether there is a relationship between children's scores on the CDI-S and their performance.

2.6.3.3 Beck Anxiety Inventory (BAI; Beck & Steer, 1993). The BAI is a 21-item, self-report measure of anxiety severity. The respondent is asked to rate how much they have been bothered by each symptom over the past week on a 4-point scale ranging from 0 to 3. The maximum score is 63 points. The BAI has been found to discriminate well

between anxious and non-anxious diagnostic groups. Test-retest reliability coefficient after one week is .75. The measure has high internal consistency (α .92; Rush et al., 2005). The BAI was used to provide a measure of maternal levels of anxiety, and to see if there is a relationship between the mother's anxiety and the child's performance.

The SCAS, the CDI-S and the BAI were administered before the experimental task. The CDI-S and BAI are not included in the Appendices as these are copyrighted measures which may not be replicated.

2.7 Procedure

Children were recruited from three primary schools in Norfolk. Schools were provided with information packs and asked to forward the packs to the children and their parents. Mothers and children willing to participate were asked to return the signed consent and assent forms to the school office. The researcher's contact details were provided and potential participants were encouraged to make contact if they had any questions or concerns.

Children and mothers were assigned to one of the two experimental conditions by means of block randomisation. The experiment was carried out in children's homes. In advance of the task, children were told that taking part in the experiment involved sorting different coloured sweets and answering some questions. They were reminded that it was not a test and that they could stop at any point.

Before the experimental task, children were asked to complete SCAS, the CDI-S, and the state anxiety scale from the STAIC. All children were then given the same information about the sorting task. The information included descriptions of nut allergies and how eating nuts can affect someone with a nut allergy. All children were then told that the researcher would not be checking how they had sorted the sweets. Therefore, it was important that they sorted the sweets as carefully as possible.

Mothers in the high responsibility condition were given the same information about the sorting task as the children. They were not briefed about the consequences of the sorting task. Mothers in the low responsibility condition were briefed about the consequences of the sorting task. They were told that the researcher would not be giving the sweets to a group of children.

During the task, children and mothers were videotaped to measure their behavioural responses and to allow for a measure of inter-rater reliability. The measure of the child's state of anxiety was administered again after the sorting task.

After completing the final measures, children and mothers were given an opportunity to talk about their experiences of taking part. Each child was given a certificate of participation, and schools received a £3 book voucher for every child who participated.

Videos were observed and the behavioural variables were recorded. Another trainee clinical psychologist, blind to experimental conditions, was asked to watch 30% of randomly selected videos and to rate the behavioural variables, in order to provide a measure of inter-rater reliability.

CHAPTER THREE

3. Results

3.1 Overview

This chapter is organised into three main sections. The first section presents demographic data for participants including age, gender and ethnic origin. It describes how the data was handled, including the process of transforming variables which were not normally distributed, and the internal consistency of the measures that were administered before and after the experimental task. The descriptive statistics for all measures used are also presented.

The second section presents between-group comparisons on potential confounding variables and presents inter-rater reliability for the behavioural measures used. There were no significant between-group differences for the potential confounds, and the behavioural measures were coded reliably. The research hypotheses are tested in the third section. First the hypothesis that mothers in the high maternal responsibility condition would provide more reassurance than those in the low maternal responsibility condition is tested. There was a significant effect of the experimental manipulation, and clear group differences in mothers' reassurance giving. Next, the children's behaviours are compared to test the second and third hypotheses. Overall, there was a significant multivariate between groups difference on the child variables. Some supplementary data analyses are then described and the chapter concludes with a summary of results, and addresses each research hypothesis in turn.

3.2 Demographic Data

The demographic characteristics of the whole sample and each of the experimental groups were explored. Table 1 presents the gender and age distribution in the whole

sample and each of the groups. The mean age of participants was 10.3 years ($SD = 0.6$). The age range was 9.1–11.3 years. There was no significant difference in the age of children in the two experimental groups.

Table 1. Gender and age of participants

	N	Males	Females	Mean age	SD age
Whole Sample	36	15	21	10.3	0.6
High Responsibility	18	7	11	10.3	0.6
Low Responsibility	18	8	10	10.3	0.7

The majority of the sample was white British (89%), reflecting the demographic of the local area. The remaining participants were of mixed race (11%). Information was also collected on the child's experience of allergies; 75% of the sample reported experience of allergies, which included knowledge of friends', peers' and relatives' allergies, as well as direct personal experience.

3.3 Treatment of Data

The data was entered into a SPSS spreadsheet and screened for anomalous values and missing data. Unusual variable values were checked against the original questionnaires to address errors in data entry. There was no missing data.

3.4 Internal Consistency of the Questionnaire Measures

Cronbach alpha (α) was used to determine internal consistency of the STAIC. The STAIC was administered pre- and post-task and it was important to assess internal consistency so that changes could be accurately attributed to the experimental manipulation. A Cronbach alpha of above .8 indicates good internal consistency (Bryman & Cramer, 2001). The alpha value for the STAIC was 0.9 indicating good internal consistency.

3.5 Descriptive Statistics

This section presents descriptive data for each measure used in the main analyses. Histograms were generated in SPSS and used to visually examine the distribution of data. Box plots were generated to check for outliers. Significant skew and kurtosis was assessed using the following formulas (Tabachnick & Fidell, 2007):

$$\frac{\text{Skew}}{\text{standard error (se) of skew}} \qquad \frac{\text{Kurtosis}}{\text{standard error (se) of kurtosis}}$$

Z scores for skewness greater than 2.58 or less than –2.58 were deemed significant at the .01 level. The .01 significance level was considered sufficient owing to the relatively small sample sizes within groups (Field, 2000). Where data was not normally distributed log and square root transformations were used to improve the distribution if possible.

The variables with significant skew and/or kurtosis are flagged in the following tables. Data is presented for the whole sample and for each of the two groups.

3.5.1 Spence Children's Anxiety Scale (SCAS; Spence, 1998)

Table 2 presents descriptive data for the SCAS total and OCD subscale scores. The mean scores on the SCAS for the experimental groups were below the mean clinical cut-off score of 42.48 reported by Spence (1998). The scores of three children were above the cut-off score of 42.48 indicating that they might be experiencing clinical levels of anxiety. Parents of those children were informed by letter, as detailed in the Method Section 2.5.4 of this thesis. Mean scores on the OCD subscale of the SCAS ranged from 4.06 to 4.89, somewhat lower than 6.09 reported by Spence (1998).

Table 2. Descriptive statistics for the SCAS total score and OCD subscale

Group	N	Range	Mean	SD	Median	Skew	Kurtosis
Total SCAS							
Whole Group	36	41	25.81	10.7	23.5	.70	-.35
High Resp[a]	18	36	23.39	10.3	22.0	.87	-.04
Low Resp	18	40	28.22	10.9	25.5	.63	-.44
OCD Subscale							
Whole Group	36	11	4.47	3.1	4.0	.25	-.83
High Resp	18	11	4.06	3.6	4.0	.58	-.83
Low Resp	18	8	4.89	2.4	5.0	-.12	-1.05

$p < 0.01$* [a] In all of the following tables Resp refers to Responsibility

The data was normally distributed for the SCAS total and for the OCD subscale. Visual inspection of the data indicated no significant outliers in either of the groups.

3.5.2 Children's Depression Inventory-Short Form (CDI-S; *Kovacs, 1985)*

The descriptive data for the CDI-S is presented in Table 3. Mean scores were similar across the groups. None of the scores exceeded the clinical cut-off standardised *T* score of 65.

The distribution across both groups was significantly positively skewed. Performing log transformations improved the distribution of scores. The transformed values of skewness and kurtosis are reported in Table 4.

Table 3. Descriptive statistics for the untransformed CDI-S

Group	N	Range	Mean	SD	Median	Skew	Kurtosis
Whole Group	36	0-6	1.0	1.47	.5	1.98*	3.91*
High Resp	18	0-6	1.1	1.53	1.0	2.12*	5.54*
Low Resp	18	0-5	.8	1.45	0.0	2.03*	3.71*

* $p < 0.01$

Table 4. Transformed values of skewness and kurtosis for CDI-S

Group	N	Skewness	SE	Kurtosis	SE
Whole Group	36	.87	.39	-.17	.76
High Resp	18	.70	.53	-.20	1.03
Low Resp	18	1.15	.53	.41	1.03

3.5.3 The State Trait Anxiety Inventory for Children (STAIC; *Spielberger, Edwards, Lushene, Montouri & Platzek, 1973)*

Table 5 shows the descriptive data for the pre- and post-task STAIC scores. In the high maternal responsibility group, pre- and post-task data was significantly negatively skewed. Performing square root transformations did not improve the distribution of the data. Therefore the scores were analysed using non-parametric tests.

Table 5. Descriptive statistics for untransformed pre and post STAIC

Group	N	Range	Mean	SD	Median	Skew	Kurtosis
			Pre-task STAIC				
Whole Group	36	0-31	20.28	10.8	25.0	- .80	- .96
High Resp	18	1-31	23.61	8.9	28.0	- 1.50*	1.37
Low Resp	18	0-31	16.94	11.8	21.0	.30	1.75
			Post-task STAIC				
Whole Group	36	0-48	19.78	11.6	22.0	- .34	- .21
High Resp	18	1-31	21.17	8.8	22.5	- 1.40*	1.06
Low Resp	18	0-48	18.39	13.9	20.0	.13	- .62

* $p < 0.01$

3.5.4 Beck Anxiety Inventory (BAI; Beck & Steer, 1993)

The descriptive data for the BAI is presented in Table 6. Data was significantly positively skewed in the high maternal responsibility group.

Table 6. Descriptive statistics for the untransformed BAI

Group	N	Range	Mean	SD	Median	Skew	Kurtosis
Whole Group	36	0-16	3.8	3.62	3.0	1.58	2.97
High Resp	18	0-16	3.3	3.64	3.0	2.65*	8.89*
Low Resp	18	0-12	4.2	3.64	4.0	.75	.53

* $p < 0.01$

The transformed values of skewness and kurtosis are reported in Table 7. Analyses comparing the groups on this variable used the transformed data.

Table 7. Transformed values of skewness and kurtosis for BAI

Group	N	Skewness	SE	Kurtosis	SE
Whole Group	36	-.25	.39	-.50	.76
High Resp	18	-.06	.53	.48	1.03
Low Resp	18	-.50	.53	-.77	1.03

3.5.5 Behavioural Measures

3.5.5.1 Number of reassurance giving. Descriptive statistics for the number of reassurance giving during the sorting task is presented in Table 8.

Table 8. Descriptive statistics for maternal reassurance giving

	Mean	SD	Median	Skew	Kurtosis
Whole Group	2.4	2.52.5	2.0	1.0*	.3*
High Res	4.1		3.0	.4	-. 7
Low Res	.8	1.1	.5	1.4*	1.6

* $p < 0.01$

The low maternal responsibility group demonstrated significant positive skewness on the variable of maternal reassurance giving. Performing square root transformations improved the distribution of this variable. The transformed values of skewness and kurtosis are reported in Table 9. Analyses comparing the groups on this variable used the transformed data.

Table 9. Transformed values of skewness and kurtosis for maternal reassurance giving

Group	Skewness	SE	Kurtosis	SE
Whole Group	.03	.39	-1.20	.77
High Resp	-.07	.55	-.40	1.06
Low Resp	1.00	.53	.19	1.03

3.5.5.2 Number of checks, hesitations and incidences of reassurance seeking.

Descriptive statistics for the number of checks, hesitations, and reassurance seeking made

during the sorting task, and time taken to complete the sorting task are presented in Table

10.

Table 10. Descriptive statistics for child behavioural dependent variables

	Mean	SD	Median	Skew	Kurtosis
Checks					
Whole Group	7.5	3.3	7.0	1.5*	3.4*
High Res	7.7	4.1	7.0	1.6*	2.6
Low Res	7.2	2.4	7.0	.33	-.65
Hesitations					
Whole Group	4.4	2.7	4.0	1.2*	2.0*
High Res	5.7	2.8	5.0	1.3	.8
Low Res	3.1	1.8	3.0	.57	2.1
Reas Seek					
Whole Group	2.2	1.6	2.0	.11	1.93
High Res	2.8	1.6	3.0	-.49	- .06
Low Res	1.6	1.5	1.5	-.06	- .20
Time					
Whole Group	437	98.8	420	.68	.44
High Res	467	111.0	452	.58	-.09
Low Res	407	77.0	397	.04	-1.13

*$p < 0.01$

The high responsibility group demonstrated significant positive skewness on the

variable of checks. Log transformation was performed on this variable which improved the

distribution. The transformed values of skewness and kurtosis are reported in Table 11.

Analyses comparing the groups on this variable used the transformed data.

Table 11. Transformed values of skewness and kurtosis for checks

Group	N	Skewness	SE	Kurtosis	SE
Whole Group	36	.40	.39	.23	.76
High Resp	18	.61	.53	.33	1.03
Low Resp	18	-.16	.53	-.86	1.03

3.6 Between Group Comparisons on Demographic and Confounding Variables

MANOVA was used to compare the groups on age, total SCAS, OCD subscale of the SCAS, CDI-S and BAI scores. MANOVA was chosen as it reduces the effect of Type 1 error and because it may have greater power because it explores whether groups differ along a combination of variables (Field, 2000). Consideration was given to the assumptions underpinning MANOVA, such as normal distribution of data, random sampling method and homogeneity of variance, prior to choosing this test. Box's test indicated that the assumptions of homogeneity of covariance matrices, $F_{(15, 4655)} = .965$, $p = .49$) had been met.

