Decision-making in OCD:

when both acting and not acting result in some harm

Zoe Kindynis

June, 2016

Submitted in partial fulfilment of the requirements for the degree of Doctor in Clinical Psychology (DClinPsy), Royal Holloway, University of London.

Acknowledgements

Firstly, I would like to express my sincere gratitude to Dr Abigail Wroe, who has so generously given her time, expertise and guidance throughout the entirety of this process. I am truly grateful to have been supervised by someone so inspiring, motivating, patient and kind.

I would also like to give warmest thanks to the individuals, services and charities who provide invaluable advice and support to those suffering from OCD and who kindly enabled me to reach out to the OCD community through them. Their backing was both humbling and hugely appreciated.

Further thanks are given to my parents, Jill and Louis, and to my partner Daniel, for their unwavering love and confidence.

Finally, I would like to thank all those who gave their time to participate in this research, and especially those participants with OCD who selflessly allowed me a small glimpse into life with the disorder. Without them, this research would not have been possible, and it is for them, that this research has been conducted. I deeply hope it is of interest.

ABSTRACT

Individuals with OCD are found to be more likely to act to prevent harm than individuals without OCD *only* in scenarios relevant to their obsessional concerns. Conversely, recent moral-reasoning literature suggests that individuals with OCD are *less* likely than individuals without OCD to act to prevent harm when that action causes other, lesser, harm. However, this research has been criticised owing to the high-risk, nomothetic content of scenarios used. Therefore, this study asked individuals with and without OCD to consider hypothetical everyday scenarios typical of OCD concerns to address three aims. The first aim was to verify previous findings that when scenarios are described such that acting prevents harm, individuals with OCD were more likely than individuals without OCD to act to prevent harm, only in scenarios idiosyncratically rated as most-disturbing to that individual. The findings supported this hypothesis. Secondly, and of primary interest to this study, the research aimed to explore whether individuals with and without OCD differed in likelihood of acting to prevent harm when scenarios were described such that acting to prevent harm, resulted in other, lesser, harm. It was found that, when risks of acting were presented, individuals with OCD were again more likely than individuals without OCD to act to prevent harm, only in their most-disturbing scenarios. A final aim was to explore factors that contributed to decisions. General responsibility beliefs and decision-specific feelings of immorality mediated decision differences, only in scenarios where risks of acting were not presented; when risks of acting were presented, no factor explored within this study contributed to decision differences. Findings are discussed in the context of previous research into decision-making and moral reasoning in OCD. Limitations are considered and areas for future research are suggested.

Table of Tables

Table of Figures

Table of Contents

CHAPTER 1: INTRODUCTION

Obsessive-Compulsive Disorder (OCD) is a mental health problem, experienced by approximately 1.2% of the population, that has been ranked by the World Health Organisation as the tenth most disabling disorder according to loss of earnings and diminished quality of life (OCD-UK, 2015). It is characterised by the presence of obsessions, compulsions or both. Obsessions are defined as recurrent and persistent thoughts, urges or impulses that are experienced as intrusive and unwanted, and which the individual attempts to ignore or suppress. Compulsions are defined as repetitive behaviours or mental acts aimed at preventing or reducing the anxiety associated with intrusions (OCD-UK, 2015). To meet diagnostic criteria, these obsessions and compulsions must be time consuming (taking over one hour a day) and cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (American Psychiatric Association, 2013).

Research has found that the intrusions experienced by those with OCD are common phenomena, with the majority of people in a nonclinical population reporting experiencing intrusions about potential harm (Rachman & De Silva, 1978). Those without OCD seem able to ignore these intrusions, or at least do not engage in compulsions that significantly interfere with their lives. However, those with OCD do not feel able to ignore such intrusions, and feel compelled to act in response in an attempt to prevent that potential harm (Rachman & De Silva, 1978). Many theories suggest that engaging in compulsions is critical in the development and maintenance of the disorder, with compulsive behaviour reinforcing beliefs, and in turn leading to

increased frequency of intrusions (Salkovskis & Campbell, 1994) and increased associated discomfort (Salkovskis, Westbrook, Davis, Jeavons, & Gledhill, 1997). It is suggested that intrusions raise an individual's awareness of potential harm, resulting in the individual being confronted with a decision whether to act or not to prevent such potential harm (Forrester, Wilson & Salkovskis, 2002). Improving our understanding of this decision-making juncture could prove key in understanding the disorder. So why is it then, that individuals without OCD generally decide not to act in response to these intrusions, whereas individuals with OCD do not feel able to make this decision?

This chapter will start by outlining the research into decision-making in individuals with OCD, and suggestions for potential explanations of decision differences. It will go on to introduce the relatively new and quickly developing field of moral reasoning as an exciting opportunity to explore potential differences in decision-making between individuals with and without OCD. Comment will be provided on research to date that has attempted to investigate this juncture between decision-making in OCD and moral reasoning and the necessary methodological improvements of these studies will be highlighted. The literature presented is hoped to enable the reader an understanding of the current landscape of research into decision-making in OCD and the areas that may progress this, thus leading to the hypotheses to be examined within this thesis.

1.1. Decision-making in OCD

Research has suggested that OCD should be considered a disorder of decision-making (Sachdev & Malhi, 2005), which may explain the behavioural differences in response to intrusions. For example, Beech and Liddell (1974) reported that participants with OCD subjectively identified more decision-making difficulties than participants without OCD. Furthermore, several studies have indicated that individuals with symptoms of OCD request additional observations (Walker, 1967, as cited in Beech & Liddell, 1974), additional information (Foa et al., 2003), more trials (Beech & Liddell, 1974) and more time (Foa et al., 2003) than those without symptoms of OCD before reaching a decision on a variety of decision-making tasks. Some studies have contested suggestions of decision-making differences, finding individuals with OCD requested similar (Jacobsen, Freeman & Salkovskis, 2012) or even fewer (Reese, McNally & Willhelm, 2011) amounts of information to make a decision than non-clinical controls. Such differences in findings across studies may be attributable to study materials, comorbidities or medication (Zhang et al., 2015). Alternatively, an explanation for these differences is provided by Foa and colleagues (2003) who found that when comparing 18 individuals with OCD and 18 non-anxious controls, decision-making differences between groups were specific to low-risk and OCD relevant decisions. Therefore, as both Reese and colleagues (2011), and Jacobsen and colleagues (2012) utilized a ‘beads task’, this was unlikely to echo obsessional concerns of the OCD group, and as such would not have demonstrated decision differences that may have been present had the scenarios been OCD-relevant.

Rocha, Alvarenga, Malloy-Diniz and Correa (2011) extended the above findings and suggested that participants with OCD also make significantly 'worse' decisions on a decision-making task, as they were found to make less advantageous decisions on the Iowa Gambling Task, a task thought to simulate real-life decision-making. Although previous studies (Nielen, Veltman, De Jong, Mulder & Den Boer, 2002) observed contrasting results and found participants with and without OCD to be comparable in a similar decision-making task, Rocha and colleagues (2011) provided a larger sample size and hence the sample consisted of a greater variety of OCD symptoms. It is worth considering, however, that Lawrence and colleagues (2006) suggested different OCD symptom dimensions are associated with distinct impairments in the decision-making process. This suggestion extends Foa and colleagues' (2003) finding that decision differences and difficulties are specific to low-risk, OCD-type scenarios, and indicates that such differences are more specific to an individual's idiosyncratic obsessional concerns; this may explain previously inconsistent findings.

Therefore, from the research on decision-making in OCD, it seems that when an individual with OCD is presented with a low-risk, OCD-relevant decision-making scenario, they show differences in how they reach decisions (taking more time and needing more information (Beech & Liddell, 1974; Foa et al., 2003)) and may also make less advantageous decisions (Rocha et al., 2011). There is also a suggestion that decision difficulties vary according to OCD subtypes (Lawrence et al., 2006).

Indeed, neurobiological evidence supports the notion that individuals with OCD show differences when making decisions (Cavedini, Gorini & Bellodi, 2006; Olley, Malhi & Sachdev, 2007; Sachdev & Malhi, 2005). Structural MRIs have consistently found

reduced grey matter volume in the orbitofrontal cortex (OFC) in individuals with OCD, a circuit that is believed to be specifically related to decision-making (Menzies et al., 2008). This biological evidence adds weight to the idea that those with OCD have difficulty in making decisions, but what processes underlie these difficulties, and why is it that those with OCD tend to make qualitatively different decisions (to act in response to intrusions) to those without OCD?

Psychological models have attempted to explain the pathology of OCD, and offer suggestions as to the underlying factors that may cause decision-making differences and difficulties in those with the disorder. It is important to note at this point, that although the literature refers to decision-making differences and difficulties, it does not indicate that individuals with and without OCD engage in different *processes* in order to reach decisions. Rather, it is suggested that decision differences and difficulties are due to differences in the contributory *factors* on which decisions are based. Suggestions for factors on which these decision differences may rely include desire for control, over-estimations of threat, intolerance of uncertainty, negative beliefs about the consequences of anxiety, negative beliefs about capacity to cope, and heightened responsibility beliefs (Steketee, Frost & Cohen, 1998).

1.2. Inflated responsibility beliefs as an explanation for decision-making differences

The widely renowned cognitive model of OCD (Salkovskis, 1985, 1999; Salkovskis, Forrester & Richards, 1998; Figure 1) posits that responsibility is central in the development and maintenance of the disorder. Responsibility, in this context, can be

defined as “the belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes” (Salkovskis, Shafran, Rachman, & Freeston, 1999, p. 1058) whether these are real-world or moral consequences.

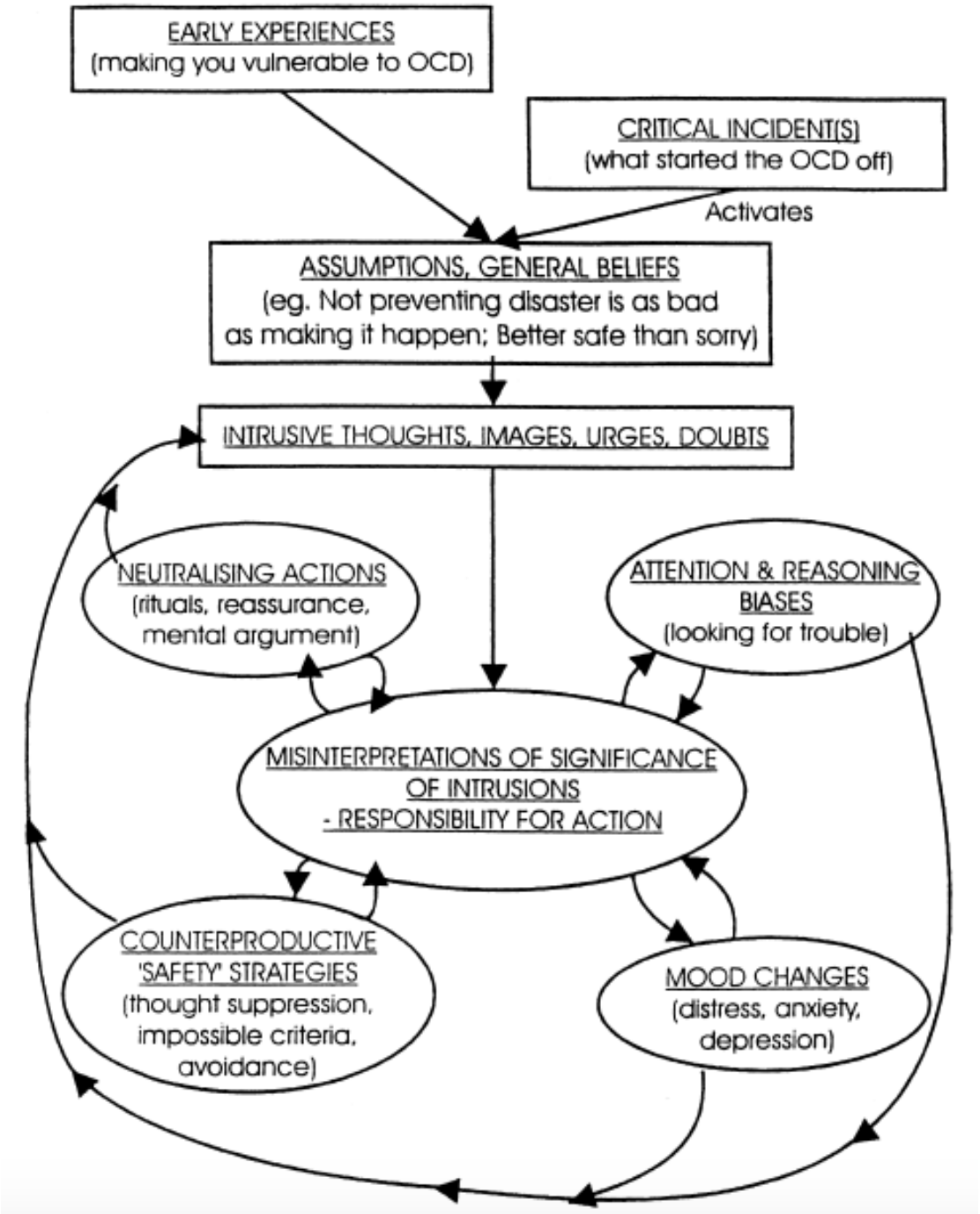


Figure 1. Cognitive Model of OCD (Salkovskis, Forrester & Richards, 1998)