There was no significant multivariate between group difference for the baseline measures, $F_{(5, 30)} = .596$, $p = .70$. Univariate tests showed no significant differences between the groups. However, visual inspection of the SCAS total scores indicated that the scores in the high maternal responsibility group were lower (M=23.39, SD= 10.3) than the scores in the low maternal responsibility group (M=28.22, SD= 10.9). Therefore, this variable was controlled for in the subsequent analyses.

Differences between groups on the categorical variable gender, were examined using Pearson's Chi Square test. No significant differences were observed ($\chi_2(1) = 1$, $p =$

.31). As the STAIC pre-data was not normally distributed, the non-parametric Mann-Whitney test was used. There was no significant group difference for the STAIC pre-test (U = 106.5, ns, r = -.29). Further analyses did not control for gender and pre-STAIC.

3.7 Inter–Rater Reliability

Intra-class correlations were used to measure inter-rater reliability for hesitations, checks, reassurance seeking, and reassurance giving. Data from 12 participants (30% of the sample) was randomly selected and rated by a researcher who was blind to the experimental conditions. The reliability coefficients were all above 0.8 (see Table 12) indicating good inter-rater reliability (Landis & Koch, 1977).

Table 12. Intra-class correlation coefficients for checks, hesitations, reassurance seeking and reassurance giving

Variable	ρ
Checks	0.9
Hesitations	0.8
Reassurance Seeking	0.9
Reassurance Giving	0.8

N = 12

3.8 Interim Summary

The STAIC demonstrated a good level of internal consistency. The SCAS, SCAS OCD subscale, hesitations, reassurance seeking and the time taken to complete the task were normally distributed. Measures of depression (CDI), child's state anxiety (STAIC), mother's anxiety (BAI), and behavioural measures of checks, and reassurance giving were not normally distributed. The CDI-S, the BAI, checks, and reassurance-giving data were successfully transformed using log transformations. The STAIC was analysed using non-parametric tests, as it was not possible to amend the distributions using log or square root transformations.

There were no significant between-group differences in age, gender, state anxiety, depression, OCD, and maternal anxiety. It must be noted, however, that mothers' scores on the BAI did not seem congruent with their subjective reports of their anxiety and with how they presented during the interview and experimental task. Therefore, caution should be taken when interpreting the results of this measure. Visual inspection of the data suggested that at baseline the low maternal responsibility group reported higher anxiety ratings (SCAS) and this will, therefore, be controlled in subsequent analyses. There was good inter-rater reliability for all behavioural measures, indicating that the data was rated in a reliable manner. Subsequent sections address how this data was used to test the research hypotheses.

3.9 Hypotheses Testing: Between-Group Comparisons

In order to test if the experimental manipulation had the expected effect on maternal behaviours, an independent sample t-test was conducted to compare maternal reassurance giving in both groups. There was a significant difference in the amount of reassurance given between the high maternal responsibility ($M = 2.19$, $SD = .58$) and the low maternal responsibility condition ($M = 1.32$, $SD = .39$); $t(33)$ 5.18, $p < .05$ (two-tailed). Figure 2 shows the mean number of maternal reassurance-giving behaviours during the tasks.
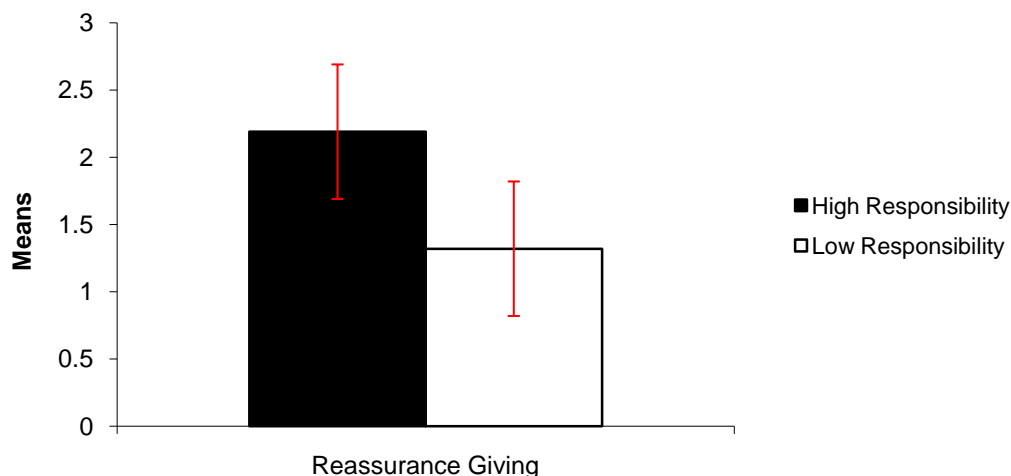
Figure 2. Means for transformed maternal reassurance giving

Thus mothers in the experimental group, who believed that their child had high responsibility in the task, offered significantly more reassurance to the child than those mothers in the control group who knew that their child did not have high responsibility.

In this study, reassurance giving was defined as: (a) glancing over, (b) helping the child with the task, and (c) offering unprompted reassurance. In total, mothers in the high maternal responsibility group reassured 73 times. This included 27 (36.9%) instances of glancing, 29 (39.8%) instances of helping with the task, and 17 (23.3%) instances of unprompted reassurance. Mothers in the low maternal responsibility group gave a total of 13 reassurance-giving behaviours. This total comprised 7 instances of glancing (54%), 4 instances of helping the child with the task (30.7%), and 2 instances of unprompted reassurance (15.3%).
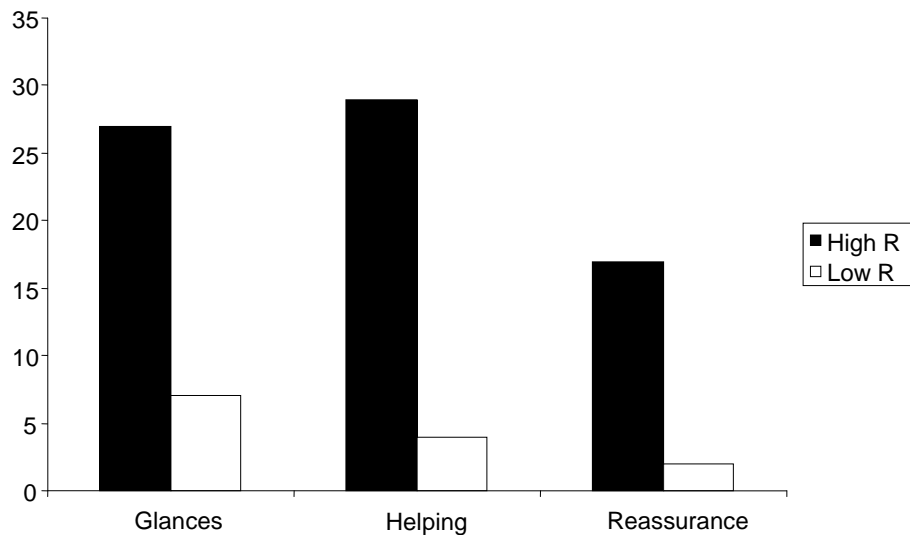
Figure 3. Instances of glancing, helping, and unprompted reassurance.

Given that the manipulation did significantly change maternal behaviours, a MANCOVA was used to compare children's behaviour and anxiety. The dependent variables were children's reassurance seeking, checks, hesitations, and time taken to complete the sorting tasks. SCAS was entered as a control as there was some difference in this at baseline. There was a significant multivariate between-groups difference, $F (4, 30) = 3.076$, $p = .03$ showing that the manipulation of mothers' beliefs had an effect on their children's behaviours. Subsequent univariate analyses indicated that the significant group differences were in the children's reassurance seeking $F (1, 33) = 4.999$, $p = .03$, and number of hesitations $F (1, 33) = 10.701$, $p = .00$. There was no significant between-groups difference in the number of checks, $F (1, 33) = .29$, $p = .59$, or in the time taken to complete the sorting task, $F(1, 33) = 3.835$, $p = .06$. Figure 4 shows the mean number of reassurance seeking, hesitations, checks, and the mean time taken to complete the tasks.
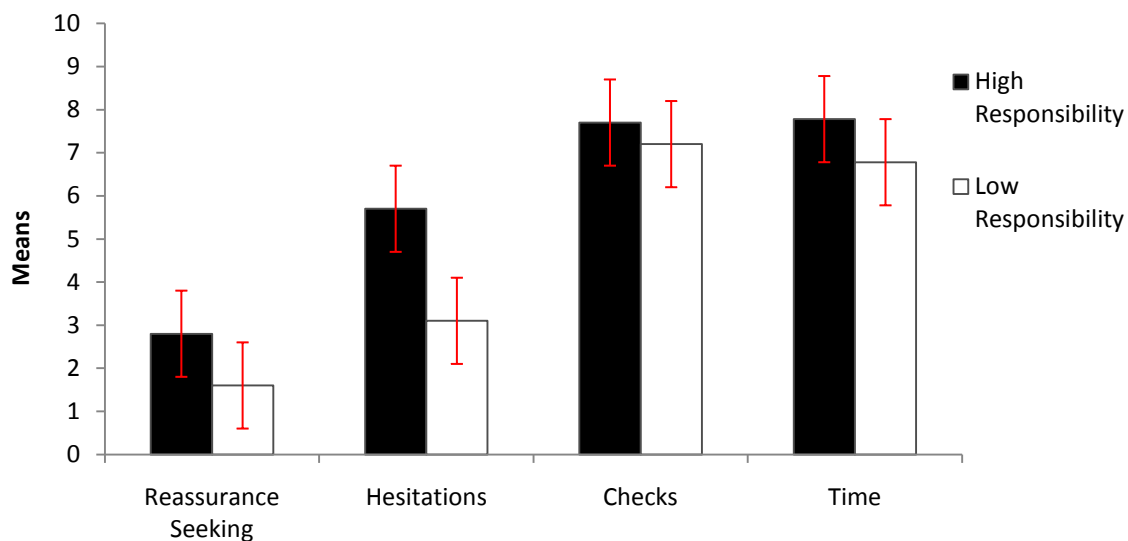
Figure 4. Means for reassurance seeking, checks, hesitations and time taken to complete the sorting task

As the anxiety scores (STAIC post) were not normally distributed and could not be successfully transformed, the groups were compared using a non-parametric Mann-Whitney test. There was no significant between-groups difference in children's anxiety after the experimental task (high responsibility median = 22.5; low responsibility median = 20), U=143, p <.55, r = -0.1.

3.10 Summary of Results

This section summarises the findings in relation to each research hypothesis.

Hypothesis 1. In a condition of high maternal responsibility, mothers will offer more reassurance to their children than mothers in a low maternal responsibility condition.

This hypothesis was tested using independent t- test. There was a significant between-groups difference in mothers' reassurance giving during the sorting task. Thus the hypothesis was supported.

Hypothesis 2. Children in a high maternal responsibility condition will seek more reassurance than children in a low maternal responsibility condition.

The MANCOVA showed a multivariate between-groups difference in children's behaviour. Univariate F tests showed that children in the high maternal responsibility condition sought significantly more reassurance from their mothers than the children in the low maternal responsibility group. Thus Hypothesis 2 was supported.

Hypothesis 3. Children in a high responsibility condition will check more, hesitate more, and take longer to complete the sorting task than children in the low responsibility condition.

Univariate F test also showed that there was as significant between-groups difference in the number of times children hesitated. There was no significant between-groups difference in the number of checks, or in time taken to complete the task. Therefore, Hypothesis 3 was partly supported.

Hypothesis 4. After completing the sorting task children in the high maternal responsibility condition will report higher levels of anxiety than children in the low maternal responsibility condition.

This hypothesis was not supported as the Mann-Whitney test revealed no significant difference in the anxiety after the experimental task between the groups.

CHAPTER FOUR

4. Discussion

4.1 Overview

The aim of this chapter is to evaluate the research findings in the light of relevant empirical literature. Each of the hypotheses will be reviewed in turn and the findings summarised. This is followed by a methodological critique. The potential implications for clinical practice and current theory of OCD are then presented. Subsequently, possible directions for future research are discussed. The chapter concludes with an overall summary of the thesis.

4.2 Previous Research and Current Findings

Hypothesis 1. Manipulation check: In a condition of high maternal responsibility, mothers will offer more reassurance to their children than mothers in a low maternal responsibility condition.

The experimental manipulation had a significant effect on the dependent variable of maternal reassurance-giving, suggesting that mothers' beliefs about their child's responsibility led them to provide more reassurance to their child. Mothers who believed that their child was in a high-responsibility condition offered around four times as much reassurance as mothers who believed that their child had no responsibility. As all children had the same task and believed themselves to have high responsibility, and as their mothers were aware of their child's task, it is reasonable to conclude that mothers' reassurance behaviours were not linked to their beliefs about their children's anxiety.

Hypothesis 2. Children in a high maternal responsibility condition will seek more reassurance than children in a low maternal responsibility condition.

Children in the high maternal responsibility group sought more reassurance than children in the low maternal responsibility group. The children in both groups were given the same (high) level of responsibility. Therefore, it is reasonable to conclude that their reassurance seeking was causally related to their mothers' rates of reassurance giving. Importantly, because this was an experimental manipulation, a causal relationship between maternal beliefs and maternal reassurance, and maternal reassurance and child reassurance-seeking and hesitations, was demonstrated. This causal association has not previously been demonstrated. As this is the first study of its kind and because of methodological limitations (discussed below in Section 4.4), replication of the findings is needed before any definite conclusions can be drawn.

The results are, however, consistent with theory on the bidirectional model of parent-child interactions, which suggests that child behaviour influences parent behaviour and vice versa (van Noppen & Steketee, 2009; Rapee, 2001). For example, from a theoretical perspective, Fredman, Chambless, and Stekettee (2004) suggested that emotional over-involvement may convey to a child that their parent does not believe in their ability to carry out a task, which in turn may increase their anxiety and subsequent OCD symptoms.

The current findings are also interesting in the light of observational research on threat interpretation in mothers and children. Dadds, Barrett, Rapee and Ryan (1996) found that during family discussions, parents of anxious children were more likely to reinforce their child's avoidant behaviour than parents of control children. Following such family discussion, anxious children chose more avoidant solutions, suggesting that the information they had received from their mothers impacted on their decisions and potential behaviour. Similarly, Creswell, Schniering and Rapee (2005) found that threat interpretations of anxious mothers and their children were significantly positively

correlated. However, these previous research findings relate to observations and correlational data and have not, therefore, been able to clearly demonstrate a causal link among parental beliefs, parental behaviours and child behaviours.

Hypothesis 3: Children in a high maternal responsibility condition will check more, hesitate more, and take longer to complete the sorting task than children in the low maternal responsibility condition.

The groups did not differ with respect to the number of checks. Children in the high maternal responsibility group took longer to complete the sorting task than the children in the low maternal responsibility group, but this difference was not statistically significant. Therefore, this aspect of the hypothesis was not supported. The experimental manipulation, however, had a significant effect on the number of hesitations. No other experimental study identified during the literature review specifically examines the effects of mothers' beliefs about their child's responsibility on child OCD behaviours.

A stronger manipulation of reassurance giving and/or a larger sample size might have produced significant results for checking and time. It is also possible that the children in the high maternal responsibility condition did not need to check more than children in the low maternal responsibility condition because their reassurance seeking and the maternal reassurance given had the effect of reducing their anxiety and acted as alternative 'safety behaviours'. Thus, theoretically, reassurance seeking and giving may have worked as a substitute for checking. Alternatively, maternal reassurance giving was perceived by children as an indirect form of checking. Both checking and reassurance could provide negative reinforcement, i.e. reduce anxiety and thus be functionally equivalent.

Hypothesis 4: After completing the sorting task children in the high maternal responsibility condition will report higher levels of anxiety than children in the low maternal responsibility condition.

There were no between-group differences in child anxiety after the sorting task. This hypothesis was, therefore, not supported. At first glance this is surprising, given the results of recent meta-analysis by McLeod, Wood, and Weisz (2007), in which lower levels of autonomy granting and excessive over-involvement of parents were more strongly associated with child anxiety than parental rejection. If reassurance is a form of maternal control, children in the high maternal responsibility group, who received more maternal reassurance (i.e. control), might be expected to have higher levels of anxiety.

In the experimental task, however, children were allowed to check, hesitate and seek as much reassurance as they wanted, which is likely to have led to their feeling less anxious and less doubtful than they would have been had they not been allowed to do that. In addition, the experimental manipulation brought about a context-specific, short-term alteration in mother's behaviours and, thus may not reflect longer-term interactions between mothers and children which might be more powerful. In line with principles of negative reinforcement, checking and reassurance seeking could be expected to reduce anxiety in the short-term. Following the principles of negative reinforcement, however, as the effects of negative reinforcement wear off, anxiety returns, evoking more need for checking and reassurance seeking. As a result, children learn less autonomy, which may lead to parental over-involvement and vice versa.

Interestingly, some children were more anxious before the experimental task than after the task. It is possible that not knowing what might be expected of them made them anxious, and that their anxiety was reduced once they had completed the relatively easy experimental task.

4.3 Interim Summary of Findings in Relation to Hypotheses

The primary aim of this study was to assess whether it is possible to manipulate maternal reassurance giving by experimentally manipulating mothers' perceptions of their

child's responsibility. The results indicated that the experimental manipulation was successful. Mothers in the high maternal responsibility group gave more reassurance than mothers in the low maternal responsibility group. Subsequently, the aim of this research was to examine the impact of maternal reassurance giving on children's OCD behaviours and anxiety. Children in the high maternal responsibility group sought more reassurance than children in the low maternal responsibility group. The groups did not differ with respect to anxiety after the task, checking during the task, or time taken to complete the sorting task, but children in the high maternal responsibility group hesitated significantly more than children in the low maternal responsibility group.

This study provides interesting but provisional support for a possible causal relationship between maternal beliefs and maternal reassurance giving, and between maternal reassurance giving and child reassurance seeking. Theoretically, given the likely impact of negative reinforcement, it is reasonable to assume that if anxiety and checking were observed over a longer period that significant between-group differences would be observed.

4.4 Methodological Critique

This section addresses the methodological strengths and weaknesses of the study.

4.4.1 Methodological Strengths

4.4.1.1 Design. The design of the study was a strength. The study used a between-groups experimental design, which allowed us to address the causal role of maternal beliefs and maternal reassurance. Investigation of causal inference was possible because the study manipulated maternal beliefs (the causal variable) and measured the outcome of this manipulation on mothers' and their children's behaviours (Goodwin, 2010). Possible confounding variables (child anxiety, OCD, depression, and mother anxiety) were

measured at baseline and the groups did not differ on these variables. Thus between-group differences cannot be attributed to possible confounding variables.

4.4.1.2. Participants. A strength of this study is the inclusion of younger children (9–11 year olds), as research investigating obsessive-compulsive symptomatology in younger children is important in developing developmentally sensitive theory and the treatment of OCD. The study used a non-clinical population, which was appropriate because the study was looking at causal mechanisms for which only a non-clinical sample is appropriate. Employing clinical populations would be useful for the exploration of maintaining factors in OCD, but this study specifically sought to examine aetiological factors in childhood OCD.

4.4.1.3 Ecological validity of the experimental manipulation. Evidence from clinical practice suggests that people are more likely to engage in compulsive behaviours at home, thus the study had good ecological validity. In addition, ecological validity was addressed by asking children to engage in a task that was relevant to their developmental stage.

4.4.1.4 Measures. A strength of the current study is the use of self-report measures which have good psychometric properties and have been used in research and clinical practice.

Mothers' scores on the BAI, however, were not congruent with their subjective reports of their anxiety, or with how they presented during the interview and experimental task. It is possible that mothers were reluctant to reveal information regarding their emotional functioning with their child present. In addition, it is possible that mothers were reluctant to share such information with an experimenter who was associated with their child's school (Stark, Humphrey, Cook, & Lewis, 1990). Other more subtle and less

clinical measures of mothers' anxiety, such as the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), might have provided a better measure of maternal mood. PANAS looks at a range of positive and negative emotions and, therefore, may be perceived by respondents as less clinical and less exposing.

A subscale of the SCAS was used as a measure of OCD symptoms to reduce the number of questionnaires administered to children. Adding a separate measure, such as the Leyton Obsessional Inventory-Child Version (Berg et al., 1988) or the CY-BOCS (Scahill, 1997), might have provided a more comprehensive assessment of children's OCD symptoms, but it would have also made the assessment process more lengthy, adding to the burden on participants. OCD symptoms were not a main dependent variable and, therefore, the use of the subscale of the SCAS was considered satisfactory.

4.4.2 Methodological Limitations

4.4.2.1 Statistical power. The size of the study was based on a power calculation which used large effect size (Reeves et al., 2010). It is possible that the present study was not powerful enough to detect between-group differences in, for example, the variables of checks or time. Recruiting a larger sample size might increase the power, but the bigger the sample, the greater the likelihood that we will recognise very small effects as significant, making a Type I error (Goodwin, 2010).

4.4.2.2. Recruitment. A significant limitation of the study is the low response rate (9.7% of all those invited to take part), suggesting that the results are unlikely to be representative of the population. It is unclear whether those who took part differed systemically from those who did not respond. The response rate might have been increased by offering incentives directly to the children in addition to the incentives offered to the schools, but this would have increased the cost of the study. Information packs were sent to the parents through their children and children were required to remember to give

information packs to the parents and then to return the consent forms. Sending information packs directly to the parents and asking them to return consent forms directly to the researcher might have been helpful in improving the response rate. Again, however, this would have increased the cost of the study considerably.

4.4.2.3 Researcher bias. The researcher was not blind to the participants' experimental condition, inviting the possibility of some systematic bias (Goodwin, 2010). Ideally, the experimental task would be administered by an independent person, but this was not possible in the context. Nevertheless, instructions for the task were pre-recorded and played to all participants, and 30% of the videos were rated by another researcher blind to the experimental conditions. The inter-rater reliability was very high and this is perhaps because the behavioural measures which were coded were relatively 'objective'. Thus, opportunities to introduce inadvertent bias were low.

4.4.2.4 Behavioural measures. In this study, glancing was used as a behavioural measure of maternal reassurance giving. It is possible that mothers glanced at their children because they were interested in what their children were doing rather than because they wanted to provide them with reassurance. It would have, therefore, been interesting to see if the results of this study were still at the significant level if glancing was removed from the analyses.

4.4.3 Summary: Methodological Strengths and Weaknesses

The strengths of this study relate to the experimental design and the child-friendly and novel nature of the experimental manipulation. A number of weaknesses have been identified however, particularly regarding recruitment rate, outcome measures, researcher bias, and use of glancing as a behavioural measure, and these may need to be taken into consideration when conclusions are inferred from this study.

The next section discusses the research findings in terms of implications for theory, practice and future research.

4.5 Implications of the Study

4.5.1 Theoretical Implications

The results of the present study suggest that maternal beliefs are causally related to maternal reassurance and that maternal reassurance is causally related to reassurance-seeking and hesitations in children aged 9-11 years old. There was no causal relationship between maternal beliefs/behaviours and children's checking behaviour.

Evidence from observational studies suggests that family accommodation of OCD symptoms is associated with increases in those symptoms (Peris et al., 2008; Storch et al., 2007; Waters & Barrett, 2000). The current study demonstrated a possible causal relationship between one dimension of family accommodation (reassurance giving) and neutralising behaviours (reassurance seeking and hesitations), thus providing evidence in support of a possible causal pathway between the family and OCD in children. Reassurance giving can lead to short-term reduction in anxiety and neutralising behaviours, but this reduction is likely to be short-lived and, consequently, a vicious cycle of neutralising behaviours is activated and maintained by negative reinforcement. This may result in a situation where a child demands increasing levels of involvement and accommodation, potentially inviting over-controlling and/or rejecting behaviour from family members. This may in turn lead to greater distress and anxiety, and a further need to engage in neutralising behaviours in order to reduce distress. If this link could be demonstrated further, then it would be important to incorporate external factors such as others' reassurance-giving behaviour into cognitive-behavioural models used to conceptualise childhood OCD (e.g. Salkovskis', 1985; Inflated Responsibility Model), as they would then be likely to influence the individual's compulsive behaviour.

The results of the present study are also interesting in terms of the relationship between parental mental health and child OCD symptoms, and the mechanisms (i.e. negative reinforcement) by which parental mental health may influence the development and/or maintenance of those symptoms. Findings of the observational study by Peris et al. (2008) suggest that parents with clinically significant OCD symptoms are more likely to accommodate their children's OCD symptoms. This is an interesting finding, and if considered in the context of Salkovskis's (1985) inflated responsibility model, it could be hypothesised that parental accommodation of child's OCD behaviours is driven by their own levels of inflated responsibility for preventing harm happening to others. In addition, consistent with Hudson and Rapee's (2004) model of child-generalised anxiety disorder, Lester, Field, Oliver, and Cartwright-Hatton (2009) found that anxious parents were more likely to interpret ambiguous situations as threatening to themselves and to their children. Therefore, in the light of the results of the above studies and the findings of the present study, it is reasonable to hypothesise that parents' threat-oriented beliefs and parental levels of responsibility may influence the way they interact with their children, leading to, for example, greater control and unsolicited reassurance giving. According to Salkovskis and Warwick (1986), provision of unsolicited reassurance may become anxiety-provoking, as it creates doubt and uncertainty. Anxious parents may provide unsolicited reassurance to their children in order to reduce their own anxiety, but by doing so they may be inadvertently increasing their child's anxiety levels and creating the need for neutralising behaviours. Frequent exposure to such reassurance may trigger anxiety disorder in an already vulnerable child.

4.5.2 Clinical Implications

The study offers preliminary evidence in support of a link between maternal beliefs, maternal reassurance giving and specific child behaviours such as reassurance seeking,

which is characteristic of OCD. The results suggest that maternal beliefs and reassurance giving may be important aetiological and maintaining factors in the context of childhood OCD. Therefore, the findings confirm that during clinical assessment it is important to gain a comprehensive understanding of any family accommodation of a child's OCD behaviours, focusing specifically on issues of reassurance giving and seeking.