According to this model, those with OCD hold heightened responsibility beliefs, and owing to these beliefs make different decisions as they interpret themselves as being responsible for their intrusions, and for preventing the contents of them (Salkovskis, 1985). For example, following seeing broken glass on the street, many observers could experience an intrusion about someone hurting themselves on this glass. However, those with OCD may feel responsible for preventing this harm (Foa, Sacks, Tolin, Przeworksi, & Amir, 2002), and as such will feel compelled to act to attempt to reduce this potential harm.

Research supports this model, suggesting that increased responsibility is linked with increased urges to act compulsively following intrusions and that this relationship also holds true within a non-clinical population (Taylor & Purdon, 2016). Adding weight to the relationship between these factors, Lopatka and Rachman (1995) found that decreasing responsibility in patients with OCD led to significant reductions in discomfort and urges to check whilst increasing responsibility corresponded with increased discomfort and urges to check, although this latter finding did not reach significance. Supporting these results, Shafran (1997) found that increasing perceived responsibility levels in 36 participants with OCD heightened discomfort and the urge to neutralize. Research has also suggested that individuals with symptoms of OCD are likely to allocate more responsibility to themselves than others, despite believing that others allocate responsibility equitably (Ashbaugh, Gelfand & Randomsky, 2006); this tendency to inflate personal responsibility was in fact found to be a better predictor of obsessive-compulsive symptoms than responsibility beliefs alone (Ashbaugh et al., 2006). Therefore, considering that individuals with OCD were found to be more likely to make responsibility-related appraisals of their intrusive

thoughts and to endorse general responsibility beliefs than their non-clinical, anxious or depressed counterparts (Salkovskis et al., 2000), and considering that heightened responsibility beliefs are associated with increased urges to carry out compulsions (Arntz, Voncken & Goosen, 2007; Lopatka & Rachman, 1995; Mancini, D'Olimpio & Cieri, 2004; Shafran, 1997), responsibility may provide an explanatory factor for why those with OCD make different decisions in response to their intrusions compared to those without OCD.

Although research largely supports a key role for heightened responsibility in the pathogenesis of OCD, some studies have found minimal (Steketee, Frost, & Cohen, 1998) or non-significant relationships (Fitch & Cougle, 2013; Frost, Steketee, Cohen & Griess, 1994; Jones and Menzies, 1997) between OCD and responsibility, thus contesting this notion. Furthermore, some research has suggested that the role of heightened responsibility may be restricted to certain subtypes of OCD (Clark, 2012): Wheaton, Abramowitz, Berman, Riemann and Hale (2010) found that beliefs about responsibility were only related to the symptom dimensions of contamination and responsibility for harm, whilst others proposed that inflated responsibility was apparent for checking compulsions, but not for cleaning (Foa, Sacks, Tolin, Prezworski & Amir, 2002; Rachman & Shafran, 1998; Rachman & Hodgson, 1980). However, a replication of Foa, Sacks and colleagues (2002), addressing methodological criticisms, found individuals with non-checking OCD also identified greater responsibility appraisals (Cougle, Lee & Salkovskis, 2007).

Despite debate around whether applicable to all OCD subtypes, responsibility beliefs remain a widely regarded feature in the etiology of OCD, and provide a plausible

factor on which decision differences may be based. However, an alternative explanatory factor, overestimation of potential threat, is also worthy of consideration.

1.3. Overestimation of threat as an explanation for decision-making differences

Early theorists proposed that a key difference between those with and without OCD is that those with OCD overestimate the probability and severity of aversive events and their consequences (Steketee et al., 1998). For example, following a potentially harmful event (broken glass on the street), this theory would suggest that individuals with OCD are likely to estimate a greater probability of harm and a more severe outcome (a child cutting themselves very severely), than individuals without OCD.

However, some studies exploring overestimation of threat indicate that individuals with OCD do not overestimate the *likelihood* (Menzies, Harries, Cumming & Einstein, 2000; Moritz & Pohl, 2009) of aversive events, but feel personally more vulnerable (Moritz & Pohl, 2009) to experience or cause events and overestimate the *severity* of the potentially negative consequences (Moritz & Jelinek, 2009).

Hence, proponents of this model suggest that these overestimations of threat lead to those with OCD being more likely to decide to act in these situations. Support for this notion is provided by Pushkarskaya and colleagues (2015), who found that individuals with and without OCD made different decisions when situations had ambiguous outcomes; there were no differences between groups when potential risks were stated. This indicates that when outcomes were ambiguous, individuals with and

without OCD may have interpreted potential risks differently, and hence made different decisions.

Uniting the two cognitive constructs of responsibility and overestimation of threat, Menzies and colleagues (2000) found that heightened responsibility led students to judge a potentially negative outcome to be more aversive, with greater estimates of cost and severity. Therefore, it seems that for those with OCD, heightened responsibility beliefs play a role in causing them to interpret potential outcomes as being more severe and costly in subjective danger calculations, and thus encourage them to act to avoid or reduce possible harm.

1.4. Key research into the role of responsibility in decision-making in OCD

Further exploring decision-making in OCD, and particularly the role of responsibility in decision-making, Wroe and Salkovskis (2000) explored a phenomenon known as 'omission bias', whereby harm resulting from action (commission) is judged as less acceptable than harm resulting from failing to act (omission) in the general population (Spranca, Minsk & Baron, 1991).

In this study, 42 individuals with OCD, 53 non-clinical controls and 25 anxious controls, were presented with eight everyday (low-risk) hypothetical scenarios and asked about their likelihood of acting to prevent harm in the scenarios, and their feelings of immorality, worry, responsibility, cause and blame for potential harm. Prior to reading the scenarios, participants were also given a disturbance-rating questionnaire, which enabled the authors to identify participants' semi-

idiosyncratically most-disturbing (and hence, OCD relevant) scenarios, and compare these to least-disturbing scenarios (Wroe & Sakovskis, 2000).

It was found that individuals with OCD lacked omission bias for situations that concern them (relate to their obsessional problems)(Wroe & Salkovskis, 2000). That is, in situations rated most-disturbing (and hence relevant to their OCD), individuals with OCD were as likely to decide to act to try and prevent harm in a situation where not acting to prevent harm would be perceived as an omission, as they were in a situation where not acting to prevent harm would be perceived as a commission. For example, returning to the example of broken glass on the street, an individual *without* OCD may see broken glass on the street and have a thought that someone may hurt themselves on that glass, and then decide not to act to remove that glass (perceiving that they are not responsible for any potential harm). However, when the scenario was adapted to state that that individual had dropped the glass there themselves (and so was responsible for it being there, thus transforming the situation such that not acting was a commission), the individual without OCD was more likely to state that they would remove the broken glass than in the first scenario. In contrast, an individual with OCD may notice broken glass and perceive themselves to be as responsible for potential harm if they do not act to prevent this harm (by removing the glass) as in the scenario when they actually dropped the glass; the individuals with OCD decided to act to prevent harm (remove the broken glass), in both scenarios. The authors suggested that responsibility beliefs transformed the omission situation so an individual with OCD (and hence, heightened responsibility beliefs) perceived him/herself as an ‘active agent’ in the situation, such that failing to prevent harm was then judged as bad as, or as morally equivalent to, actively causing harm.

Consequently, individuals with OCD were found to be more likely to act to prevent harm than individuals without OCD in omission situations that were relevant to their OCD. Furthermore, individuals with OCD also reported higher feelings of responsibility, worry immorality, cause and blame in these situations, than their non-clinical counterparts.

Importantly, these differences between individuals with and without OCD were found only in situations related to their obsessional concerns (rated as most-disturbing), leading the authors to conclude that there is no difference in *general* decision-making or judgements between individuals with and without OCD, but that responsibility beliefs transform the decisions of those with OCD in their OCD-relevant scenarios. This finding echoes earlier presented suggestions of Foa and colleagues (2003) and Lawrence and colleagues (2006).

This study by Wroe and Salkovskis (2000) therefore provides critical evidence in the exploration of decision-making in OCD. Owing to the finding that differences were specific to their most-disturbing, and hence OCD-relevant scenarios, it is suggested that those with OCD do not have an inferior decision-making process, but that they make different decisions due to a difference in the factors influencing their decisions in these scenarios (such as trying 'too hard' to ensure no harm occurs, due to inflated responsibility beliefs) (Wroe & Salkovskis, 2000). However, owing to the hypothetical scenarios used, it is difficult to say whether the same pattern of results would be found in real-life decision-making scenarios (Teper, Inzlicht, & Page-Gould, 2011). Furthermore, the researchers did not systematically investigate the role of responsibility in decision-making.

Siev, Huppert and Chambless (2010) largely supported the findings of Wroe and Salkovskis (2000). Although they did not investigate likelihood of acting in scenarios, and so findings do not indicate whether participants would make different decisions, they explored responsibility interpretations, and so it can be seen whether participants differed on the factors that may influence their decision-making. It was found that in a student population of 342, omission bias in OCD-relevant scenarios was inversely related to OCD symptoms (the more OCD symptoms reported, the less difference participants showed between omission and commission scenarios). When extending this to a clinical sample of 103 participants with OCD compared to 106 participants without OCD, individuals with OCD showed significantly less omission bias for scenarios relevant to OCD concerns than the comparison group (Siev et al., 2010). Therefore, consistent with findings from Wroe and Salkovskis (2000), it was concluded that whereas participants without OCD showed differences between how responsible they felt in an omission compared to commission scenario, participants with OCD did not show such large differences, and consequently felt more responsible than their non-clinical counterparts in omission scenarios. Again echoing the findings of Wroe and Salkovskis (2000), no evidence was found of a general omission bias (for scenarios unrelated to OCD concerns), and this supports the notion that individuals with OCD do not show differences in general decision-making. Contrasting Wroe and Salkovskis' (2000) work but echoing Foa and colleagues (2003), the association between OCD symptoms and omission bias was found in OCD-type scenarios, which, although encompassing typical OCD fears (such as washing and checking), were not specific to participants' idiographic concerns. Furthermore, exploring separately the washing and checking scenarios dependent on

participants' washing and checking subscales of the OCI-R did not reveal a differential effect of symptom dimension on type of scenario presented. Therefore, this questions whether decision-making differences are only shown in idiosyncratic OCD-relevant situations as posited by Wroe and Salkovskis (2000), or whether they may also be found in more general *OCD-type* situations, as suggested by Siev and colleagues (2010).

From research explored so far, it seems that those with and without OCD make different decisions when their obsessional concerns are activated, potentially due to the heightened responsibility beliefs associated with OCD. These responsibility beliefs seem to be associated with individuals with OCD making decisions to try and avoid or reduce potential harm, more so than individuals without OCD.