These OCD-specific behaviours, and family accommodation of those behaviours, would also need to be incorporated into the formulation and treatment of childhood OCD. It would be important to provide parents/carers with psycho-education regarding the maintaining role of reassurance giving and other neutralising behaviours. Warwick and Salkovskis (1985) suggest that not all reassurance is the same and that some forms of reassurance can be more helpful than others. They posit that 'provision of relevant information which the patient does not already know or understand' (Salkovskis & Warwick, 1986, p. 601) may be helpful. Reassurance, however, becomes anxiety-provoking when it is given spontaneously before the individual expresses any concerns, and when it consists of 'repeated provision of redundant or irrelevant information' (Salkovskis & Warwick, 1986, p. 601). Therefore, treatment may need to focus on helping parents to distinguish between adaptive and maladaptive forms of reassurance and on skills training, in order to help parents develop constructive ways of responding to their child's requests for reassurance.

Peris et al. (2008) suggest that parents with clinically significant OCD are more likely to predict negative consequences of withholding accommodation, which may make it difficult to address this issue in treatment (Stobie, 2009). Therefore, parents' emotional responses to refraining from accommodation may need to be incorporated into, and explored in, treatment. Parents would need to be given tools for managing their own emotional reactions. If parents accommodate their child's OCD behaviours in order, for

example, to reduce their own anxiety, then they may benefit from using distraction or cognitive restructuring as a way of reducing their own anxiety. In addition, it may be important in treatment to focus on the function of reassurance giving for the whole family as a system, and for individual members of the family. If reassurance is given to reduce parental anxiety, then this should be incorporated into formulation, and addressed accordingly in treatment plans. In contrast, a different approach will be needed if the function of reassurance is to soothe the child and help them manage their anxiety.

The study highlighted the importance of considering contextual and systemic factors that may contribute to OCD behaviours in children, and the importance of involving family members in treatment. Reassurance giving goes against the principles of exposure-based treatments, so educating parents about how to respond to a child's reassurance-seeking behaviour, the effects of reassurance giving on child's OCD symptoms, and how to manage their own emotional responses to their child's OCD behaviours may have a positive impact on treatment outcome.

4.5.3 Recommendations for Future Research

4.5.3.1 Methodological improvements. As already discussed, future research could include a more subtle measure of maternal anxiety, and explore the link between maternal anxiety and reassurance-giving behaviour.

The experimental task could be carried out in a neutral setting e.g. at university. This would help to ensure that all participants complete the task in the same standardised environment where possible confounding variables such as lighting and noise level are controlled for. This, however, might compromise the ecological validity of the experimental task.

Bearing in mind the mechanisms by which negative reinforcement operates, the experimental manipulation could be improved by examining the impact of reassurance

giving on anxiety and reassurance-seeking behaviour over a longer timeframe, to better capture the perpetuating cycle of neutralising behaviours such as checking and reassurance seeking. In order to test the hypothesis that neutralising behaviours (i.e. reassurance seeking), and accommodation of OCD symptoms (i.e. reassurance giving) reduce anxiety in the short-term, but lead to increased anxiety and greater need for neutralising behaviours in the long-term (negative reinforcement), children could be asked to complete a neutral task after the sweet-sorting task. If reassurance seeking and reassurance giving do provide negative reinforcement, which in the longer-term maintains anxiety and increases the need for neutralising behaviour, then it can be hypothesised that children's anxiety ratings will be higher on completion of the neutral task. It can also be hypothesised that they will want to seek more reassurance and engage in more checking behaviour.

Rachman (2002) conceptualised reassurance-seeking as 'checking by proxy', and hypothesised that people engage in these behaviours in order to 'reduce the probability of the nasty event occurring or to reduce the effects of such an event' (p.629). The experimental manipulation used in this study had no impact on children's checking behaviour, and it was hypothesised that reassurance received from mothers replaced the need for checking. To test this hypothesis, children could be requested to stay in the room following the completion of the neutral task, while their mother completes questionnaires with the experimenter in a different room. We could videotape children's behaviour in the absence of the mother and the experimenter, and measure the number of checks. Consistently with Rachman's model of compulsive checking, an increase in the number of checks should follow.

In addition, the presence of the experimenter and mother while children completed the experimental task might have led participants to feel less responsible for potential negative consequences of the task, owing to responsibility displacement or sharing

(Rachman, 1976; Shafran, 1997), and might have provided additional reassurance. Therefore, future research may want to address this issue in order to increase the power of the experimental manipulation. This could be done, for instance, by removing the experimenter from the room while the children are sorting the sweets, or by asking children to sign responsibility contracts.

4.5.3.2 Theoretical questions. Parrish and Radomsky (2006) proposed that persistent requests for reassurance may lead to dismissive and/or increasingly ambiguous feedback from others, owing to frustration over repeated requests for reassurance. They further hypothesised that if the feedback received from others is perceived as ambiguous, uncertain or insincere, this may increase the individual's anxiety and subsequently their urge to seek reassurance. This hypothesis is supported indirectly by evidence from research that suggests that intolerance of uncertainty (IU) is one of the key factors in the aetiology and maintenance of OCD (Holaway, Heimberg, & Coles, 2006; Tolin, Abramowitz, Brigidi, & Foa, 2003). IU has also been shown to increase information seeking in response to ambiguity (Ladoucer, Talbot, & Dugas, 1997). Therefore, it would be interesting to manipulate the ambiguity of maternal reassurance to examine the effects of ambiguity on reassurance seeking, checking, and anxiety.

Yorulmaz et al. (2008) examined the application of the inflated responsibility model to various subtypes of the disorder in the context of childhood OCD. The results of their study demonstrated a significant association between rumination and responsibility for causing harm to others, and responsibility for preventing harm to others in a non-clinical sample. As an extension of this work, future investigations could explore whether reassurance-seeking and reassurance-giving behaviours depend on the most salient dimension of responsibility for a particular individual.

Reynolds et al. (in prep) demonstrated good internal consistency of the CRAS (Salkovskis et al., 2000) for use with children aged 9–12 years. They raised some questions, however, about the accessibility of the wording of some of the questions for children and young people, thus highlighting the need to continue working on developing developmentally appropriate tools for assessing the importance of responsibility appraisals for individual children.

Future research could also focus on identifying the risk factors for OCD in order to identify 'at risk' cases. This would enable clinicians to develop preventative approaches, which could, for example, provide psycho-education about the normality of intrusions and appropriate ways of challenging their importance, if needed (e.g. behavioural experiments; Salkovskis, Waite, & Williams, 2009), as well as the role of reassurance-giving and reassurance-seeking behaviour in the maintenance of OCD symptoms.

4.6 Overall Summary and Conclusions

OCD in childhood may result in disruptions across many areas of children's lives (Piacentini et al., 2003). Attention has been drawn recently to the role of cognitive processes and the family environment in the development and maintenance of childhood OCD. There is a growing body of research investigating the applicability of adult cognitive models, such as inflated responsibility, thought-action fusion, and meta-cognitive models to childhood OCD (Barrett & Healy, 2003; Mather & Cartwright-Hatton, 2004). Research to date has mainly focused on the inflated responsibility model (e.g. Barrett & Healy-Farrell, 2003; Libby et al., 2004; Matthews et al., 2006; Reeves et al., in 2010), and most research supports the view that inflated responsibility beliefs play an important role in childhood OCD. There is also a growing body of literature to suggest that accommodation of OCD symptoms, such as reassurance giving, may result in greater symptom severity

(Peris et al., 2008; Waters & Barrett, 2000). However, little experimental investigation has addressed this issue (Parrish & Radomsky, 2006).

The present study aimed to extend previous experimental findings by experimentally manipulating mothers' beliefs about their child's levels of perceived responsibility in the context of a mother-child dyad. We hypothesised that mothers who believed their child to have high responsibility would provide more reassurance to their child and that their children would exhibit higher rates of OCD-related behaviours, including reassurance seeking, and higher anxiety. The results provide strong but preliminary support for the causal link between mothers' perception of their child's responsibility and maternal reassurance giving, and between maternal reassurance giving and the child's reassurance seeking and hesitations.

As the first study of its kind, the present findings must be interpreted cautiously and require replication. There are some methodological issues which can be addressed and which have been discussed above. Nonetheless, the results suggest that maternal beliefs and behaviours may play a causal role in the development of OCD in children. Although it is not the focus of this research, it is feasible, and consistent with theory, that maternal beliefs and behaviours also contribute to the maintenance of OCD in children. Thus the data provides indirect support for family involvement in therapy for childhood OCD, and highlights the importance of identifying and incorporating familial and contextual factors in assessment, formulation, and treatment of young people.

The present study has demonstrated a possible link between reassurance giving and reassurance seeking. Therefore, effective strategies to target reassurance-giving behaviour may be beneficial for children with OCD. Further experimental research on reassurance-giving and reassurance-seeking behaviours in OCD, taking into account both child and maternal anxiety levels and disorder subtypes, would enhance our understanding of OCD

behaviours in children, and subsequently help to develop more effective interventions for

OCD in childhood.

References

Abela, J. S., Zuroff, D. C., Ho, M. R., Adams, P., & Hankin, B. L. (2006). Excessive reassurance seeking, hassles, and depressive symptoms in children of affectively ill parents: A multiwave longitudinal study. *Journal of Abnormal Child Psychology, 34,* 171-187.

Abramowitz, J.S., Whiteside, S., Lynam, D., & Kalsy, S. (2003). Is thought-action fusion specific to obsessive-compulsive disorder? A mediating role of negative affect. *Behaviour Research and Therapy, 41,* 1069-1079.

Abramowitz, J.S., Whiteside, S., & Deacon, B.J. (2005). The effectiveness of treatment for paediatric obsessive-compulsive disorder. A meta-analysis. *Behaviour Therapy, 36,* 55-63.

Albano, A.M., Knox, L.S., & Barlow, D.H. (1995). Obsessive-compulsive disorder. In A. Eisen, C. Kearney & C. Schafer (Eds.), *Clinical handbook of anxiety disorders in children and adolescents* (pp.282-316). Northvale, NJ: Jason Aronson.

Alonso, P., Menchon, J.M., Mataix-Cols, D., Pifarre, J., Urretavizcaya, M., Crespo, et al. (2004). Perceived parental rearing styles in obsessive-compulsive disorder: relation to symptom dimensions. *Psychiatry Research, 127,*267-278.

Allsopp, M., & Verduyn, C. (1988). A follow-up of adolescents with obsessive compulsive disorder. *British Journal of Psychiatry, 154,* 829-834.

Allsopp, M., & Verduyn, C. (1990). Adolescents with obsessive-compulsive disorder: A case note review of consecutive patients referred to a provincial regional adolescent psychiatry unit. *Journal of Adolescence, 13,* 157-169.

Allsopp, M., & Williams, T. (1996). Intrusive thoughts in a non-clinical adolescent population. *European Child & Adolescent Psychiatry, 5,*25-32.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.) (*DSM-IV-TR*). Washington, DC: Author.

Amir, N., Freshman, M., & Foa, E.B. (2000). Family distress and involvement in relatives of obsessive-compulsive disorder patients. *Journal of Anxiety Disorders, 14,* 209–217.

Andres, S., Lazaro, L., Salamero, M., Boget, T., Penades, R., & Castro-Fornieles, J. (2008). Changes in cognitive dysfunction in children and adolescents with obsessive-compulsive disorder after treatment. *Journal of Psychiatric Research, 42,* 507-514.

Arntz, A., Voncken, M., & Goosen, A.C.A. (2007). Responsibility and obsessive-compulsive disorder: An experimental test. *Behaviour Research and Therapy, 45,* 425-435.

Baron-Cohen, S., & Wheelwright, S. (1999). 'Obsessions' in children with autism or Asperger Syndrome: a content analysis in terms of core domains of cognition. *British Journal of Psychiatry, 175,* 484-490.

Barrett, P.M., & Healy, L.J. (2003). An examination of the cognitive processes involved in childhood obsessive-compulsive disorder. *Behaviour Research and Therapy, 41,* 285-299.

Barrett, P.M., & Healy-Farrell, L. (2003). Perceived responsibility in juvenile obsessive-compulsive disorder: An experimental manipulation. *Journal of Clinical Child and Adolescent Psychology, 32,* 430-441.

Barrett, P.M., Rapee, R.M., Dadds, M.M., & Ryan, S.M. (1996). Family enhancement of cognitive style in anxious an aggressive children. *Journal of Abnormal Child Psychology, 24,* 187-203.

Barrett, P.M., Shortt, A., & Healy, L. (2002). Do parent and children behaviours differentiate families whose children have obsessive-compulsive disorder from other clinic and non-clinic families? *Journal of Child Psychology and Psychiatry, 43,* 597-607.

Bartz, J., & Hollander, E. (2006). Is obsessive-compulsive disorder an anxiety disorder? *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 30,* 338-352.

Beck, A.T., & Emery, G., & Greenberger, R. C. (1985). *Anxiety disorders and phobias: A cognitive perspective.* New York: Basic Books.

Beck, A.T., & Steer, R.A. (1993). *Beck Anxiety Inventory Manual.* San Antonio, TX: Psychological Corporation.

Beer, D., Karitani, M., Leonard, H., March, J., & Swedo, S. (2002). Obsessive-compulsive disorder: In S. Kutcher (Ed.), *Practical Child and adolescent Psychoparmacology* (pp.159-186). Cambridge: Cambridge University Press.

Berg, C.Z., Whitaker, A., Davies, M., Flament, M.F., & Rapoport, J.L. (1988). The survey form of the Leyton Obsessional Inventory-Child Version; Norms from an epidemiological study. *Journal of the American Academy of Child and Adolescent Psychiatry, 27,* 759-763.

Bolton, D., Dearsley, P., Madronal-Luque, R., & Baron-Cohen, S. (2002). Magical thinking in childhood and adolescence: *Development and relation to obsessive compulsion. British Journal of Developmental Psychology, 20*, 479-494.