However, it has also been suggested that in some instances, those with OCD do not wish to act to prevent harm as they fear acting may lead to other harm (i.e. acting would assume personal responsibility for other potential harm)(Wroe, personal communication). For example, again using the broken glass scenario to illustrate, individuals with OCD may decide not to act to move the glass to prevent someone from falling on it, as moving the glass would mean pushing it into the road, where a cyclist may ride over it. This notion that individuals with OCD may be less inclined to act due to a risk of potential other harm, despite inaction also resulting in a risk of potential harm, reflects the finding that decision-makers are seen as more responsible for outcomes when these are the result of a decision to act compared to a decision not to act (Spranca et al., 1991; Zeelenberg, Pligt & de Vries, 2000). The heightened sense of responsibility associated with OCD could therefore affect decision making in

one of two ways: concern around *general* responsibility may lead individuals with OCD to seek a utilitarian outcome (one with least harm); alternatively, concern around *personal* responsibility may increase the chances of individuals with OCD not acting, as to do so would implicitly assume responsibility for the outcome. Therefore, which of these is found in those with OCD: do they act to reduce harm, or would the unwanted fact that this brings personal responsibility override the desire to reduce harm? In Wroe and Salkovskis' (2000) study, participants with OCD were more likely to act to reduce harm than those without OCD in their obsession-relevant scenarios. However, in this study, scenarios were described such that the actor was able to prevent all harm that they could have anticipated (Siev et al., 2010) and where acting to reduce harm involved no consequence other than the reduction of harm. Would this result still be the case if acting to reduce harm resulted in other (albeit lesser) harm?

1.5. Decision-making in OCD when both acting and not acting result in some harm

Franklin, McNally and Riemann (2009) attempted to answer exactly this question using hypothetical moral dilemmas in a format widely used in philosophy: the canonical trolley problem. In this dilemma the participant is told to imagine that they are a bystander, watching a runaway train with broken brakes. They are given two options: do nothing, in which case the runaway train will fatally injure five people working on the track; or do something and press a switch, which will change the path of the train towards and fatally injure one person working on another part of the track. The utilitarian option- the one resulting in least harm- is to divert the train and so if individuals with OCD have concerns around general responsibility and minimising

harm, then it was hypothesised that this would be the option chosen. However, if they alternatively have concerns around personal responsibility, and not wanting to be the active agent in causing harm to someone who otherwise would not have been harmed, then they would be expected to choose to 'do nothing'. Interestingly, following 10 moral-dilemmas of the aforementioned format, no significant difference was found between individuals with and without OCD in the decisions made, thereby supporting neither hypothesis. Further exploration of the results revealed contradicting suggestions: on the one hand the OCD group exhibited a slight, albeit non-significant trend towards utilitarian decisions (choosing to divert the trains path), potentially indicating a concern with *general* responsibility for this group; on the other hand, higher scores for OCD patients on the Responsibility Attitudes Scale (Salkovskis, et al., 2000) correlated with a preference to do nothing. As prior literature endorses that heightened responsibility beliefs are associated with greater severity of OCD symptoms (Salkovskis, et al., 2000) this potentially indicates that those with more severe OCD experience a concern with *personal* responsibility. These conflicting suggestions cause difficulties when attempting to draw conclusions from this study about the decisions of those with OCD. Corroborating Franklin and colleague's (2009) results, Harrison and colleagues (2012) also found that patients with OCD did not differ from a control group in their responses to similar moral dilemmas. However, Harrison and colleagues (2012) noted that the OCD group showed heightened activation in neural correlates of moral sensitivity, indicating that this factor may play a role in decision-making for individuals with OCD, more so than for those without.

A more recent study by Mancini and Gangemi (2015) explored similar concepts using different terms. This research explored altruistic (for the greater good) and

deontological (the ‘do not play god’ principle) guilt. These two varieties of guilt can be equated to the two types of responsibility explored by Franklin and colleagues (2009): general responsibility and altruistic guilt both aim for least harm, whilst personal responsibility and deontological guilt both concern not ‘playing god’ or assuming responsibility by acting regardless of whether this is for the good of victims. Mancini and Gangemi (2015) compared twenty patients with OCD, twenty anxious controls and twenty healthy participants answering seven scenarios (four moral dilemmas and three control scenarios). For example, one moral dilemma used stated:

“You are near a Ferris wheel. It does not work. Just under the wheel, there are five tourists. Suddenly, the wheel starts turning and soon a cabin will crush them to death. There is no way to warn them and they cannot escape in any way. The only way to save the five tourists is to pull a lever that can change the rotation of the wheel. Unfortunately, there are three people on the other side that would be killed. Should you pull the lever?” (Mancini & Gangemi, 2015, p.160).

It was found that participants with OCD preferred inaction, and that inducing deontological guilt also increased inaction preference. Mancini and Gangemi (2015) concluded that individuals with OCD are more sensitive to deontological guilt than individuals without OCD, and hence are more likely to decide not to act in order to avoid this guilt. This finding is in direct contrast to the findings of Wroe and Salkovskis (2000), whose research, although not using scenarios where there was a stated risk of acting, posited that those with OCD were *more* likely to act to prevent harm (which would be more in line with concerns regarding altruistic guilt).

However, there were some key criticisms of these studies, which mean that the conclusions that can be drawn from them are limited.

Firstly, the moral-dilemma scenarios used in Franklin and colleagues (2009), Harrison and colleagues (2012) and Mancini and Gangemi (2015) involved decisions between the lives of several people and the lives of fewer other people. These life-changing decisions therefore involved high risks. However, previous research on decision-making has found that differences between those with and without OCD only appear in low-risk situations and that no differences are present between groups in high-risk scenarios (Foa et al., 2003). Therefore, as these studies utilised 'high-risk' scenarios, it is possible that this removed any differences that would have been found by using low risk situations, a criticism the authors noted themselves (Franklin et al., 2009). Furthering this notion, the life or death nature of the scenarios negated their relevance to *everyday* situations, where individuals with OCD are found to make different decisions, thereby rendering the results as having low ecological validity.

Furthermore, studies utilised a nomothetic, non-OCD relevant approach, and did not distinguish between OCD subtypes. This is particularly relevant with OCD as the disorder encompasses a broad range of obsessional concerns and a universal set of stimuli is unlikely to be equally relevant to all participants (Foa et al., 2003). For example, Wroe and Salkovskis (2000) found that differences in those with and without OCD were only found when considering situations that participants found most-disturbing and thus, were most related to their individual obsessional difficulties. Although Siev and colleagues (2010) contested the need for scenarios related to idiosyncratic concerns, it was still found that general decision-making did not differ

between those with and without OCD as OCD-type scenarios were necessary to reveal differences. Using general nomothetic, as opposed to semi-idiosyncratically tailored situations may mean that Franklin and colleagues (2009), Harrison and colleagues (2012) and Mancini and Gangemi (2015) overlooked potential differences that would have been found using situations relevant to participants' obsessional concerns.

It is possible that these limitations explain Franklin and colleagues' (2009) and Harrison and colleagues' (2012) finding of no group differences between the OCD and non-clinical participants. However, the findings of Mancini and Gangemi's (2015) research that individuals with OCD tend to choose inaction due to deontological guilt do not seem to be explained by these limitations. Alternatively, it may be that Franklin and colleagues (2009), Harrison and colleagues (2012) and Mancini and Gangemi (2015) stated risks explicitly when participants were making decisions, which removed the possibility of those with and without OCD interpreting different outcome severity (Pushkarskaya et al., 2015; Steketee, et al., 1998); this may explain why findings differed from those expected by Wroe and Salkovskis' (2000), when risks were not quantified. However, it is of interest whether these findings would remain when using low-risk situations relevant to individuals' obsessions.

1.6. Dual Process Theory of Moral Judgement as an alternative explanation for decision differences

A recent theory on moral reasoning provides an alternative explanation for the findings of Mancini and Gangemi (2015), and supports the notion that individuals

with OCD are less likely to act in moral dilemmas such as the canonical trolley problem. Greene and colleague's Dual Process Theory of Moral Judgement (Greene, Sommerville, Nystrom, Darley & Cohen, 2001; Greene, Nystrom, Leigh, Engell, Darley & Cohen, 2004; Greene, 2007; Greene, Morelli, Lowenberg, Nystrom & Cohen, 2008) proposes that two psychological processes affect moral reasoning and hence decision outcomes in these scenarios: cognition and emotion.

Greene (2007) suggests that cognitive processes must override an initial negative emotional reaction in decision-making scenarios, in order to rationally choose the best overall outcome. Therefore, utilitarian decisions require a level of cognitive control. Support for this notion has been provided by neuroanatomical evidence that has found utilitarian moral reasoning activates the Anterior Dorsolateral Prefrontal Cortex (associated with abstract reasoning and cognitive control (Koechlin, Ody & Kouneiher, 2003)) and the Anterior Cingulate Cortex (associated with cognitive conflict (Botvinick et al., 2001)). Furthermore, when exploring the relationship between cognitive control and moral reasoning, it was found that reducing cognitive control with a cognitive load manipulation selectively interfered with utilitarian judgements (Greene et al., 2008; Trémolière, Neys, & Bonnefon, 2012),

Conversely, this theory denotes that the intense negative affective reaction induced by a moral reasoning task evokes a sense that action is inherently wrong, regardless of the consequences. Therefore, negative emotional responding is proposed to be linked with deontological judgements. Evidence for this link is suggested by Mendez, Anderson and Shapira (2005) who found that patients with Frontotemporal Dementia (a common feature of which is emotional bluntening) are less likely to use

deontological moral reasoning; furthermore balancing a negative response using a positive mood induction task is also found to reduce deontological decisions (Valdesolo & Desteno, 2006).

There are several implications of this theory for our understanding of decision-making in OCD. OCD is found to be linked with deficits of cognitive control (Griesberg & McKay, 2003), and heightened negative affective responses (Cougle, Timpano, Sarawgi, Smith & Fitch, 2013), which according to this theory would indicate a bias towards deontological reasoning, and hence support Mancini and Gangemi's (2015) findings.

Indeed, Whitton, Henry and Grisham (2014) found that individuals with OCD made less utilitarian decisions compared with a healthy group; and found that cognitive flexibility was correlated with utilitarian decisions. However, individuals with OCD did not differ significantly in their decisions to individuals with anxiety, which may suggest that difficulties with cognitive control apply to this group as well. Furthermore, individuals with OCD were only found to make different decisions to a healthy group in 'impersonal moral dilemmas' (for example, the runaway train dilemma) and not in 'personal dilemmas' (for example, smothering a baby to save a group of people being found and killed). This outcome was not expected by the authors, as according to this theory the personal dilemmas would have induced a greater negative emotional response, and thus more difficulty overriding this with cognitive control (Greene et al., 2008). Similarly to the criticisms of Franklin, McNally and Riemann (2009), Harrison and colleagues (2012) and Mancini and Gangemi (2015), this study, and the moral reasoning literature in general, utilises high

risk and non obsession-relevant scenarios. As such, relevance to the different decisions made by those with OCD is limited.

Furthermore, a critique of the entire theory is provided by Duke and Begue (2015), who contested that rather than cognitive control determining utilitarian decisions, it may be that intact social cognition (for example, empathy) negates the ability to make utilitarian decisions. To distinguish these contrasting ideas, Duke and Begue (2015) explored the effect of alcohol on moral reasoning, again using the runaway train dilemma. As alcohol is known to impair both social cognition and higher order executive functioning, the finding that blood alcohol concentrations were positively correlated with utilitarian decisions suggested a stronger role for impaired social cognition in this decision. The authors postulated that "the evidence seems to suggest that decreased harm aversion may be a robust predictor of utilitarian preference" (Duke & Begue, 2015, p.124). Therefore, although this study did not explore individuals with OCD, the notion that individuals with the disorder experience heightened harm aversion (Steketee & Frost, 1994) may explain the non-utilitarian preference found by Mancini and Gangemi (2015), and Whitton, Henry and Grisham (2014). However, harm aversion is a concept that may be implicated by several factors including estimates of the probability of unfavourable outcomes (Carr, 1974), and aversion of potential responsibility (Menzies et al., 2000; Salkovskis, 1985; Steketee & Frost, 1994).

Research into moral psychology has received a dramatic increase in attention in recent years (Greene, 2015; Priva & Austerweil, 2015). However, literature on moral reasoning specifically in OCD is sparse and faces fundamental methodological

criticisms. Nevertheless, this area provides an exciting opportunity to gain an insight into the decisions made by those with OCD. Of primary interest to this study are the decisions made by individuals with OCD when presented with an everyday, semi-idiosyncratically tailored, obsession-relevant moral reasoning dilemma that differentiates between a utilitarian and a deontological decision, an area which has not been explored before (according to a Google Scholar and Web of Science search with terms “OCD” OR “Obsessive-Compulsive Disorder” AND “Decision” OR “Decision-making” AND “Moral” OR “Moral reasoning” with no exclusion criteria). Although the findings of Wroe and Salkovskis (2000) suggest that, due to a lack of omission bias, individuals with OCD are more likely than those without OCD to act to try and prevent harm when risks of acting are not presented, research on moral reasoning suggests that the introduction of this action resulting in other lesser harm leads to individuals with OCD being less likely to choose to act than their non-clinical counterparts (Mancini & Gangemi, 2015; Whitton, Henry & Grisham, 2014). This study therefore aimed to explore decisions made by individuals with and without OCD both when risks of acting were not presented (to replicate Wroe & Salkovskis, (2000)), and when risks of acting were introduced (to address the methodological concerns of Franklin and colleagues, (2009), Harrison and colleagues, (2012), Mancini and Gangemi (2015) and Whitton, and colleagues (2014)).

There has been continued debate within the literature regarding factors that might contribute to decision differences in those with and without OCD. Suggestions for these factors include general (Wroe & Salkovskis, 2000; Franklin et al., 2009) and personal responsibility (Franklin et al., 2009), altruistic and deontological guilt (Mancini & Gangemi, 2015), moral sensitivity (Harrison et al., 2012) lack of

cognitive control, heightened emotive responsiveness (Greene, 2008) and harm aversion (Duke & Begue, 2015). Of secondary interest to this study was an exploration of factors that influence decision differences. Particular consideration was given to whether general responsibility beliefs (as suggested by Wroe and Salkovskis, 2000, Franklin, McNally and Riemann, 2009 and the cognitive model of OCD (Salkovskis, 1985, 1999; Salkovksis et al., 1998)) are a factor in decision differences, and whether decision-specific appraisals of responsibility, immorality and guilt, influence decision differences between individuals with and without OCD.

1.7. Summary

In summary of the literature thus far, the findings that those with OCD make different decisions (Rocha et al., 2011; Sachdev & Malhi, 2005) and have differences in the neuroanatomical networks associated with decision-making (Cavedini et al., 2006; Olley et al., 2007; Sachdev & Malhi, 2005), have led to suggestions that OCD should be considered a disorder of decision-making (Sachdev & Malhi, 2005). Research supports the notion proposed by the cognitive model of OCD (Salkovskis, 1985, 1999; Salkovskis et al., 1998) that heightened responsibility beliefs contribute to these differences in decisions (Wroe & Salkovskis, 2000), and that due to these beliefs those with OCD are more likely to decide to try and reduce harm. An alternative suggestion is that those with OCD overestimate the severity of the risks of harm (Menzies et al., 2000), and this is why they are more likely to act to reduce harm. However, the finding that those with OCD are *more* likely than those without OCD to act to prevent harm has been contested by Franklin and colleagues (2009), Harrison and colleagues (2012), Mancini and Gangemi (2015) and theories and research on

moral reasoning (Greene et al., 2007; Whitton, Henry and Grisham, 2014) who conversely suggested that in moral reasoning dilemmas where action to prevent harm results in other, albeit lesser harm, there were no differences between decisions of those with and without OCD, or that those with OCD are in fact *less* likely to act to reduce harm due to potential factors of personal responsibility, the associated guilt of 'playing god', moral sensitivity, lack of cognitive control, or a heightened affective response. However, as decision-differences between those with and without OCD are suggested to only be found when considering low risk scenarios that are relevant to an individual's obsessions (Foa et al., 2003; Wroe & Salkovskis, 2000), the nomothetic, high-risk scenarios utilised in these studies means that their relevance is debated.

1.8. Aims and hypotheses

There seems to be great disparity between two areas of research. Firstly, the area of decision-making in OCD, where it is evidenced that individuals with OCD are more likely to act to prevent harm only in low-risk, everyday (Foa et al., 2003) situations relevant to their OCD (Wroe & Salkovskis, 2000). Secondly, research on moral-reasoning (where risks of acting are stated) in OCD, where scenarios utilised for research do not fit the aforementioned criteria, and so do not explore the core circumstances where such decision-making differences are documented. For brevity and distinction, throughout this thesis these two areas are referred to as the 'decision-making' and the 'moral reasoning' literature respectively.

In order to further our understanding of decision-making in OCD, it was firstly necessary to affirm the findings of the decision-making literature on which the

methodological criticisms of the moral reasoning studies are based. Therefore, this study's first aim was to investigate whether, when using low-risk, obsession-relevant scenarios, decision differences in individuals with and without OCD were indeed specific to individuals' semi-idiosyncratically tailored scenarios when risks of acting were not stated, as attested by Wroe and Salkovskis (2000).

This study secondly aimed to bridge the crevice between the areas of decision-making and moral reasoning in OCD, by exploring whether, in low-risk scenarios when risks of acting *were* presented, there was still a difference between the decisions made by individuals with and without OCD and if this differed between scenarios that were semi-idiosyncratically tailored, and scenarios that were not. As Mancini and Gangemi (2015) and Whitton, Henry and Grisham (2014) used high-risk, non-tailored scenarios (where decision-differences are not found within the decision-making literature) and found that individuals with OCD were less likely to act to prevent harm than individuals without OCD, this suggested that a similar pattern would be shown when considering low-risk, non-tailored scenarios (where decision-differences are also not suggested to be found within the decision-making literature). However, when considering low-risk scenarios when risks of acting were presented and that *were* semi-idiosyncratically tailored (the juncture between the two areas where there is a current void of research), there were contradicting suggestions regarding what would be expected. According to Wroe & Salkovskis (2000), individuals with OCD would be more likely than individuals without OCD to act in these scenarios; however, according to Greene and colleague's (2001) dual processing theory, individuals with OCD would be less likely than individuals without OCD to act in these scenarios, due to a heightened emotional response and hence greater difficulty overriding this to act

in a utilitarian manner. Both these theories suggest that for individuals with OCD there would be a difference in decisions when considering most-disturbing, compared to least-disturbing scenarios, although the direction of this suggested difference varies: Wroe and Salkovskis (2000) theorise that individuals with OCD would be more likely to act to prevent harm in their most-disturbing, compared to least-disturbing scenarios due to responsibility beliefs being activated in such scenarios; Greene contests that individuals with OCD would be less likely to act in their most-disturbing, compared to least-disturbing scenarios due to a heightened emotional response and a greater difficulty overriding this with cognitive control.

Finally, this study aimed to investigate factors that influence the differences in decisions made by those with and without OCD. Owing to a focus on responsibility within the literature on decision-making in OCD, this study aimed to explore whether general responsibility beliefs play a role in decision outcomes. According to the cognitive model of OCD (Salkovskis, 1985, 1999; Salkovskis et al., 1998, Figure 1.), the decision differences of individuals with OCD, compared to individuals without OCD, are based on heightened responsibility beliefs; as such this factor was expected to mediate decision differences. Other decision-specific judgements were also explored to assess their contributions to decisions. Of particular interest were decision-specific judgements of responsibility (Franklin et al., 2009), immorality (Harrison et al., 2012) and guilt (Mancini & Gangemi, 2015) and whether judgements if individuals did and did not act (and the difference between these) determined likelihood of deciding to act to prevent harm.

It was hoped that by enhancing the methodological rigor of OCD research within the exciting moral reasoning scene, this study would enable a clarification of decision-making in individuals with OCD. Furthermore, by exploring the factors that contribute to decision differences, the study aimed to progress current theoretical understanding of the debilitating disorder, and in turn highlight areas for clinical consideration.

Three hypotheses were born from the presented literature, and were tested by the present study. It was hypothesised that:

1. Findings would replicate previous research such that, when risks of acting were not presented, individuals with OCD, compared to individuals without OCD, would rate a higher likelihood of acting, only in their most-disturbing scenarios.

2. When risks of acting were presented, individuals with OCD would be less likely to act than individuals without OCD in their least-disturbing scenarios. Owing to conflicting research, no prediction was made regarding how likely individuals with and without OCD would be to act in their most-disturbing scenarios; however it was predicted that individuals with and without OCD would differ in their decisions in most-disturbing scenarios and that individuals with OCD would show differences in their likelihood of acting in most-disturbing, compared to least-disturbing, scenarios.

3. Individuals' general responsibility attitudes (as rated on the Responsibility Attitudes Scale), and decision-specific judgements of responsibility, immorality and guilt, would mediate the relationship between group and likelihood of action, and thus

contribute to group differences. It was also hypothesised that these factors would mediate the relationship to varying degrees, and their mediating roles would change when risks of acting were and were not presented. However, due to insufficient research comparing potential mediating factors in such scenarios, no prediction was made regarding which mediators would show a greater effect, or regarding how such mediators would be effected when risks of acting were introduced.

CHAPTER 2: METHODOLOGY

2.1. Overview

This study hoped to address three primary aims by asking individuals with and without OCD to consider a series of hypothetical scenarios involving potential harm, and a possibility to act to prevent that harm. Scenarios were relevant to typical everyday obsessional concerns, such as contamination and checking. Firstly, the study intended to explore whether, when risks of acting were not stated, there were differences between individuals with and without OCD regarding how likely they would be to act to prevent harm, hypothesising that a difference would occur only when considering scenarios that were specific to semi-idiosyncratic concerns of each individual. Secondly, of key interest to this study, was whether in similar scenarios where risks of acting *were* presented (and where acting resulted in other, lesser harm), there were differences between the decisions of individuals with and without OCD, and whether this differed according to whether scenarios were tailored to individuals' semi- idiosyncratic concerns. Thirdly, the study aimed to investigate the factors that contributed to decision differences by exploring whether general responsibility beliefs and decision-specific factors of responsibility, immorality and guilt mediated the relationship between group and likelihood of action. Of interest to this study was whether these factors contributed to the differences in decisions made by individuals with and without OCD and whether this varied when risks of acting were and were not presented.

2.2. Sample

As the present study aimed to compare decisions made by individuals with and without OCD, the sample consisted of two groups, hereafter referred to as the OCD group and the control group.

91 participants in total consented to take part in the study; however, there was a high dropout rate (*n*=36), and these participants could not be included due to the high extent of missing data. Furthermore, some participants (*n*=3) who completed participation were excluded from data analysis due to scoring over 21 on the Obsessive-Compulsive Inventory-Revised (Foa, Huppert et al., 2002), thus meeting exclusion criteria for the control group, whilst not meeting inclusion criteria for the OCD Group according to the Structured Clinical Interview for DSM-IV for Axis I Disorders (SCID-I; First et al., 1997). Figure 1 shows participants throughout the study. Potential causes and consequences of the high dropout rate will be discussed in Chapter 4.