Bolton, D., Luckie, M., & Steinberg, D. (1995). Long-term course of obsessive-compulsive disorder treated in adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry, 34,* 1441-1450.

Bolton, D., & Perrin, S. (2008). Evaluation of exposure response-prevention for obsessive compulsive disorder in childhood and adolescence. *Journal of Behaviour Therapy and Experimental Psychiatry, 39,* 11-22.

Bögels, S., & Phares, V. (2008). Father's role in the etiology, prevention and treatment of child anxiety: A review and new model. *Clinical Psychology Review, 28,* 539-558.

British Psychological Society (2006). *Ethical principles for conducting research with human participants: Introduction to the revised principles.* Leicester: BPS.

Bryman, A., & Cramer, D. (2001). *Qualitative data analysis with SPSS release 10 for windows: A guide for social scientists.* Hove: Routledge.

Calvocoressi, L., Lewis, B., Harris, M., Trufan, S. J., Goodman,W. K., McDougle, C. J., et al. (1995). Family accommodation in obsessive compulsive disorder. *American Journal of Psychiatry, 152,* 441–443.

Calvocoressi, L., Mazure, C., Kasl, S. V., Skolnick, J., Fisk, D., Vegso, S. J., et al. (1999). Family accommodation of obsessive–compulsive symptoms: Instrument development and assessment of family behaviour. *Journal of Nervous & Mental Disease, 187,* 636–642.

Carter, A.S., & Pollock, R.A. (2000). Obsessive compulsive disorder in childhood. *Current Opinion in Pediatrics, 12,* 325-330.

Cartwright-Hatton, S., & Wells, A. (1997). Beliefs about worry and intrusions: the meta-cognitions questionnaire and its correlates. *Journal of Anxiety Disorders*, *11*, 279–296.

Cartwright-Hatton, S., Mather, A., Illingworth, V., Brocki. J., Harrington, R., & Wells, A. (2004). Development and preliminary validation of the meta-cognitions questionnaire-adolescent version. *Journal of Anxiety Disorders, 18,* 411-422.

Cameron, C.L. (2007). Obsessive-compulsive disorder in children and adolescents. *Journal of Psychiatric and Mental Health Nursing, 14,* 696-704.

Carr, A. (2006). *The Handbook of Child and Adolescent Clinical Psychology. A Contextual Approach.*(2nd ed.). London: Routledge.

Chabane, N., Delorme, R., Millet, B., Mouren, M.C., Leboyer, M., & Pauls, D. (2005). Early-onset obsessive-compulsive disorder: A subgroup with a specific clinical and familial pattern? *Journal of Child Psychology and Psychiatry, 46,* 881-887.

Chorpita, B.F., Albano, A.M., & Barlow, D.H. (1996). Cognitive processing in children: Relationship to anxiety and family influences. *Journal of Clinical Child Psychology, 25,* 170-176.

Chowdhury, U., Frampton, I., & Heyman, I. (2004). Clinical characteristics of young people referred to an obsessive compulsive disorder clinic in the United Kingdom. *Clinical Child Psychology and Psychiatry, 9,* 395-410.

Clark, D.A. (2004). *Cognitive-behavioural therapy for OCD.* New York: The Guilford Press.

Cobhan, V.E., Dadds, M.R., & Spence, S.H. (1999). The role of parental anxiety in the treatment of childhood anxiety. *Journal of Consulting and Clinical Psychology, 66,* 893-905.

Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science, 1,* 98-101.

Comer, J.S., Kendall, P.C., Franklin, M.E., Hudson, J.L., & Pimentel, S.S. (2004). Obsessing/worrying about the overlap between obsessive-compulsive disorder and generalized anxiety disorder in youth. *Clinical Psychology Review, 24*, 663-683.

Cooper, M. (1996). Obsessive-compulsive disorder: Effects on family members. *American Journal of Orthopsychiatry, 66,* 296-304.

Creswell, C., Schniering, C.A., & Rapee, R.M. (2005). Threat interpretation in anxious children and their mothers: comparison with nonclinical children and the effects of treatment. *Behaviour Research and Therapy, 43,* 1375-81.

Dads, M.R., Barrett, P.M., Rapee, R.M., & Ryan, S. (1996). Family process and child anxiety and aggression: An observational analysis. *Journal of Abnormal Child Psychology, 24,* 715-734.

Data Protection Act (1998). Retrieved 4 February 2009, from www.opsi.gov.uk/ACTS/acts1998/ukpga_1998029_en_1

Do Rosario-Campos, M.C., Leckman, J.F., Curi, M., Quatrano, S., Katsovitch, L., Miguel, E.C., et al. (2005). A family study of early-onset obsessive-compulsive disorder. *American Journal of Medical Genetics (Part B:Neuropsychiatric Genetics), 136B,* 92-97.

Douglass, H. M., Moffitt, T. E., Dar, R., McGhee, R & Silva, P. (1995). Obsessive-compulsive disorder in a birth cohort of 18-year olds: Prevalence and predictors. *Journal of the American Academy of Child & Adolescent Psychiatry, 34,* 1424-1431.

Evans, D.W., Milanak, M.E., Medeiros, B., & Ross, J.L. (2002). Magical beliefs and rituals in young children. *Child Psychiatry and Human Development, 33,* 43-58.

Farrell, L., & Barrett, P. (2006). Obsessive-compulsive disorder across the developmental trajectory: Cognitive processing of threat in children, adolescents and adults. *British Journal of Psychology, 97,* 95-114.

Faul, F., Erdfelder, E., Lang, A.G., & Buchner, A. (2007). G*POWER 3: A flexible statistical power analysis program, for the social, behavioural, and biomedical sciences. [Computer Software]. Retrieved 5 March 2009 from http://www.psycho.uni.dusseldorf.de/abteilungen/aap/gpower3.

Field A.P. (2000). *Discovering statistics using SPSS for Windows: advanced techniques for the beginner.* London: Sage.

Finch, A. J., Kendall, P. C., Montgomery, L., & Morris, T. (1975). Effects of two types of failure on anxiety. *Journal of Abnormal Psychology, 84,* 583-586.

Fisher, P.L., & Wells, A. (2005). Experimental modification of beliefs in obsessive-compulsive disorder: A test of the meta-cognitive model. *Behaviour research and Therapy, 43,* 821-829.

Fisher, P.L., & Wells, A. (2008). Meta-cognitive therapy for obsessive-compulsive disorder: A case series. *Journal of Behavior Therapy and Experimental Psychiatry, 39,* 117-132.

Flament, M.F., Whitaker, A., Rappoport, J.L., Davies, M., Berg, C.Z., Kalikow, K., et al. (1988). Obsessive compulsive disorder in adolescents: An epidemiological study. *Journal of the American Academy of Child and Adolescent Psychiatry, 27,* 764-771.

Fontenelle, L.F., Mendlowicz, M. V., & Versiani, M. (2005). Impulse control disorders in patients with obsessive–compulsive disorder. *Psychiatry and Clinical Neurosciences, 59*, 30-37(8).

Franklin, M.E., Kozak, M.J., Cashman, L., Cloes, M., Rheingold, A., & Foa, E.B. (1998). Cognitive-behavioural treatment of paediatric obsessive-compulsive disorder: An open clinical trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 37,* 412-419.

Fredman, S.J., Chambless, D.L., & Stekettee, G. (2004). Development and validation of an observational coding system for emotional over-involvement. *Journal of Family Psychology, 18,* 339-347.

Freeman, J. B., Garcia., A. M., Fucci, C., Karitani, M. K., Miller, L., & Leonard, H L. (2003). Family-based treatment of early-onset obsessive-compulsive disorder. *Journal of Child and Adolescent Psychopharmacology, 13,* 71-80.

Freeston, M.H. (2001). Cognitive-behavioural treatment of a 14-year-old teenager with obsessive-compulsive disorder. *Behavioural and Cognitive Psychotherapy, 29,* 71-84.

Freeston, M.H., Ladouceur, R., Gagnon, F., Thibedeau, N., Rhéaume, J.,Letarte, H. Et al. (1997). Cognitve-behavioural treatment of obsessive thoughts: A controlled study. *Journal of Consulting and Clinical Psychology, 65,* 405-413.

Freeston, M.H., Ladouceur, R., Gagnon, F., & Thibedeau, N. (1993). Beliefs about obsessional thoughts. *Journal of Psychopathology and Behavioral Assessment, 15,*1-21.

Geller, D., Biederman, J., Jones, J., Park, K., Schwartz, S., Shapiro, S., et al. (1998). Is juvenaile obsessive compulsive disorder a developmental subtype of the disorder? A review of the pediatric literature. *Journal of the American Academy of Child and Adolescent Psychiatry, 37,* 420-427.

Gifford, S., Reynolds, S., Bell, S., & Wilson, C. (2008). Threat interpretation bias in anxious children and their mothers. *Cognition and Emotion, 22,* 497-508.

Gonzalez, J.C., Routh, D.K., & Armstrong, F.D. (1993). Effects of maternal distraction versus reassurance on children's reactions to injections. *Journal of Pediatric Psychology*, 18, 593-604.

Goodman, W.K., Price, L.H., Rasmussen, S.A., Mazure, C., Fleischman, R.L., Hill, C.L., et al. (1989). The Yale-Brown Obsessive Compulsive Scale: Development, use, and reliability. *Archives of General psychiatry, 46,* 1006-1011.

Goodwin, C. J. (2010). *Research in psychology. Methods and design* (6th Ed.). USA: Wiley.

Hadjistavropoulos, T., Craig, K. D., & Hadjistavropoulos, T. (1998). Cognitive and behavioural responses to illness information: the role of health anxiety. *Behavior Research and Therapy, 36,* 149-164.

Hadwin, J., Frost, S., French, C.C., & Richards, A. (1997). Cognitive processing and trait anxiety in typically developing children: Evidence for interpretation bias. *Journal of Abnormal Psychology, 106,* 486-490.

Hanna, G.L. (1995). Demographic and clinical features of obsessive-compulsive disorder in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 34,* 19-27.

Hanna, G.L., Himle, J.A., Curtis, G.C., & Gillespie, B.W. (2005). A family study of obsessive-compulsive disorder with pediatric probands. *American Journal of medical Genetics (Part B:Neuropsychiatric Genetics), 134B,* 13-19.

Hettema, J.M., Neale, M.C., & Kendler, K.S. (2001). A review and meat-analysis of the genetic epidemiology of anxiety disorders. *American Journal of Psychiatry, 158,* 1568-1578.

Heyman, I., Fombonne, E., Simmons, H., Ford, T., Meltzer, H., & Goodman, R. (2001). Prevalence of obsessive-compulsive disorder in the British nationwide survey of child mental helath. *British Journal of Psychiatry, 179,* 324-329.

Holaway, R.M., Heimberg, R.G., & Coles, M.E. (2006). A comparison of intolerance of uncertainty in analogue obsessive-compulsive disorder and generalised anxiety disorder. *Journal of Anxiety Disorders, 20,* 158-174.

Hollingsworth, C.E., Tanguay, P.E., Grossman, L., & Pabst, P. (1980). Long-term outcome of obsessive-compulsive disorder in childhood. *Journal of the American Academy of Child and Adolescent psychiatry, 19,* 134-144.

Honjo, S., Hirano, C., Murase, S., Kaneko, T., Sugiyama, T., Ohtaka, K., et al. (1989). Obsessive-compulsive symptoms in childhood and adolescence. *Acta Psychiatrica Scandinavia, 80,* 83-91.

Hudson, J.L & Rapee, R.M. (2004). From anxious temperament to disorder. An etiological model of generalised anxiety disorder. In R.G. Heimberg, C.L.Turk, & D.S. Mennin (Eds.), *Generalised anxiety disorder: Advances in research and practice* (pp 51-74). New York: Guilford Press.

Ivarsson, T., & Valderhaugh, R. (2006). Symptom patterns in children and adolescents with obsessive-compulsive disorder (OCD). *Behaviour Research and Therapy, 44,* 1105-1116.

Ivarsson, T., & Melin, K. (2008). Autism spectrum traits in children and adolescents with obsessive-compulsive disorder (OCD). *Journal of Anxiety Disorders, 22,* 969-978.

Joiner, T. E., & Schmidt, N. B. (1998). Excessive reassurance seeking predicts depressive but not anxious reactions to acute stress. *Journal of Abnormal Psychology, 107,* 533-537.

Kendall, P. C., & Chansky, T. E. (1991). Considering cognitions in anxiety disordered children. *Journal of Anxiety Disorders, 5,* 167-185.

Kendall, P. C., & Ronan, K. R. (1990). Assessment of children's anxieties, fears, and phobias: Cognitive-behavioral models and methods. In C. R. Reynolds & R. W. Kamphaus (Eds.), *Handbook of psychological and educational assessment of children* (pp. 223–244). New York: Guilford.

Kortlander, E., Kendall, P.C., & Panichelli-Mindel, S.M. (1997). Maternal expectations and attributions about coping in anxious children. *Journal of Anxiety Disorders, 11,* 297-315.

Kovacs, M. (1985). The Children's Depression Inventory. *Psychopharmacology Bulletin, 21,* 995-998.

Ladouceur, R., Rheaume, J., Freestan, M.H., Aublet, F., Jean, K., Lachance, S., et al. (1995). Experimental manipulations of responsibility: an analogue test for models of obsessive-compulsive disorder. *Behaviour Research and Therapy, 33,* 937-946.