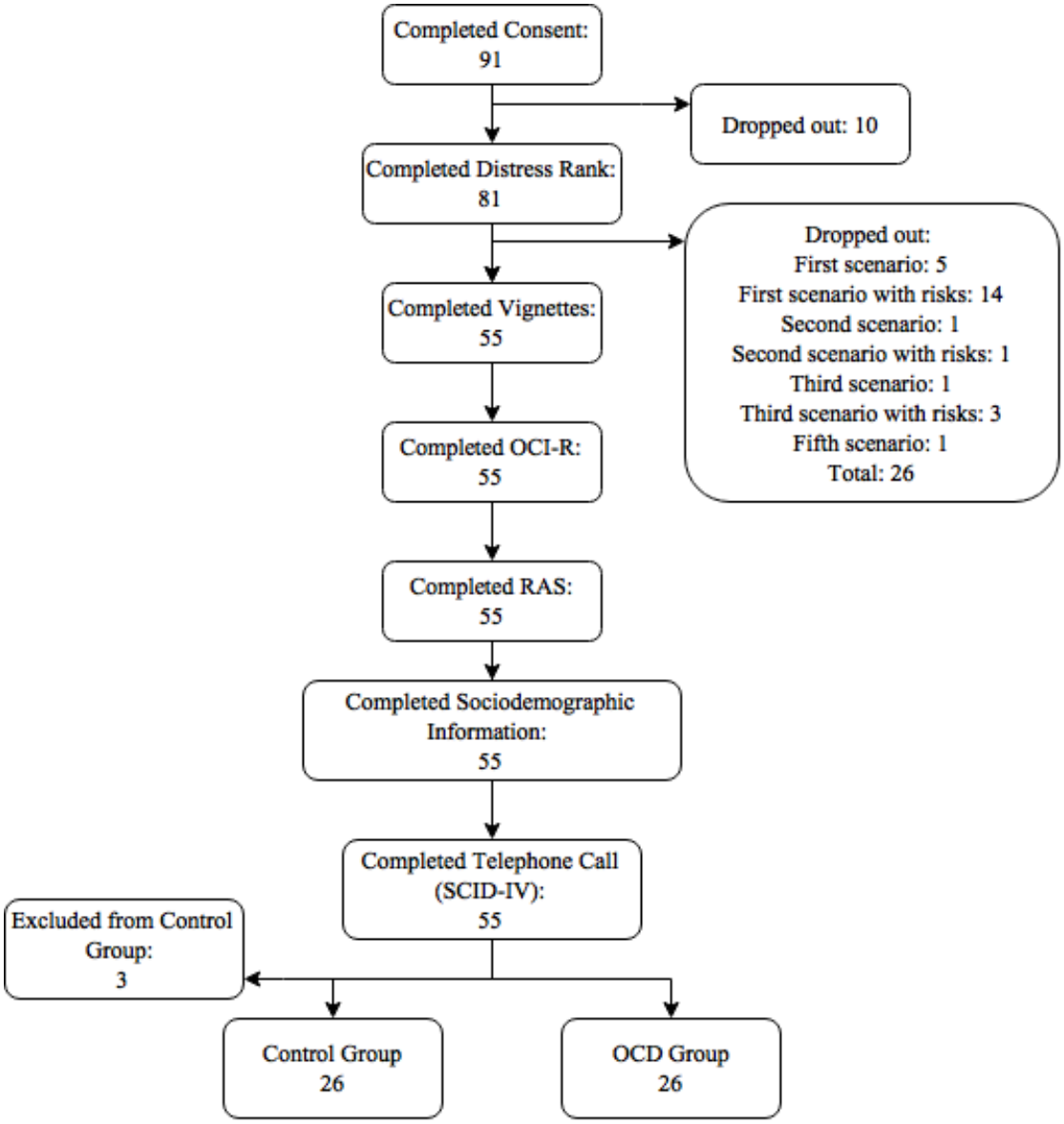


*Figure 2.*Flowchart of Participants Through the Study

2.2.1. OCD group

Twenty-six participants were recruited and assessed as meeting inclusion criteria for the OCD Group. The mean age of participants in this group was 33.23 (*SD*= 10.76); 16 (61.54%) were female and 10 (38.46%) were male; the mean OCI-R total score was 31.08 (*SD*=15.40). Inclusion criteria for the OCD group was scoring 14 or over on the Obsessive Compulsive Inventory-Revised (Foa, Huppert et al., 2002), to ensure

a sufficient level of current symptoms, and meeting criteria for a diagnosis of OCD according to the SCID-I (First et al., 1997).

2.2.2. Control group

Twenty-six participants were recruited to the control group from the general population. The mean age of participants in this group was 34 (*SD*= 16.72); 15 (57.70%) were female and 10 (38.46%) were male (1 participant did not state their gender); the mean OCI-R total score was 7.95 (*SD*=6.54). Exclusion criteria for the Control Group was meeting criteria for a diagnosis of Generalised Anxiety Disorder, Panic Disorder, Agoraphobia, Specific Phobia or Social Phobia according to the SCID-I (First et al., 1997), to minimise confounding factors (Maner et al., 2007; Miu, Heilman & Houser, 2008). Further exclusion criteria for the Control Group was exceeding a score of 21 on the Obsessive Compulsive Inventory-Revised, as this is the recommended cut-score (Foa, Huppert, et al., 2002), with scores higher than this indicating a level of obsessive-compulsive symptoms.

Exclusion criteria for overall participation in the study were: being aged under 18, as the researcher wished to ensure all participants had full capacity to consent; non-fluency in spoken and written English, as it was not possible to translate and validate measures into different languages; and meeting diagnostic criteria for Schizophrenia according to the SCID-I (First et al., 1997), to minimise confounding factors due to evidence suggesting decision-making differences in individuals with Schizophrenia (Tlach et al., 2015).

2.2.3. Power calculations

Power analysis calculations were based on Wroe and Salkovskis (2000), a similar study exploring decision-making in OCD with low-risk, OCD-relevant scenarios, with an effect size of 0.508, for a mixed model ANCOVA and with power set to 0.8 (Cohen, 1988). Prospective calculations were conducted, in collaboration with the research supervisor, according to Clark-Carter (2009).

Based on the first hypothesis, a sample size of 25 participants in each group was calculated to be sufficient to reach adequate statistical power (Cohen's d=0.80; Cohen, 1988), and so to be able to accurately detect effects when they exist (Field, 2009).

2.2.4. Recruitment methods

OCD Group

Participants for the OCD group were recruited through several routes including two London Improving Access to Psychological Therapies (IAPT) sites, online OCD support forums, and social media sites.

IAPT services. Originally launched in 2008, the IAPT programme is a large-scale initiative aimed at increasing availability of NICE-recommended psychological treatments for common mental health problems, including OCD.

Lambeth Talking Therapies Service and Camden and Islington iCOPE (both IAPT services) agreed to take part in this study. Following appropriate Research and Development approval, a list of potential participants' contact details was generated by each service and given to the researcher as a password protected data file on an

encrypted memory stick. In order to ensure upmost confidentiality, patient names were excluded from these lists. The requirements for these lists were: anyone who had received a provisional primary diagnosis of OCD, who consented to be contacted by researchers and who had been seen in the service within the last year (taken from the date the list was generated on 30th November 2015). These requirements were considered necessary to ensure participants were appropriate for the study and had fully consented to be contacted within a recent timeframe so consent given was still relevant.

Individuals on these lists were contacted with information about the present study, and directed to the study website for further information if they wished to participate.

It is important to note at this point that although these participants were recruited through IAPT services, it is possible that these participants dropped out of treatment, declined the service, or were still awaiting their treatment. However, it is also possible that some of these participants had either completed, or were in the process of receiving treatment for their OCD. Therefore, although these participants were identified due to their primary diagnosis of OCD, it is very possible that circumstances had changed since this diagnosis was assigned, and so the researcher was mindful to ensure that OCD symptoms were current for the OCD group. Furthermore, it should also be considered that those contacted through this method were patients from Lambeth, Camden and Islington, who were seeking NHS support from a psychological service, and who said they would be happy to be contacted for research purposes. Therefore, these characteristics may have biased the sample.

Online OCD Forums. Two online OCD Forums were also used to advertise this study: OCD Action and IOCDF (International OCD Foundation).

OCD Action is a national charity that was formed in 1994 by a group of volunteers and leading professionals. They "provide support and information to anybody affected by OCD" as well as raising "awareness of the disorder amongst the public and front-line healthcare workers" (OCD Action, 2016).

IOCDF (International Obsessive Compulsive Disorder Foundation) is a donor supported non-profit organisation that was founded in 1986. It aims "to increase access to effective treatment, end the stigma associated with mental health issues, and foster a community for those affected by OCD and the professionals who treat them" (IOCDF, 2016).

The present study was advertised on the websites of these organisations. A link was given to the study website for further information.

Social Media Sites. A research profile was established to advertise the study to a large population using social media sites such as Facebook and Twitter. OCD support groups on these sites also advertised the study by sharing the study information and website link.

Again, it is important to note that all methods used to recruit for the OCD group targeted individuals who self-identified as experiencing OCD, and were actively seeking support whether this was NHS support, support sites or support groups on

social media. Therefore, the sample may not be representative of those experiencing OCD who did not identify themselves as experiencing symptoms of the disorder, or who were not actively seeking support.

Control group

The study's non-clinical participants were recruited through social media and word of mouth.

Through each recruitment route, all potential participants received the same information regarding the study (Appendix A).

In the advertising material for the study, prospective participants were informed that all participants would be entered into a prize draw (with a first prize of £50 and two runner-up prizes of £25) following completion of the study, as an incentive to take part and as a token of appreciation for their time. This motivating factor may also have biased who participated in the study.

2.2.5. Ethical considerations

Participation throughout the study was voluntary and required informed and active consent, as individuals opted in. Full consent was required prior to beginning the first element of the study, the online questionnaire, and consent could be withdrawn at any point before, during or after participation.

Confidentiality was given great consideration throughout; participants were informed that only the Chief Investigator and Research Supervisor had access to their data, and that information would not affect their medical records or clinical care in any way. To ensure confidentiality, participants were asked to allocate themselves an anonymous ID code, which would be used to identify them throughout the study. Study data was stored on a password-protected file on an encrypted memory stick, to maximise physical security.

The emotional wellbeing of participants was also carefully considered, and as there was a possibility that the moral-dilemma vignettes evoked uncomfortable feelings, attempts were made to ensure that participants were not affected negatively by their involvement in the study. For example, in the information given prior to participation, details of OCD support sites OCD-UK and OCD Action were given, along with contact details of the Samaritans, and of the researcher. Participants were encouraged to contact the researcher at any point if they felt distressed as a result of the study. Furthermore, during the telephone component of the study, all participants were asked how they found completing the online questionnaire and whether it caused them any distress or discomfort to ensure that their wellbeing was actively considered.

This research study was approved by Queen Square Research Ethics Committee (Reference: 15/LO/1150) in September 2015 (Appendix Bi) and a subsequent amendment was approved in November 2015 (Appendix Bii). Approval was also granted by the South London and Maudsley Research and Development Committee for use of Lambeth IAPT as a Participant Identification Centre (Appendix C), and Camden and Islington Research and Development Committee, for use of Camden and

Islington IAPT as a Participant Identification Centre (Appendix D). Further approval was granted by Royal Holloway University of London Ethics Committee (Appendix E).

2.3. Measures

2.3.1. Vignettes

As the author was unable to find appropriate vignettes to address the main research aim (using a Google Scholar and Web of Science search with terms "Moral" OR "Moral reasoning" AND "Everyday" OR "Low risk" OR "OCD" OR "Obsessive-Compulsive Disorder" OR "Decision" OR "Decision-making" with no exclusion criteria), with the desired format of the runaway train problem and the necessary low risk, OCD-relevant content, vignettes were developed and piloted to meet this need.

Vignettes were based on the format of Franklin and colleagues (2009), who used the philosophical dilemma 'the canonical trolley problem' as their inspiration. This dilemma was presented as follows:

"You are a bystander watching a runaway train with broken brakes. The train is headed toward five people working on the track. On a connecting track only one person is working. The train will kill whoever is in its way.

You stand next to a switch that allows you to change the track the train is on. Should you keep the train on the track headed for five people or change it to the track headed for one person?" (Franklin et al., 2009, p575).

Franklin and colleagues (2009) designed similar vignettes, where participants were asked to decide between two courses of action: in the first, utilitarian option, a participant's action directly kills one human being; in the second, alternative option, a participant's failure to act results in more deaths than the first option. This format was used to assess whether participants with OCD decided to act according to utilitarian principles (linked to concern with *global* responsibility), or whether they decide to abstain from acting (linked to concern with *personal* responsibility and a desire to avoid assuming this through acting). Similar dilemmas were also used by Mancini and Gangemi (2015), and Whitton and colleagues (2014).

Although this format successfully created a decision-making scenario that would differentiate decisions made by global responsibility/utilitarian guilt and personal responsibility/deontological guilt, as noted in Chapter 1 the content of the scenarios received criticism due to its high risk, nomothetic nature, factors which are found to preclude differences in decisions in individuals with and without OCD (Foa et al., 2003; Wroe & Salkovskis, 2000).

Wroe and Salkovskis (2000), although exploring a different research aim, used and validated vignettes that address the criticisms of Franklin's: they used low-risk, everyday scenarios relevant to common concerns of individuals with OCD. For example, one vignette used stated:

"You and several other people are preparing food for an office party. Peter and you have arrived a little early so begin the preparation. While preparing a different dish, you see out of the corner of your eye that Peter has dropped some crisps on the floor where he is standing. He picks up the crisps and puts them back. Suddenly the

thought pops into your head, "What if the crisps are now contaminated and someone gets ill?""(Wroe & Salkovskis, 2000, p.1148).

Importantly, Wroe and Salkovkis' (2000) vignettes appealed to a range of obsessional concerns including OCD subtypes of contamination, checking and causing harm.

Therefore, for the present study, the low-risk and OCD-relevant content of Wroe and Salkovskis' (2000) vignettes were adapted to the structure and format of Franklin's. Each vignette was presented twice. Firstly, it was presented with the option to reduce harm, without stating the risks of doing this:

You and several other people are preparing food for an office party. Peter and you have arrived a little early so begin the preparation. While putting the food out, you see out of the corner of your eye that Peter has dropped some crisps on the floor where he is standing. He picks up the crisps and puts them back. Suddenly the thought pops into your head, " What if the crisps are now contaminated and someone gets ill?" You could move the crisps away from the main party area.

Therefore, this first presentation was very close to the vignettes used in Wroe and Salkovskis' (2000) study and was intended to address the first hypothesis and affirm that results were similar to those found in this previous study: that individuals with OCD were more likely to act to attempt to prevent harm than individuals without OCD only in their most-disturbing scenarios.

As can be seen above, and again akin to Wroe and Salkovskis (2000), in each vignette

an intrusive thought was also presented. This was considered necessary in order to ensure that both groups were made equally aware of harm. Research suggests that individuals with OCD may be more likely experience intrusive thoughts in their obsession-relevant scenarios (Wroe, Salkovskis & Richards, 2000) and hence to have an increased internal awareness of harm. Therefore, in an attempt to control for such differences, intrusive thoughts were presented to all participants.

Secondly, the risks of acting were additionally presented such that acting was the utilitarian option (causing other, lesser, harm):

You then realise that if you move the crisps, although <u>most people</u> at the party will not eat them and so will not be at risk of becoming ill, you would have to move the crisps to a quieter area of the party, and would therefore risk <u>fewer other people</u> eating them and becoming ill.

This second presentation was intended to address the second hypothesis and hence the methodological criticisms of Franklin and colleagues (2009), Mancini and Gangemi (2015), and Whitton and colleagues (2014) by exploring the decisions made by individuals with and without OCD in such low-risk, OCD-relevant moral-dilemma scenarios, and whether these decisions differed depending on whether these were semi-idiosyncratically tailored or not.

2.3.2. Disturbance rank

Prior to seeing the vignettes, participants were asked to rank the scenarios to be

presented in order from most- to least-disturbing. As the first two hypotheses focused on a comparison between scenarios that were and were not semi-idiosyncratically tailored, this disturbance rank allowed the researcher to identify participants' semi-idiosyncratic concerns (by using their most-disturbing ranked scenario) and compare these to non-idiosyncratic concerns (by using their least-disturbing ranked scenario). Alternative methods were considered for identifying semi-idiosyncratic OCD concerns, such as using subtype scores on the OCI-R, or assessing for this during the SCID-I. However, it was considered most pertinent to the study to ask participants to rank vignettes directly. In previous research, (Wroe & Salkovskis, 2000), semi-idiosyncratic obsessional concerns were identified by asking participants to rate how disturbed they felt in response to each vignette on a scale from 1 to 10, and then using the highest and lowest scoring vignettes for comparisons during analyses. However, a rank rating was considered more parsimonious, and negated the risk of participants rating vignettes equally.

2.3.3. Likelihood of acting and judgement ratings

Following each vignette presentation and akin to Wroe and Salkovskis (2000), participants were asked about their likelihood of acting and about their associated feelings of responsibility, immorality and guilt if they had and had not acted. These decision and judgement ratings were on a likert scale from 1-10.

Likelihood of acting ratings were used synonymously with Wroe and Salkovskis (2000) and Franklin, McNally and Riemann's (2009) study, to assess whether decisions differed between groups and conditions.

Although Wroe and Salkovskis (2000) used judgement ratings as outcomes to explore how variations in vignettes affected judgements, the present study intended to use these judgements ratings as possible explanatory factors for decisions made. As for each scenario the participant was asked for their feelings of responsibility, immorality and guilt if they had and had not acted, the present study was interested in whether the difference between participants' judgements if they had and had not acted, influenced decisions made. In order to do this, a new variable was created during analysis that computed the difference between judgement ratings if the participant had and had not acted in each scenario. For this variable, low values denote little difference between participants' judgements if they had and had not acted; high values denote large differences in judgements. Positive values indicate that participants would have felt more responsible/immoral/guilty if they did not act, negative values indicate that participants would have felt more responsible if they acted.

These judgement difference ratings were used to assess whether decision-specific judgements mediated the relationship between group and likelihood of action.

2.3.4. Pilot

Vignettes were piloted prior to use with five individuals (four who met criteria for the control group; one who met criteria for the OCD group). This was considered necessary in an attempt to provide some validation for the second part of the vignettes, to ensure that floor and ceiling effects were minimized, and to ensure sensitivity to individual differences. For example, it was necessary that the scenarios were pitched at an appropriate level to minimize floor or ceiling effects, and the stated risks of acting were sufficient to ensure the scenarios were akin to those within the moral-

reasoning literature; this was found to be the case. Furthermore, it was important that individuals' most- and least-disturbing scenarios showed differences in their responses in order to affirm that questions were sensitive enough to identify differences; again this was found to be the case.

Following feedback obtained through this process, several changes were made: Originally, there were intended to be eight vignettes, two tailored to each of the OCD subtypes of checking, contamination, and causing harm, and two control vignettes (decision-making dilemmas in the same format but that were not targeted towards any OCD subtype). However, piloting revealed that the number of vignettes used was considered to be too long and time-consuming for participants. Therefore, the number of vignettes was reduced to five (1x contamination, 1x checking, 1x control and 2x causing harm). Two 'causing harm' vignettes were retained as, during piloting, these were selected as most-disturbing scenarios most frequently.

In the original questionnaire, following each vignette, the intention was to ask participants about their likelihood of action and feelings of responsibility, immorality, worry, cause and blame, as these were the outcomes recorded by Wroe and Salkovskis (2000). However, following piloting, 'worry' and 'cause' were removed as judgements, as a way of reducing the questionnaire length, and as they were considered superfluous to the study's aims and hypotheses. Furthermore, following feedback, the 'blame' judgement was renamed 'guilt', which was considered clearer by participants. It was also hoped that this change from 'blame' to 'guilt' would allow for an exploration of the altruistic/deontological guilt described by Mancini and Gangemi (2015), and consideration of whether these principles differed from the

general/personal responsibility described by Franklin and colleagues (2009).

Although a pilot was conducted to gain feedback on vignettes, it was not possible to provide validation for such vignettes. Therefore, as the outcomes for this study (likelihood of acting and judgement ratings) are based on these vignettes, extreme caution should be taken when drawing conclusions from findings.

2.3.5. OCD measures

In order to ensure that the study was comparing the decisions of those with OCD to those without OCD, it was necessary to ascertain whether individuals identifying themselves as having OCD met threshold for the disorder, and whether those self-identifying as not suffering from OCD indeed were below this threshold. This was considered particularly pertinent as OCD is often trivialised within the media (Pavelko & Myrick, 2015).

Therefore, in order to ensure participants met criteria for, and were allocated to the appropriate groups (OCD or control) it was necessary to screen for symptoms of OCD. Despite the frequent use of self-report measures as screening tools within clinical and research settings, concerns have been raised about reliance on this method alone. For example, when using self-report measures there is the possibility for varying interpretations of scaled response choices, a greater chance of response bias, and for individuals with symptoms in one specific area, symptoms or impairment may be underestimated (Grabill et al., 2008). Furthermore, the use of self-report measures may preclude accurate responses for individuals with language or reading difficulties.

Discrepancies between self-report and clinician-administered measures have been found for OCD (Federici et al., 2010). Therefore, it was considered that both a self-report and a clinician-administered measure were required, to address these possible discrepancies.

Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I)

The SCID-I (First et al., 1997) was chosen as a clinician administered measure to ensure participants met diagnostic threshold for OCD, and hence inclusion criteria for the OCD group. The SCID-I is a semi-structured clinician-administered interview developed for research purposes and to diagnose Axis I disorders. The output of the SCID-I is the presence or absence of a disorder according to the DSM-IV criteria, both for current episodes and for lifetime occurrence.

The SCID-I shows superior validity for determining psychiatric diagnoses when compared to a standard clinical interview according to the "LEAD" standard (Basco et al., 2000; Kranzler et al., 1996). The LEAD standard involves conducting a longitudinal assessment (L), by expert diagnosticians (E) using all data (AD) that are available regarding the client, for example family informants, medical records, and clinical observations (First, 2014). As such, the SCID has been used by some as the gold standard in determining clinical diagnoses (Shear et al., 2000; Steiner et al., 1995). For OCD specifically, reliability studies report kappa levels of .59 (Williams et al., 1992), .65 (Lobbestael, Leurgans & Arntz, 2011) and .70 (Zanarini & Frankenburg, 2000), showing fair reliability.

Therefore the OCD module of the SCID-I was used in the present study to identify the presence of OCD according to the DSM-IV, and hence to ensure appropriate allocation of participants to the OCD or control group. The author was trained by the research supervisor to conduct the SCID-I.

Obsessive Compulsive Inventory- Revised (OCI-R)

The OCI-R (Foa, Huppert et al., 2002) was chosen as a self-report counterpart to the clinician-administered SCID-I. The OCI-R is a more recent development of the Obsessive Compulsive Inventory (OCI), a widely renowned comprehensive self-report measure that asks the individual to rate the frequency and associated distress of symptoms on likert-type scales. Similarly to its predecessor, the OCI-R requires no technical expertise to administer and demonstrates good psychometric properties in clinical and normative samples. In an OCD sample the OCI-R has been found to show: good internal consistency (α=.82 to .90) for each of the seven subscales of OCD it assesses, and α=.81 for the total score; good two week test-retest reliability, and good convergent validity (r_s=.53; .85) with the Y-BOCS (Goodman et al., 1989) and the MOCI (Hodgson & Rachman, 1977) respectively (Foa, Huppert et al., 2002). In a college sample the OCI-R showed good to excellent test-retest reliability for full scale and subscale scores (r=.54 to.77), high internal consistency (α=.88) and moderate to excellent convergent validity with other measures of OCD (Hajcak, Huppert, Simons & Foa, 2004).