Ladoucer, R., Talbot, F., & Dugas, M.J. (1997). Behavioural expressions of intolerance of uncertainty in worry. *Behaviour Modification, 21,* 355-371.

Landis, J.R., & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33,* 159-174.

Langner, J., Laws, M., Röper, G., Zaudig, M., Hauke , W., & Piesbergen, C. (2009). Predicting therapy outcome in patients with early and late obsessive-compulsive disorder (EOCD and LOCD). *Behavioural and Cognitive Psychotherapy, 37,* 485-496.

Last, C.G., Perrin, S., Hersen, M., & Kazdin, A.E. (1992). DSM-III anxiety disorders in children: Sociodemographic and clinical characteristics. *Journal of the American Child and Adolescent Psychiatry, 31,* 1070-1076.

Lazaro, L., Caldu, X., Junque, C., Bargallo, N., Andres, S., Morer, A., et al. (2008). Cerebral activation in children and adolescents with obsessive–compulsive disorder before and after treatment: A functional MRI study. *Journal of Psychiatric Research, 42,* 1051-1059.

Lester, K.J., Field, A.P., Oliver, S., & Cartwright-Hatton, S. (2009). Do anxious parents interpretive biases towards threat extend into their child's environment? *Behaviour Research and Therapy, 47,* 170-174.

Libby, S., Reynolds, S., Derisley, J., & Clark, S. (2004). Cognitive appraisals in young people with obsessive-compulsive disorder. *Journal of Child Psychology and Psychiatry, 45,* 1076-1084.

Lopatka, C., & Rachman, S. (1995). Perceived responsibility and compulsive checking: An experimental analysis. *Behaviour Research and Therapy, 33,* 673-684.

Magnusdottir, I., & Smari, J. (2004). Are responsibility attitudes related to obsessive-compulsive symptoms in schoolchildren? *Cognitive Behaviour Therapy, 33,* 21-26.

Mancebo, M. C., Garcia, A.M., Pinto, A., Freeman, J.B**.**, Przeworski, A., Stout, R., et al. (2008). Juvenile-onset OCD: Clinical features in children, adolescents and adults. *Acta Psychiatrica Scandinavia, 118,* 149–159.

Manimala, M.R., Blount, R.L., & Cohen, L.L. (2000). The effects of parental reassurance versus distraction on child distress and coping during immunizations. *Children's Health Care, 29*, 161-177.

March, J.S., Franklin, M., Nelson, A., & Foa, E. (2001). Cognitive-behavioural psychotherapy for pediatric obsessive-compulsive disorder. *Journal of Clinical Child Psychology, 30,* 8-18.

Mather, A., & Cartwright-Hatton, S. (2004). Cognitive predictors of obsessive-compulsive symptoms in adolescence: A preliminary investigation. *Journal of Clinical Child and Adolescent Psychology, 33,* 743-749.

Matthews, L., Reynolds, S., & Derisley, J. (2007). Examining cognitive models of obsessive-compulsive disorder in adolescents. *Behavioural and Cognitive Psychotherapy, 35,* 149-163.

McLeod, B. D., Wood, J.J., & Weisz, J.R. (2007). Examining the association between parenting and childhood anxiety: A met-analysis. *Clinical Psychology Review, 27,* 155-172.

Mowrer, O.H. (1960). *Learning theory and behaviour.* New York: Wiley.

Muris, P., Meesters, C., Rassin, E., Merckelbach, H., & Campbell, J. (2001). Thought-action fusion and anxiety disorders symptoms in normal adolescents. *Behaviour Research and Therapy, 39,* 843-852.

Myers, S.G., Fisher, P.L., & Wells, A. (2009). An empirical test of a meta-cognitive model of obsessive compulsive symptoms: Fusion beliefs, beliefs about rituals, and stop signals. *Journal of Anxiety Disorders, 23,* 436-442.

National Institute for Health and Clinical Excellence. (2006). *Obsessive-compulsive disorder. Core interventions in the treatment of obsessive-compulsive disorder and body dysmorphic disorder.* London: National Institute for Health and Clinical Excellence.

Obsessive Compulsive Working Group. (1997). Cognitive assessment of obsessive-compulsive disorder. *Behaviour Research and Therapy, 35,* 667-681.

Pauls, D.L., Alsobrook, J.P., Goodman, W., Rasmussen, S., & Leckman, J.F. (1995). A family study of obsessive-compulsive disorder. *American Journal of Psychiatry, 152,* 76-84.

Parrish, C.L., & Radomsky, A.S. (2006). An experimental analysis of responsibility and reassurance: Relationships with compulsive checking. *International Journal of Behavioral Consultation and Therapy, 2,* 174-191.

Parrish, C.L., & Radomsky, A.S. (2010). Why do people seek reassurance and check repeatedly? An investigation of factors involved in compulsive behaviour in OCD and depression. *Journal of Anxiety Disorders, 24,* 211-222.

Pediatric Obsessive-Compulsive Disorder Treatment Study (POTS) Team. (2004). Cognitive-behavioral therapy, sertraline, and their combination for children and adolescents with obsessive-compulsive disorder: The Pediatric Obsessive-Compulsive Disorder Treatment Study (POTS) Randomised Controlled Trial. *Journal of the American Medical Association, 292,* 1969-1976.

Peris, T. S., Bergman, R. L., Langley, A., Chang, S., McCracken, J. T., & Piacentini, J. (2008). Correlates of accommodation of paediatric obsessive-compulsive disorder: parent, child, and family characteristics. *Journal of the American Academy of Child and Adolescent Psychiatry, 47,* 1173-1181.

Piacentini, J., Bergman, R.L., Keller, M., & McCracken, J. (2003). Functional impairment in children and adolescents with obsessive-compulsive disorder. *Journal of Child and Adolescent Psychopharmacology, 13,* S61-S69.

Piaget, J. (1962). The stages of intellectual development of the child. *Bulletin of the Menninger Clinic, 26,* 120-128. Reprinted in A. Slater & D. Muir (Eds.) (1999), *The Blackwell Reader in Developmental Psychology* (pp.35-42). Cambridge: Blackwell.

Purdon, C., & Clark, D.A. (1994). Obsessive intrusive thoughts in non-clinical subjects. *Behaviour Research and Therapy, 32,* 403-410.

Purdon, C., & Clark, D.A. (1999). Metacognition and obsessions. *Clinical Psychology and Psychotherapy, 6,* 102-110.

Rachman, S. (1971). Obsessional rumination. *Behaviour Research and Therapy, 9,* 229-235.

Rachman, S. (1976). Obsessional-compulsive checking. *Behaviour Research and Therapy, 14,* 269-277.

Rachman, S.J. (1978). *Fear and Courage.* San Francisco: W. H. Freeman.

Rachman, S.J. (1993). Obsessions, responsibility and guilt. *Behaviour Research and Therapy, 31, 149-154.*

Rachman, S.J. (1997). A cognitive theory of obsessions. *Behaviour Research and Therapy, 35,* 793-802.

Rachman, S.J. (2002). A cognitive theory of compulsive checking. *Behaviour Research and Therapy, 40,* 625-639.

Rachman, S. J. (2002). A cognitive theory of compulsive checking. *Behaviour Research and Therapy, 40, 625-639.*

Rachman, S. J. (2003). *The treatment of obsessions.* Oxford: Oxford University Press.

Rachman, S. J. (2004). *Anxiety* (2nd. Ed). Hove, UK: Psychology Press.

Rachman, S. J. & de Silva, P. (1978). Abnormal and normal obsessions. *Behaviour Research and Therapy, 16,* 233-238.

Rachman, S.J., Shaffran, R. (1998). Cognitive and behavioural features of obsessive-compulsive disorder. In R.P. Swinson, M.M. Antony, S. Rachman, & M.A. Richter (Eds.). *Obsessive-compulsive disorder: Theory, research and treatment* (pp.51-78). New York: Guilford Press.

Radomsky, A., S., Rachman, J.S., & Hammond, D. (2001). Memory bias, confidence and responsibility in compulsive checking, *Behaviour Research and Therapy 39,* 813–822.

Rapee, R. M. (2001). The development of generalised anxiety. In M. W. Vasey, & M. R. Dadds (Eds), *The developmental psychopathology of anxiety* (pp. 481–503). New York: Oxford University Press.

Rassin, E., & Muris, P. (2006). Abnormal and normal obsessions: A reconsideration. *Behaviour Research and Therapy, 45,* 1065-1070.

Rassin, E., Merkelbach, H., Muris, P., & Spann, V. (1999). Though-action fusion as a causal factor in the development of intrusions. *Behaviour Research and Therapy, 37, 231-237.*

Reeves, J. Reynolds, S., Wilson, C., & Coker, S. (2010). An experimental manipulation of responsibility in children: A test of the inflated responsibility model of obsessive-compulsive disorder. *Journal of Behaviour Therapy and Experimental Psychiatry, 41,* 228-233.

Rettew, D. C., Swedo, S. E., Leonard, H. L., Lenane, M. C., Rapoport, J. L. (1992). Obsessions and compulsions across time in 79 children and adolescents with obsessive-compulsive disorder. *Journal of the American Academy of Child and Adolescent Psychiatry, 31,* 1050-1056.

Reynolds, S., Austin, J., & Parker, P. (in prep). *An Investigation of the Relationship between Inflated Responsibility and Obsessive-Compulsive Disorder in Childhood.* Manuscript submitted for publication.

Rosenberg, D.R., & Keshavan, M.S. (1998). Toward a neurodevelopmental model of obsessive-compulsive disorder. *Biological Psychiatry, 43,* 623-640.

Rush, J., Pincus, H. A., First, M. B., Blacker, D., Endicott, J., Keith, S. J., et al. (2005). *Handbook of Psychiatric Measures.* Washington, DC: American Psychiatric Association (pp. 7-14 & 336-339).

Salkovskis, P. M. (1985). Obsessional-compulsive problems: A cognitive behavioural analysis. *Behaviour Research and Therapy, 23, 571-583.*

Salkovskis, P. M. (1989a). Cognitive-behavioural factors and the persistence of intrusive thoughts in obsessional problems. *Behaviour Research and Therapy, 27, 677-682.*

Salkovskis, P.M. (1989b). Obsessions and compulsions. In J. Scott, J.M.G. Williams & A.T. Beck (Eds.), *Cognitive Therapy: A Clinical Casebook* (pp.50-77). London: Croom Helm.

Salkovskis, P. M. (1998). Psychological approaches to the understanding of obsessional problems. In R.P. Swinson, M.M. Anthony, S. Rachman, & M.A. Richter (Eds.), *Obsessive-compulsive disorder: Theory, research and treatment* (pp. 35-50). New York: Guilford Press.

Salkovskis, P. M. (1999). Understanding and treating obsessive-compulsive disorder. *Behaviour Research and Therapy, 37, 529-552.*

Salkovskis, P. M., & Warwick, H. M. C. (1986). Morbid preoccupations, health anxiety and reassurance: a cognitive behavioural approach to hypochondriasis. *Behaviour Research and Therapy, 24,* 597-602.

Salkovskis, P., Richards, H., & Forrester, E. (1995). The relationship between obsessional problems and intrusive thoughts. *Behavioural and Cognitive Psychotherapy, 23,* 281-299.

Salkovskis, P., Waite, P., & Williams, T. (2009). Issues and future directions in childhood OCD. In P.W. Waite & T. Williams (Eds.), *Obsessive Compulsive Disorder: Cognitive Behaviour Therapy with Children and Young People* (pp. 136-150). London: Routledge.

Salkovskis, P., Shafran, R., Rachman, S., & Freeston, M.H. (1999). Multiple pathways to inflated responsibility beliefs in obsessional problems: Possible origins and implications for therapy and research. *Behaviour Research and Therapy, 37,* 1055-1072.

Salkovskis, P., Wroe, A.L., Gledhill, N., Morrison, E., Forrester, C., Reynolds, M., et al. (2000). Responsibility attitudes and interpretations are characteristic of obsessive compulsive disorder. *Behaviour Research and Therapy, 38,* 347-372.

Samuels, J.F. (2009). Recent advances in the genetics of obsessive-compulsive disorder. *Current Psychiatry Reports, 11,* 277-282.

Sanavio, E. (1988). Obsessions and compulsions: The Padua Inventory. *Behaviour Research and Therapy, 26,* 169-177.

Savage, C.R., & Rauch, S.L. (2000). Cognitive deficits in obsessive-compulsive disorder. *American Journal of Psychiatry, 157,* 1182.

Scahill, L., Riddle, M.A., McSwiggan-Hardin, M.T., Ort, S.I., King, R.A., Goodman, W.K., et al. (1997). The Children's Yale-Brown Obsessive-Compulsive Scale: Preliminary report of reliability and validity. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 844-853.

Shafran, R. (1997). The manipulation of responsibility in obsessive-compulsive disorder. *British Journal of Clinical Psychology, 36,* 397-407.

Shafran, R. (2001). Obsessive-compulsive disorder in children and adolescents. *Clinical Psychology & Psychiatry Review, 6,* 50-58.

Shafran, R., Thordarson, D.S., & Rachman, S. (1996). Thought-action fusion in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 10,* 379-391.

Shortt, A. L., Barrett, P. M., Dadds, M. R., & Fox, T. L. (2001). The influence of family and experimental context on cognition in anxious children. *Journal of Abnormal Child Psychology, 29,* 585-596.