Overall the OCI-R correlates very strongly with the OCI (r_s=.98) (Foa, Huppert et al., 2002), but also shows some advantageous developments over its predecessor. For

example, it has been shortened from 42 items to 18, allowing it to be less time consuming, only taking a couple of minutes, and thus more accessible for participants. Additionally, Foa, Huppert and colleagues (2002) calculated an optimal cut-off score for the OCI-R. Using receiver operating characteristics (ROC) analysis, it was found that distinguishing OCD patients and non-anxious controls by a cut-off score of 21, gave a sensitivity score of 65.6% and a specificity score of 63.9%. However, different optimal cut-scores have been reported in other studies. For example, Abramowitz and Deacon (2006) found a cut-score of 14 most effective for distinguishing OCD patients from a mixed sample of patients with anxiety disorders. Gonner, Leonhart and Ecker (2008) alternatively reported that cut-scores of 11, 12 and 14 showed highest discriminative power for patients with anxiety disorders without depressive disorders positing that, "An OCD patient with elevated scores exclusively on the Hoarding subscale, for example, might show a lower OCI-R total score than a depressive patient with ordering and checking symptoms below the diagnostic threshold" (p.747). Therefore, it is suggested that when utilizing the OCI-R as a screening tool, a lower, more liberal cut-score may be advantageous to reduce false negatives, provided the researcher is mindful of a higher risk of false-positives (Williams, Davis, Thibodeau & Bach, 2013).

Therefore, the OCI-R, which was freely accessed online, was utilised as a short tool to screen participants for the OCD or control group and to ensure differences in groups. According to the findings of Abramowitz and Deacon (2006) and Gonner, and colleagues (2008) a minimum score of 14 was used as inclusion criteria for the OCD group in the present study. Although this cut-score is relatively low, it was considered appropriate, as the SCID-I would provide diagnostic value to exclude false positives.

A score of 21 or over on the OCI-R was used as exclusion criteria for the control group.

2.3.6. Screening for co-morbid diagnoses

The SCID-I was also used as an assessment tool to ensure that participants in the control group did not meet threshold for potentially confounding diagnoses of GAD, Social Phobia, Specific Phobia, Panic Disorder, or Agoraphobia. For the OCD group, these were also assessed. Due to the high co-morbidity between OCD and other anxiety disorders (Ruscio, Stein, Chiu & Kessler, 2010) it was not considered appropriate to exclude participants from this group due to co-morbid anxiety disorders. However, these were assessed with this group to ensure that OCD was the primary diagnosis. As exclusion criterion for the study, the SCID-I was also used to ensure no participant met diagnostic threshold for Schizophrenia.

The SCID-I shows good psychometric properties for these disorders, including reliability scores ranging from fair to good: for GAD, .44 (Zanarini et al.,2000) to .95 (Skre, Onstad, Torgersen & Kringlen, 1991); for Panic Disorder, .65 (Zanarini et al., 2000) to .88 (Zanarini et al., 2001); for Social Phobia, .47 (Williams et al., 1992) to .86 (Zanarini et al., 2001); for Specific Phobia, .83 (Lobbestael et al., 2010); for Agoraphobia, .60 (Lobbestael et al., 2010); and for Schizophrenia .65 (Williams et al., 1992) to .94 (Skre et al., 1991). Furthermore, the SCID I's superior validity over standard clinical interviews according to the LEAD standard, also applies to these diagnoses (Basco et al., 2000).

The research version of the SCID-I (SCID-I-RV) was purchased online; this gave permission for as many copies to be made as necessary for educational and non-profit research purposes. As advised by First (2014), the SCID-I-RV was then customised to include the relevant modules (OCD, GAD, Social Phobia, Specific Phobia, Panic Disorder, Agoraphobia and Schizophrenia) to the study. This customized SCID-I was conducted over the telephone to ensure convenience for the participant, and took an average of 5 minutes for the control group, and 20 minutes for the OCD group

2.3.7. Responsibility Attitudes Scale (RAS)

As the second hypothesis aimed to explore the role of general responsibility beliefs in decisions made, it was necessary to measure responsibility. The Responsibility Attitude Scale (RAS) was used for this purpose (Salkovskis et al., 2000). This measure is a 26-item questionnaire based on the format of the Dysfunctional Attitude Scale (Beck, Brown, Steer & Weissman, 1991) that assesses general beliefs about responsibility. For the RAS, participants are asked to state the extent to which a series of statements generally applies to them on a seven point scale from totally agree to totally disagree. Total scores range from 26 (high responsibility) to 182 (low responsibility). Validation studies of the RAS report a high internal consistency coefficient of 0.94 and test-retest reliability coefficient of 0.84 (Kabirnezhad, Mahmoud & Sharifi, 2010). Furthermore, the concurrent and criterion validities are shown to be satisfying (Salkovskis et al., 2000). The RAS was freely accessed online.

The RAS scores were used to explore if general responsibility attitudes mediated the relationship between group and likelihood of action.

2.3.8. Sociodemographics

There is research to suggest that participant characteristics influence moral judgements to some extent (Christensen & Gomila, 2012). For example, demographic variables including age (Wang, 1996), gender (Fumagalli, et al., 2010), culture (Singhapakdi, Vitell & Leelakulthanit, 1994) and educational background (Shaub, 1994), have been linked to differences in moral decisions. Although some research also contradicts these findings (Hauser, 2007) it is suggested that the consideration of such sociodemographic variables is necessary to ensure that any differences found, are not attributable to these confounding factors.

Therefore, all participants were asked to provide their age, gender, ethnic background and highest level of educational attainment, to establish that the OCD and control groups were comparable in these areas, and to ensure confounding factors were minimised, thereby increasing the probability that observed relationships were a consequence of the variables being investigated (Prince, 2003). Identified factors that significantly differed between groups would be controlled for during analyses.

2.4. Procedure

Once recruited, participants were directed to the study website, where reading the participant information sheet and completing the consent form were pre-requisites for accessing the online questionnaire.

2.4.1. Participant information sheet

In the participant information sheet (Appendix F), participants were given an overview of the study's procedure, and the exclusion criteria (being aged under 18, having a diagnosis of Schizophrenia, and being non-English speaking). They were also given the contact details for the researcher and advised to use these if they had any questions or if they felt distressed at any point during their participation in the study. Furthermore, at the end of the participant information sheet, details of online support forums OCD-UK and OCD Action were given with the telephone number for the Samaritans; it was hoped that giving these details at the outset would ensure participants were aware of options of support throughout the entirety of their participation.

2.4.2. Consent form

The consent form (Appendix G) then asked participants to verify that they had read and understood the participant information, that they agreed with the statements specified (for example, that they were aware they could withdraw from the study at any point and that they were aware they could contact the research team at any point), and that they were 18 years old or over and consented to taking part in the study.

All participants were also asked to inform the researcher if they would prefer to complete the questionnaire on paper, or if they would be unable to speak on the telephone, as in these instances alternative arrangements could be made.

2.4.3. Online questionnaire

The Royal Holloway University of London Psychology Online Survey (Select Survey Advanced v8.6.4) System (2009) was utilised for administration of the online questionnaire. Although some measures used (OCI-R and RAS) were originally published as paper-and-pencil questionnaires, these were recreated in online format for the convenience of participants and as the equivalence of OCD measures across administration methods (paper and online) has been documented (Coles, Cook & Blake, 2007). The full questionnaire can be seen in Appendices F to M; Appendix N shows screenshots of three pages of the online format, to demonstrate how this would appear to the participant.

Participants were first asked to rank the upcoming vignettes from most- to least-disturbing (Appendix H). Following this, all five vignettes (each with two conditions: risks of acting not presented and risks of acting presented) were given; participants were asked to read each condition of the vignette and rate how likely they would be to act to try and prevent harm, and how responsible, immoral and guilty they would feel if they had and had not acted, on likert scales from 1 to 10 (Appendix I). They were then asked to complete the OCI-R (Appendix J), the RAS (Appendix K) and sociodemographic information (Appendix L).

Throughout the online questionnaire, participants could choose to leave questions blank, or to end their participation in the study by exiting the internet browser at any time before pressing ‘submit’ at the end of the questionnaire.

At the end of the online questionnaire, participants were asked to give a telephone number that they would be happy to be contacted on to complete the second part of the study. They were also asked to specify convenient days and times for them to complete this telephone call, and asked if they would be happy to receive a text message, to confirm the date and time of this call, and a voicemail message if they were unavailable to answer at the time they were called. They were also asked about how they would like to be referred to during this telephone call, and informed that if they did not state otherwise, they would be addressed using their anonymous ID code (Appendix M).

Online questionnaires took on average 30 minutes for the OCD Group and 25 minutes for the control group.

2.4.4. Telephone call

Participants were then called at a time and day that they had specified as convenient. If the participant consented to receive text messages, a text message was sent to confirm when this call would be.

During this telephone call, participants were thanked for their participation and the purpose of the call was explained: to ask how they found the questionnaire, to ask a few more questions to ensure that they were assigned to the correct research group, and to tell them a bit more about the study.

All participants were then asked how they found completing the questionnaire and whether it caused them distress at any point. This was used as an opportunity to ensure that the experience of completing the questionnaire did not negatively affect any participant or if it did cause distress, that they were receiving adequate support.

Following this, it was explained to participants that in order to ensure that they were assigned to the most appropriate group for the study, it would be helpful to ask them a few questions about symptoms of OCD and anxiety (using the SCID-I) to see if their answers were in line with what would be expected from someone with OCD or another anxiety disorder. Participants were assured of the research study's confidentiality policy: that their answers would only be used for the purposes of the study and that their answers would not go on their medical records or affect their future care in any way. They were also informed that their answers would not constitute a diagnosis. Participants were asked if they would like to know the outcome of this questionnaire once it was complete.

The SCID-I was then completed, assessing for OCD, GAD, Social Phobia, Specific Phobia, Panic Disorder, Agoraphobia, and Schizophrenia (Appendix O).

Following this, if participants had asked to receive the results of the SCID-I, these were relayed to them in a collaborative and supportive way. For example, they were asked about their expectations before hand, told about why their answers may have met certain criteria, asked about their thoughts on the results, and then the implications of such results were discussed with them. If necessary, participants were advised to speak with their GP or refer themselves to their local IAPT service if this seemed appropriate, and given local support resources including OCD- UK, and OCD Action. If participants asked not to be told of the results of the SCID-I their wishes were respected.

Participants were then given more information about the study's aims (Appendix P), and were informed about the prize draw and the option to receive a summary of the results once these were collated. If participants were happy to give these, contact details were taken so that they could receive a summary of the results and be informed of the winner of the prize draw; these contact details were stored on an encrypted memory stick to ensure confidentiality, and were kept separately from questionnaire responses. They were asked if they had any questions, and were given the researcher's contact details for future reference. All participants were then thanked for their participation in the research study and the telephone call was ended.

Telephone calls took approximately 15 minutes for the control group and 30 minutes for the OCD group.

2.4.5. Following participation

In April 2016, participants who requested it received a summary of the results of the study (Appendix Q). This was also sent to Lambeth IAPT, Camden and Islington iCOPE, the R&D Departments who granted ethical approval, and was circulated via the social media forums used for recruitment.

Also in April 2016, the raffle was drawn and the winner and two runners up were given their prizes.

2.4.6. Extracting the data

Data from the online questionnaire was exported directly to SPSS from the RHUL system; information from the telephone call was additionally entered by the researcher.

CHAPTER 3: RESULTS

Data were analysed using IBM SPSS Statistics Software Version 21.0 (IBM Corp., 2012) with alpha levels set at $p<0.05$. All p values are reported to two decimal places, except values less than .01, which are reported to three decimal places.

For ease of reading, Table 1 describes the variables considered in this thesis, the scales for such variables, and the abbreviated terms for these variables that are also used throughout this chapter.