Sinha, S. S., Mohlam, J., & Gorman, J.M. (2004). Neurobiology. In R.G. Heimberg, C.L. Turk, & D.S. Mennin (Eds.), *Generalised Anxiety Disorder. Advances in Research and Practice* (pp.187-216). London: The Guilford Press.

Smucker, M. R., Craighead, W. E., Craighead, L.W., & Green, B. J. (1986). Normative and reliability data for the Children's Depression Inventory. *Journal of Abnormal Child Psychology, 14,* 25-39.

Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy, 36,* 545-566.

Spielberger, C. D., Edwards, C. D., Lushene, R. E., Montuori, J., & Platzek, D. (1973). *The State Trait Anxiety Inventory for Children: Preliminary manual.* Palo Alto, CA: Consulting Psychiatric Press.

Stark, K.D., Humphrey, L.L., Crook, K., & Lewis, K. (1990). Perceived family environments of depressed and anxious children: child's and maternal figure's perspectives. *Journal of Abnormal Child Psychology, 18,* 527-547.

Steketee, G.S. & Van Noppen, B. (2003). Family approaches to treatment for obsessive–compulsive disorder. *Journal of Family Psychotherapy, 14,* 55–71.

Stewart, S.E., Geller, D.A., Jenike, M., Pauls, D., Shaw, D., Mullin, B., et al. (2004). Long-term outcome of pediatric obsessive-compulsive disorder: A meta-analysis and qualitative review of the literature. *Acta Psychiatrica Scandinavica, 110,* 4-13.

Stobie, B. (2009). Working with families. In P.W. Waite & T. Williams (Eds.), *Obsessive Compulsive Disorder: Cognitive Behaviour Therapy with Children and Young People* (pp. 118-135). London: Routledge.

Storch, E.A., Geffken, G.R., Merlo, L.J., Jacob, M.L., Murphy, T.K., Goodman, W.K. et al. (2007). Family Accommodation in Paediatric Obsessive-Compulsive Disorder. *Journal of Clinical Child and Adolescent Psychology, 36,* 207-216.

Swedo, S. E., Rapoport, J. L. (1989). Phenomenology and Differential Diagnosis of Obsessive-Compulsive Disorder in Children and Adolescents. In J.L. Rapoport

(Eds.), *Obsessive-compulsive disorder in children and adolescents* (pp. 13-32).

Washington: American Psychiatric Press.

Swedo, S. E., Rapoport, J. L., Leonard, H. & Lenane, M. (1989). Obsessive-compulsive

disorder in children and adolescents. *Archives of General Psychiatry, 46,* 335-341.

Tabachnick, B.G., & Fidell, L.S. (2007). Using Mulitivariate Statistics (5th ed.). London:

Pearson.

Tantam, D. (2000). Psychological disorders in adolescents and adults with asperger

syndrome. *Autism, 4,* 47-62.

Thomsen, P.H. (1999). *From thought to obsessions: Obsessive-compulsive disorder in*

children and adolescents. London: Jessica Kingsley.

Thomsen, P.H., & Mikkelsen, H.U. (1995). Course of obsessive-compulsive disorder in

children and adolescents: A prospective Danish study of 23 Danish cases. *Journal*

of the American Academy of Child and Adolescent Psychiatry, 34, 1432-1440.

Tolin, D.F., Abramowitz, J.S., Brigidi, B.D., & Foa, E.B. (2003). Intolerance of

uncertainty in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 17,*

233-242.

Turner, C. (2006). Cognitive-behavioural theory and therapy for obsessive-compulsive

disorder in children and adolescents: Current status and future directions. *Clinical*

Psychology Review, 26, 912-938.

Valleni-Basile, L.A., Garrison, C. Z., Jackson, K.L., Waller, J.L., McKeown, R. E., Addy,

C.L., et al. (1995). Family and psychosocial predictors of obsessive compulsive

disorder in a community sample of young adolescents. *Journal of Child and Family*

Studies, 4, 193-206.

Van Grootheest, D.S., Cath, D.C., Beekman, A.T., & Boomsma, D.I. (2005). Twin studies on obsessive-compulsive disorder: A review. *Twin Research and Human Genetics, 8,* 450-458.

Van Noppen, P., & Steketee, G. (2009). Testing a conceptual model of patient and family predictors of obsessive compulsive disorder (OCD) symptoms. *Behaviour Research and Therapy, 47,* 18-25.

Warwick, H. M.C. & Salkovskis, P. (1985). Reassurance. *British Medical Journal. 290,* 1028.

Waters, T.L., & Barrett, P.M. (2000). The role of the family in childhood obsessive-compulsive disorder. *Clinical Child and Family Psychology Review, 3,* 173-184.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1063-1070.

Watson, H.J., & Rees, C.S. (2008). Meta-analysis of randomised, controlled treatment trials for pediatric obsessive-compulsive disorder. *Journal of Child Psychology and Psychiatry, 49,* 489-498.

Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practice manual and conceptual guide.* Chichester: John Wiley & Sons.

Wells, A. (2000). *Emotional disorders and metacognition.* Chichester: Wiley.

Wells, A., & Matthews, G. (1994). *Attention and emotion: A clinical perspective.* Hove, UK: Erlbaum.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF model. *Behaviour Research and Therapy, 34,*881-888.

Wells, A. & Papageorgiou, C. (1998). Relationship between worry, obsessive-compulsive symptoms and meat-cognitive beliefs. *Behaviour Research and Therapy, 36,* 899-913.

Wever, C., & Rey, J.M. (1997). Juvenile obsessive-compulsive disorder. *Australian and New Zealand Journal of Psychiatry, 31,* 105-113.

Whitaker, A., Johnson, J., Shaffer, D., Rapoport, J.L., Kalikow, K., Walsh, B.T., et al., (1990). Uncommon troubles in young people: Prevalence estimates of selected psychiatric disorders in a nonreferred adolescent population. *Archives of General Psychiatry, 47,* 487-496.

Williams, T., & Waite, P. (2009). Introduction to obsessive compulsive compulsive disorder. In P. Waite & T. Williams (Eds.), *Obsessive compulsive disorder: Cognitive Behaviour Therapy with children and young people* (pp. 1-19). London: Routledge.

Zimbardo, P.G. (1985). *Psychology and life.* Glenview, Il: Scott, Foresman.

Zohar, A.H. (1999). The epidemiology of obsessive-compulsive disorder in children and adolescents. *Child and Adolescent Psychiatric Clinics of North America, 8,* 445-460.

Zucker, B.G., Craske, M.G., Barrios, V., & Holguin, M. (2002). Thought action fusion: can it be corrected? *Behaviour Research and Therapy,* 40, 653-664.

Yorulmaz, O., Altin, M., & Karanci, N. (2008). Further support for responsibility in different obsessive-compulsive symptoms in Turkish adolescents and young adults. *Behaviour and Cognitive Psychotherapy, 36,* 605-617.

Appendix A *Information Regarding Participating Schools*

School A was a county maintained co-educational junior school in a rural area. It had 90 pupils, aged 9-11 years. The percentage of students with learning difficulties was in line with the national average.

School B was a county maintained co-educational junior school in a semi-rural area. It had 154 pupils, aged 9-11 years. Standards of attainment when pupils join the school was in line with the national average. The proportion of pupils with learning difficulties and those with a statement of special educational needs was in line with the national average.

School C was a county maintained co-educational junior school located in the inner city. It had 126 pupils, aged 9-11 years, from a mixture of socio-economic backgrounds. Attainment on entry was below the national average.

Appendix B *Permission to Contact Form*

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Telephone: 01603 593310

Fax: 01603 593166

PERMISSION TO CONTACT FORM

Title of Project: How does reassurance affect children's behaviour during the sorting task?

Name of Researcher: Jagoda Wator, Trainee Clinical Psychologist

Please initial box

1. I have read and understand the information sheet for the above project and have been given the opportunity to ask questions.

2. I understand that the school's participation is voluntary and that myself, parents, and children are free to withdraw at any time without reason.

3. I understand that individual results will be kept confidential to the researcher, except where a child is deemed to be experiencing significant distress or psychological difficulties. In such instances, parents of that child will be informed.

4. I agree that my school and its members may take part in the above study.

Please complete the following:

_____   _____   _____
Name of Head   Today's Date   Signature

_____
Name of School

To be completed by the researcher:

_____   _____   _____
Name of Researcher   Today's Date   Signature

Please return this form in the enclosed envelope. The form will be signed by the researcher and a copy returned to you. Thank you for your help with this research.

Appendix C *Parent/Guardian Invitation Letter*

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Telephone: 01603 753643
07752639546

Dear Parent

Re: Invitation to take part in a study: 'How does reassurance affect children's behaviour during the sorting task?

I am a trainee clinical psychologist at the University of East Anglia, and I am writing to invite you and your child to take part in my research. You have been asked to take part because your child's school is helping me with my research.

Before you decide, you need to know why I am doing this research and what it will involve. To help you decide whether you and your child would like to take part, please take time to read the enclosed information sheet carefully (entitled 'Information Sheet for Parents/ Guardians).

If you and your child are happy to take part, you will need to sign the 'Consent Form for Parent/Guardian'. Your child will need to sign the 'Assent Form for Young People'. You will then need to return these two forms to the school office in the envelope provided. Your child's school will receive a £3 book token for every child that takes part.

Please do not hesitate to contact me on the contact details provided, if you have any questions or queries regarding this research.

Thank you for taking the time to read this.

Yours faithfully

Jagoda Wator
Trainee Clinical Psychologist

Supervised by:
Professor Shirley Reynolds
Clinical Psychologist

Appendix D *Parent/Guardian Information Sheet*

INFORMATION SHEET FOR PARENTS/GUARDIANS

Who am I?

I am a trainee clinical psychologist at the University of East Anglia. Clinical psychologist work with children and adults with a range of mental health problems. Part of their work involves conducting research in order to gain a better understanding of mental health problems and to develop better treatments.

Who am I looking for?

I am looking for young people aged between 9 and 11 years and their mothers. I am interested in children who **do not** have a diagnosis of anxiety or mood disorder, and who are **not** attending child and adolescent mental health services (CAMHS). This is why your child has been invited to take part. Exploring psychological processes in children without mental health difficulties is a good way of investigating psychological theories about clinical problems.

What is the project about?

Obsessive compulsive disorder is a very common psychological problem. It often affects children and adolescents, and can have a very distressing impact on both sufferers and their families. People with obsessive compulsive disorder feel anxious a lot of the time. It is thought that thoughts of being responsible for causing harm to others may be a driving force behind their feelings of anxiety. They tend to seek a lot of reassurance from their parents and families, because they believe that this will help them to feel less worried and anxious by spreading the responsibility to others. Our experience of working with children and adolescents with obsessive compulsive disorder tells us that reassurance received from others reduces anxiety for a little while but not in the long term. As a consequence, young people with obsessive compulsive disorder tend to repeatedly ask for reassurance from their parents. This can be very tiring for the parents and puts a lot of strain on their relationship with the child.

Although, there has been many research on different aspects of obsessive compulsive disorder, our knowledge of the effects of reassurance is very limited. We still do not know for instance why reassurance does not work in the long term. By doing this research I am hoping to gain a better understanding of the effects of reassurance on child's feelings and behaviour. Developing a better understanding of the way young people feel and behave could lead to the development of better ways to help those who suffer with obsessive compulsive disorder.

How will I and my child be involved?

If you decide that you would like to take part and are happy for your child to take part too, this is what will happen.

1. You will fill in the enclosed consent form.
2. *You will need to give the enclosed information sheet and assent form to your child.*
3. *If they also agree to take part, you will need to send both the consent and the assent form back to me in the envelope provided.*
4. I will then call you to arrange a convenient time to meet with you and your child at your home. During this telephone call I will ask you some information about your

child such as whether they have nut allergy. This is because the task involves dealing with sweets that have nuts. I also hope that this telephone conversation will be a good opportunity for you to ask me any questions about the research.

5. When I visit you at home, I will ask your child to complete three questionnaires about their mood.

6. I will then explain to you what the research task involves. I will also ask you to complete a short demographic information sheet and a brief questionnaire about your mood, whilst your child is doing the sorting task.

7. I will then ask your child to complete a research task. I will ask them to sort sweets into three containers, based on whether they contain nuts or not. I will tell your child that I will not be checking what they have done. This task will take about 10 minutes to complete.

8. I will take a video recording of you and your child while they are sorting the sweets. Another trainee clinical psychologist, will watch the tapes to ensure that I did not miss anything that might be of significance and to check the reliability of the data recording. All tapes will be destroyed after I have recorded the data.

9. After the task, your child will be asked to complete one questionnaire about their mood.

10. Following this, I will discuss the purpose of the research with you and your child. You and your child will be given an opportunity to ask any questions.

Do I have to take part?
It is up to you to decide. If you decide not to take part this will not affect your child's care or education in any way.

Can I or my child change our minds?
You and your child are free to withdraw from the research at any time without having to give a reason. As already mentioned, your decisions about this will not affect any aspect of your child's care or education.

Are there any risks to me or my child?
It is very unlikely that the task will cause you or your child any upset. We have tried this task in a previous study with children of the same age. Most children enjoyed the task and none were upset. However, if you or your child did become upset in any way, the task would be stopped immediately. You would be offered a chance to talk about your distress with the researcher. If your child's answers about their mood suggest that they might be experiencing psychological difficulties, I would tell you and recommend you contact your GP.

What are the potential benefits of taking part?
This is an opportunity for you and your child to contribute to improving our understanding of psychological difficulties in young people. Your child's school will receive a £3 book token for every child that takes part.

Will my taking part in the study be kept confidential?
Yes, all information about you and your child will be kept strictly confidential. The results will be analysed confidentially, and I will not use names on the computer or in the research reports. In accordance with the Data Protection Act (1998), all results will be stored securely in a locked cupboard at the University of East Anglia for five years from the date of collection.

Who has approved the study?
The study has been reviewed and approved by the Faculty of Health Research Ethics Committee at the University of East Anglia.

What if there is a problem?
If you have a concern about any aspect of this study, or you wish to discuss this study further please contact:
Jagoda Wator
School of Medicine, Health Policy and Practice
University of East Anglia
Norwich, NR 4 7TJ
Tel.07752639546 Email: j.wator@uea.ac.uk
If you would like to speak to someone else, you can contact Professor Shirley Reynolds (Tel:01603 593312) at the same address.

What do I need to do if I would like to take part?
You need to sign the consent form for parents. You need to give the information sheet entitled 'Information Sheet for Young People' and assent form to your child.

If you both agree to participate, please send signed consent and assent forms back to me in the enclosed envelope. I will then telephone you to arrange a convenient time to meet with you and your child at home.

Appendix E *Parent/Guardian Consent Form*

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Telephone: 01603 753643
07752639546

Participant Identification Number:

CONSENT FORM FOR PARENT/GUARDIAN

Title of Project: How does reassurance affect children's behaviour during the sorting task?

Name of Researcher: Jagoda Wator, Trainee Clinical Psychologist

Please initial box

1. I have read and understood the participant information sheet for parent/guardian for the above project.

2. I give permission for the researcher to telephone me to arrange a home visit.

3. I understand that my and my child's taking part is voluntary and that we can drop out at any time without giving any reason, without my or my child's legal rights being affected

4. I give permission for the research meeting to be recorded on video tape.

5. I agree to take part in the above study.

6. I agree for my child to take part in the above study.

Please complete the following:

_____ _____ _____
Name of Child   Child's Date of Birth   Name of School

_____ _____ _____
Name of Parent/Guardian   Date   Signature

_____ _____ _____
Home Telephone Number   Mobile Number   Work Tel Number

To be completed by the researcher:

_____ _____ _____
Name of Researcher   Today's Date   Signature

Please give the information sheet entitled 'Information Sheet for Young People' and assent form to your child. If they also agree to take part, please return both the consent form and the assent form in

the enclosed envelope to the school office. Both forms will be signed by the researcher and copies returned to you and your child.

Appendix F *Child Information Sheet*

Information Sheet for Young People

Hello! My name is Jagoda and I would like to invite you to take part in a research that I am doing. Before you decide if you want to join in it's important to understand why the research is being done and what it will involve for you. So please consider this leaflet carefully. Talk about it with your family, friends, doctor or nurse if you want to.

Who I am? Why I am doing this project?

I am a trainee psychologist. I work with adults and young people who have worries or difficulties that cause them problems at home, school and with their friends. Sometimes, young people do things to make them feel better, but in the long run these things can be unhelpful. I want to find out more about these unhelpful things they do, so I can try to help them.

What I would like you to do if you take part?

If you and your parents/guardians decided that you would like to take part, this is what will happen

1. I will come and see you at home.
2. I will ask you some questions about your feelings.
3. I will then ask you to complete a task, which involves sorting sweets. The task is not difficult and it will take about 10 minutes.
4. During the task you will be video-recorded. This is to check that I am recording things properly. I will destroy the tapes after I have finished with them.
5. After the task I will ask you some more questions about your feelings.

Can I change my mind?

Yes. You can stop taking part at any time.

What are the benefits of taking part?

You will be helping with our understanding of difficulties some young people have. Your school will receive a £3 book token.

Who will know my results?

Only I will see your answers. If you tell me something that is worrying you I might share it with your parents or guardians, but I will tell you I am going to do this.

Who can I speak to if I have questions? Jagoda Wator

School of Medicine, Health Policy and Practice

University of East AngliaNorwich, NR 4 7TJTel.07752639546 Email: j.wator@uea.ac.uk *I would like to take part-what do I need to do?*

Thank you! You need to sign the Assent Form for Young People and return it to your parents.

Appendix G *Child Assent Form*

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Telephone: 01603 753643
07752639546

ASSENT FORM FOR YOUNG PEOPLE

Project Title: How does reassurance affect children's behaviour during the sorting task?
Name of Researcher: Jagoda Wator, Trainee Clinical Psychologist

Please circle all you agree with.

Have you read (or had read to you) about this project?	YES / NO
Has somebody else explained this project to you?	YES / NO
Do you understand what this project is about?	YES / NO
Have you asked all the questions you want?	YES / NO
Have you had your questions answered in a way that you understand?	YES / NO
Do you understand it is OK to stop taking part at any time?	YES / NO
Are you happy to take part?	YES / NO
Do you agree for our meeting to be recorded on a video tape?	YES / NO

If <u>any</u> answers are 'no' or you don't want to take part, don't sign your name!
If you <u>do</u> want to take part, you can write your name below:

_____   _____   _____
Your Name   Today's Date   Signature
To be completed by the researcher:

_____   _____   _____
Name of Researcher   Today's Date   Signature
Please return this form to your parents, who will send it back to me. Thank you very much for your help!

Appendix H *Correspondence with the Faculty of Health Ethics Committee*

Jagoda Wator
14A, Bishop Bridge Road
Norwich
NR1 4ET

Research Office, Room 1.09
Chancellors Drive Annex
University of East Anglia
Norwich NR4 7TJ
United Kingdom

Email :Jane.Carter@uea.ac.uk
Tel: +44 (0) 1603 591023
Fax : +44 (0) 1603 591132

Web :www.uea.ac.uk
Web: http://www.uea.ac.uk

4 September 2009

Dear Jagoda

Inflated responsibility and maternal reassurance: impact on child and mother behaviour – 2009033

The amendments to your above proposal have now been considered by the Chair of the FOH Ethics Committee and we can now confirm that your proposal has now been approved.

Please could you ensure that any amendments to either the protocol or documents submitted are notified to us in advance and also that any adverse events which occur during your project are reported to the committee. Please could you also arrange to send us a report once your project is completed.

The committee would like to wish you good luck with your project.

Yours sincerely,

Jane Carter

Appendix I *Demographic Questionnaire*

School of Medicine, Health Policy and Practice
Doctoral Programme in Clinical Psychology

University of East Anglia
Norwich NR4 7TJ England

Telephone: 01603 753643
07752639546

DEMOGRAPHICS INFORMATION SHEET

Study Title: How does reassurance affect children's behaviour during the sorting task.
Name of Researcher: Jagoda Wator, Trainee Clinical Psychologist.

Please complete the following information about your child by circling the appropriate response.

Is your child a boy or a girl?   Boy/Girl

How old is your child?   ……years

How would you describe your child's ethnic group?(Please circle)

White	Mixed	Asian or Asian British	Black or Black British	Chinese or other ethnic group
British	White & Black Caribbean	Indian	Caribbean	Chinese
Irish	White & Black African	Pakistani	African	Other Ethnic Group
Other White	White & Asian	Bangladeshi	Other Black	
	Other Mixed	Other Asian		

Is your child colour blind?   Yes/No
(We ask this as the task involves sorting things based on their colour)
Does your child have any allergies?   Yes/No
(We are interested in whether this will impact on the sorting task)
If yes, what are they allergic to?..
Does anyone in your family have any allergies?   Yes/No
If yes, what are they allergic to?..
Thank you for your help

Appendix J *The State Trait Anxiety Inventory for Children (STAIC); Spielberger, Edwards, Lushene, Montuori, & Platzek, 1973)*

DIRECTIONS: a number of statements that boys and girls use to describe themselves are given below. Read each statement carefully and decide how you feel *right now*. Then put an X in the box in front of the word or phrase which best describes how you feel. There are no right or wrong answers. Do not spend too much time on any one statement. Remember, find the word or phrase which best describes how you feel right now, *at this very moment.*

1. I feel	☐ very calm	☐ calm	☐ not calm
2. I feel	☐ very upset	☐ upset	☐ not upset
3. I feel	☐ very pleasant	☐ pleasant	☐ not pleasant
4. I feel	☐ very nervous	☐ nervous	☐ not nervous
5. I feel	☐ very jitery	☐ jitery	☐ not jitery
6. I feel	☐ very rested	☐ rested	☐ not rested
7. I feel	☐ very scared	☐ scared	☐ not scared
8. I feel	☐ very relaxed	☐ relaxed	☐ not relaxed
9. I feel	☐ very worried	☐ worried	☐ not worried
10. I feel	☐ very satisfied	☐ satisfied	☐ not satisfied
11. I feel	☐ very frightened	☐ frightened	☐ not frightened
12. I feel	☐ very happy	☐ happy	☐ not happy
13. I feel	☐ very sure	☐ sure	☐ not sure
14. I feel	☐ very good	☐ good	☐ not good
15. I feel	☐ very troubled	☐ troubled	☐ not troubled
16. I feel	☐ very bothered	☐ bothered	☐ not bothered
17. I feel	☐ very nice	☐ nice	☐ not nice
18. I feel	☐ very terrified	☐ terrified	☐ not terrified
19. I feel	☐ very mixed-up	☐ mixed-up	☐ not mixed-up
20 I feel	☐ very cheerful	☐ cheerful	☐ not cheerful

Appendix K *The Spence Children's Anxiety Scale (SCAS) ; Spence, 1998)*
SPENCE CHILDREN'S ANXIETY SCALE

Your Name: _____   Date: _____

PLEASE PUT A CIRCLE AROUND THE WORD THAT SHOWS HOW OFTEN EACH
OF THESE THINGS HAPPEN TO YOU. THERE ARE NO RIGHT OR WRONG
ANSWER.

1. I worry about things   Never Sometimes Often Always

2. I am scared of the dark   Never Sometimes Often Always

3. When I have a problem, I get a funny feeling
in my stomach   Never Sometimes Often Always

4. I feel afraid   Never Sometimes Often Always

5. I would feel afraid of being on my own at home   Never Sometimes Often Always

6. I feel scared when I have to take a test   Never Sometimes Often Always

7. I feel afraid if I have to use public toilets
or bathrooms   Never Sometimes Often Always

8. I worry about being away from my parents   Never Sometimes Often Always

9. I feel afraid that I will make a fool of myself in
front of people   Never Sometimes Often Always

10. I worry that I will do badly at my school work   Never Sometimes Often Always

11. I am popular amongst other kids my age   Never Sometimes Often Always

12. I worry that something awful will happen to
someone in my family   Never Sometimes Often Always

13. I suddenly feel as if I can't breathe when there is
no reason for this   Never Sometimes Often Always

14. I have to keep checking that I have done things
right (like the switch is off, or the door is locked)   Never Sometimes Often Always

15. I feel scared if I have to sleep on my own   Never Sometimes Often Always

16. I have trouble going to school in the mornings
because I feel nervous or afraid   Never Sometimes Often Always

17. I am good at sports   Never Sometimes Often Always

18. I am scared of dogs   Never Sometimes Often Always

19. I can't seem to get bad or silly thoughts out
of my head   Never Sometimes Often Always

20. when I have a problem, my heart beats really
fast   Never Sometimes Often Always

21. I suddenly start to tremble or shake when there
is no reason for this   Never Sometimes Often Always

22. I worry that something bad will happen to me   Never Sometimes Often Always

23. I am scared of going to the doctors or dentists Never Sometimes Often Always

24. When I have a problem, I feel shaky   Never Sometimes Often Always

25. I am scared of being in high places or lifts
(elevators)   Never Sometimes Often Always

26. I am a good person   Never Sometimes Often Always

27. I have to think of special thoughts to stop bad
things from happening (like numbers or words)   Never Sometimes Often Always

28. I feel scared if I have to travel in the car, or on a
bus or a train   Never Sometimes Often Always

29. I worry what other people think of me   Never Sometimes Often Always

30. I am afraid of being in crowded places (like
shopping centres, the movies, buses, busy
playgrounds)   Never Sometimes Often Always

31. I feel happy   Never Sometimes Often Always

32. All of a sudden I feel really scared for no reason
at all   Never Sometimes Often Always

33. I am scared of insects or spiders   Never Sometimes Often Always

34. I suddenly become dizzy or faint when there
is no reason for this   Never Sometimes Often Always

35. I feel afraid if I have to talk in front of my class Never Sometimes Often Always

36. My heart suddenly starts to beat too quickly for
no reason   Never Sometimes Often Always

37. I worry that I will suddenly get a scared feeling

when there is nothing to be afraid of   Never Sometimes Often Always

38. I like myself   Never Sometimes Often Always

39. I am afraid of being in small closed places, like
tunnels or small rooms   Never Sometimes Often Always

40. I have to do some things over and over again
(like washing my hands, cleaning or putting things
in a certain order)   Never Sometimes Often Always

41. I get bothered by bad or silly thoughts or pictures
in my mind   Never Sometimes Often Always

42. I have to do some things in just the right way to
stop bad things happening   Never Sometimes Often Always

43. I am proud of my school work   Never Sometimes Often Always

44. I would feel scared if I had to stay away from
home overnight   Never Sometimes Often Always

45. Is there something else that you are really afraid of?   YES NO

Please write down what it is

_____

_____

46. How often are you afraid of this thing?   Never Sometimes Often Always