Table 1. *Variables, Abbreviated Terms for Variables, and Scales of Variables.*

Abbreviated term	Variable	Scale
MD No Risk Likelihood	Likelihood of acting in most-disturbing scenarios with no risks of acting presented	0 (definitely would not act) to 10 (definitely would act)
MD Risk Likelihood	Likelihood of acting in most-disturbing scenarios with risks of acting presented	
LD No Risk Likelihood	Likelihood of acting in least-disturbing scenarios with no risks of acting presented	
LD Risk Likelihood	Likelihood of acting in least-disturbing scenarios with risks of acting presented	
RAS Total	Total score on Responsibility Attitudes Scale	26 (high responsibility) to 182 (low responsibility)
Responsibility Difference MD No Risk	Difference between responsibility judgements if acting and not acting in most-disturbing scenarios with no risks presented	-10 (would feel not at all responsible if did not act, and totally responsible if did act), 0 (no difference between responsibility judgement if did and did not act), 10 (would feel totally responsible if did not act and not at all responsible if did act)
Responsibility Difference MD Risk	Difference between responsibility judgements if acting and not acting in most-disturbing scenarios with risks presented	
Responsibility Difference LD No Risk	Difference between responsibility judgements if acting and not acting in least-disturbing scenarios with no risks presented	
Responsibility Difference LD Risk	Difference between responsibility judgements if acting and not acting in least-disturbing scenarios with risks presented	

Immorality Difference MD No Risk	Difference between immorality judgements if acting and not acting in most-disturbing scenarios with no risks presented	-10 (would feel not at all immoral if did not act, and totally immoral if did act), 0 (no difference between immorality judgement if did and did not act), 10 (would feel totally immoral if did not act and not at all immoral if did act)
Immorality Difference MD Risk	Difference between immorality judgements if acting and not acting in most-disturbing scenarios with risks presented	
Immorality Difference LD No Risk	Difference between immorality judgements if acting and not acting in least-disturbing scenarios with no risks presented	
Immorality Difference LD Risk	Difference between immorality judgements if acting and not acting in least-disturbing scenarios with risks presented	
Guilty Difference MD No Risk	Difference between guilt judgements if acting and not acting in most-disturbing scenarios with no risks presented	-10 (would feel not at all guilty if did not act, and totally guilty if did act), 0 (no difference between guilt judgement if did and did not act), 10 (would feel totally guilty if did not act and not at all guilty if did act)
Guilt Difference MD Risk	Difference between guilt judgements if acting and not acting in most-disturbing scenarios with risks presented	
Guilt Difference LD No Risk	Difference between guilt judgements if acting and not acting in least-disturbing scenarios with no risks presented	
Guilt Difference LD Risk	Difference between guilt judgements if acting and not acting in least-disturbing scenarios with risks presented	

3.1. Preparatory data analysis

Prior to the main analyses, preparatory data analyses were conducted to locate and correct problems with the data, and to ensure that assumptions of the main analyses were met. As data were grouped during planned analyses, preparatory analyses were conducted separately according to group (OCD/control) (Tabachnick & Fidell, 2013).

3.1.1. Missing data

One participant did not complete the sociodemographic information, therefore resulting in some missing data. Furthermore, it was not possible to obtain SCID-I diagnostic information for one participant, who declined to complete the measure. However, it was considered that, owing to this participants' high OCI-R score, and as they declined to complete the measure due to anxiety associated with OCD, this participant could still be included in the dataset.

For data items missing from psychometric questionnaires (OCI-R and RAS), an MCAR (Missing Completely At Random) test (Heitjan, 1997) found that data values were missing at random, Little's MCAR test: χ^2 (51) =36.04, p=.94. Further investigations regarding missing data are required when items have over 5% of their data missing (Schafer, 1999). As no items met this threshold, no further investigations were conducted and missing data were input using the EM (Expectation-Maximisation) algorithm, to preserve relationships with other variables (McKnight, McKnight, Sidani & Figueredo, 2007).

There were no missing data items from the vignette measures (likelihood of action and judgements ratings in most-disturbing and least-disturbing scenarios, when risks of acting were and were not presented).

3.1.2. Outlier analysis

Outliers represent data values that deviate from other observations. It is important that these are identified as they can lead to inflated error rates, biased statistical estimates and erroneous results (Field, 2009). Outliers were assessed by exploring the variability of standardized *z-scores*: *z-score* values between -3.29 and 3.29 are considered to be within acceptable limits (Tabachnick & Fidell, 2013). No outliers were identified. Table 2 shows minimum and maximum *z-scores*, according to group.

Table 2.

Minimum and Maximum Standardised Z-Scores

	OCD Group (*n*=26)		Control Group (*n*=26)	
Variable	*Min.*	*Max.*	*Min.*	*Max.*
MD No Risk Likelihood	-3.18	0.52	-2.19	1.01
MD Risk Likelihood	-3.07	0.90	-1.68	1.63
LD No Risk Likelihood	-1.55	0.93	-1.79	1.29
LD Risk Likelihood	-1.49	1.15	-1.34	1.14
RAS Total	-1.26	1.72	-2.16	1.80
Responsibility Difference MD No Risk	-1.62	1.12	-2.15	1.26
Responsibility Difference MD Risk	-0.99	2.15	-2.02	2.22
Responsibility Difference LD No Risk	-1.50	2.18	-1.25	2.08
Responsibility Difference LD Risk	-3.11	2.43	-1.91	2.52
Immorality Difference MD No Risk	-2.20	0.96	-1.13	1.84
Immorality Difference MD Risk	-1.60	1.82	-1.54	2.07
Immorality Difference LD No Risk	-1.43	1.56	-1.45	2.25
Immorality Difference LD Risk	-1.63	2.20	-2.02	2.39
Guilty Difference MD No Risk	-1.61	1.06	-1.54	1.56
Guilt Difference MD Risk	-1.33	2.37	-1.59	2.34
Guilt Difference LD No Risk	-1.32	2.14	-1.36	2.29
Guilt Difference LD Risk	-3.17	2.54	-2.19	2.64

3.1.3. Normality of data

Normality of data, that is, a distribution that is known to have certain properties such as symmetry about the mean, and a well defined shape and height (Field, 2009; Tabachnick & Fiddell, 2013), is a prerequisite for parametric data analysis. Furthermore, data that deviate from normal distributions result in less robust statistical inferences (Bradley, 1982).

Normality of data was assessed using histograms, skewness and kurtosis *z-scores*, and the Kolmogorov-Smirnov test (see Tables 3 and 4). As can be seen from Table 3, several variables showed significant positive and negative skewness, and positive and negative kurtosis, as the *z-scores* exceeded 1.96 ($p<.05$). Furthermore, Table 4 shows that for the majority of variables, *K-S* tests were significant, indicating a significant deviation from the normal distribution.

Table 3.

Skewness and Kurtosis Z-Scores

	OCD group (*n*=26)		Control Group (*n*=26)	
	Skewness	Kurtosis	Skewness	Kurtosis
Variable	*z-score*	*z-score*	*z-score*	*z-score*
MD No Risk Likelihood	-4.36***	3.89***	-1.74	-0.72
MD Risk Likelihood	-3.68**	3.17**	-0.15	-1.24
LD No Risk Likelihood	-1.43	-1.36	-1.15	-1.25
LD Risk Likelihood	-1.14	-1.45	-0.39	-2.05*
RAS Total	-1.02	-1.46	-0.79	-0.04
Responsibility Difference MD No Risk	-1.01	-1.33	-0.40	-1.00
Responsibility Difference MD Risk	2.69**	-0.01	0.74	0.08
Responsibility Difference LD No Risk	1.18	-0.86	2.10*	0.14
Responsibility Difference LD Risk	-0.88	4.50***	1.31	1.65
Immorality Difference MD No Risk	-1.50	-0.90	0.64	-1.50
Immorality Difference MD Risk	1.00	-0.91	1.75	0.03
Immorality Difference LD No Risk	0.50	-1.65	2.81**	1.12
Immorality Difference LD Risk	2.30*	0.97	1.52	0.55
Guilt Difference MD No Risk	-1.01	-1.41	0.44	-1.52
Guilt Difference MD Risk	2.54*	0.19	1.63	0.34
Guilt Difference LD No Risk	1.16	-0.81	2.06*	0.56
Guilt Difference LD Risk	-1.04	5.07***	2.16*	2.37**

Note: ****p*<.001; ***p*<.01; **p*<.05

Table 4.

Kolmogorov-Smirnov Tests of Normality

	OCD Group (*n*=26)			Control Group (*n*=26)		
Variable	*K-S*	*df*	*Sig.*	*K-S*	*df*	*Sig.*
MD No Risk Likelihood	0.43	26	<.001***	0.22	26	<.001***
MD Risk Likelihood	0.31	26	<.001***	0.18	26	.03*
LD No Risk Likelihood	0.21	26	<.001***	0.21	26	.004**
LD Risk Likelihood	0.19	26	.01*	0.23	26	.001**
RAS Total	0.20	26	.009**	0.12	26	.20
Responsibility Difference MD No Risk	0.15	26	.11	0.17	26	.06
Responsibility Difference MD Risk	0.32	26	<.001***	0.16	26	.11
Responsibility Difference LD No Risk	0.20	26	.01*	0.18	26	.03*
Responsibility Difference LD Risk	0.25	26	<.001***	0.17	26	.06
Immorality Difference MD No Risk	0.21	26	.006**	0.18	26	.03*
Immorality Difference MD Risk	0.15	26	.16	0.21	26	.005**
Immorality Difference LD No Risk	0.18	26	.04*	0.21	26	.005**
Immorality Difference LD Risk	0.22	26	.003**	0.21	26	.006**
Guilt Difference MD No Risk	0.21	26	.005**	0.16	26	.09
Guilt Difference MD Risk	0.28	26	.001**	0.18	26	.03*
Guilt Difference LD No Risk	0.15	26	.14	0.21	26	.005**
Guilt Difference LD Risk	0.22	26	.002**	0.26	26	<.001

Note: ****p*<.001; ***p*<.01; **p*<.05

3.1.4. Homogeneity of variance

Variances between groups were significantly different for some variables (Table 5). Therefore results reported will be corrected for unequal variances where appropriate.

Table 5.

Levene's Tests of Homogeneity of Variances

Variable	*Levene Statistic*	*df1*	*df2*	*Sig.*
MD No Risk Likelihood	40.28	1	50	<.001***
MD Risk Likelihood	4.35	1	50	.04*
LD No Risk Likelihood	2.09	1	50	.15
LD Risk Likelihood	0.06	1	50	.81
RAS Total	6.17	1	50	.02*
Responsibility Difference MD No Risk	0.96	1	50	.33
Responsibility Difference MD Risk	0.13	1	50	.72
Responsibility Difference LD No Risk	2.40	1	50	.13
Responsibility Difference LD Risk	0.00	1	50	.99
Immorality Difference MD No Risk	0.58	1	50	.45
Immorality Difference MD Risk	0.41	1	50	.53
Immorality Difference LD No Risk	7.14	1	50	.01*
Immorality Difference LD Risk	0.06	1	50	.81
Guilt Difference MD No Risk	2.98	1	50	.09
Guilt Difference MD Risk	0.02	1	50	.89
Guilt Difference LD No Risk	2.10	1	50	.14
Guilt Difference LD Risk	0.02	1	50	.88

Note: ****p*<.001; **p*<.05

3.1.5. Dealing with assumption violations

The non-normal distribution of the data violated the assumptions necessary for parametric analyses. In order to continue exploring the study's research questions, analyses were conducted using bootstrapped confidence intervals.

Boostrapping (Efron & Tibshirani, 1994) is a technique utilized when parametric assumptions for data are in doubt. This method involves repeated resampling (with replacement) of the study's dataset, thus creating phantom 'bootstrap' samples that are then used as non-parametric approximations of the study's sampling distribution (approximating a normal distribution). This allows for the construction of robust estimates of standard errors and confidence intervals (CI) for smaller sample sizes and where there are non-parametric distributions. The more bootstraps that are conducted, the greater the probability that bootstrapped CIs represent valid results (Davidson & McKinnon, 2006); a minimum of 1000 bootstraps is widely advised (Efron, 1984, as cited in Efron & Tibshirani, 1994). Furthermore, bootstrapping also enables bias corrected and accelerated (BCa) CIs, which have been found to show greater accuracy as they adjust for underlying higher order effects (Efron & Tibshirani, 1994).

Bootstrapping has shown superiority over alternative methods that correct for assumption violations (Berkovits, Hancock & Nevitt, 2000; Briggs, 2006; Williams & MacKinnon, 2008) or assume normality of the sampling distribution (Preacher & Hayes, 2008). Therefore, for subsequent parametric analyses in the present study, bootstrapping is utilized with 1000 bootstraps and bias corrected and accelerated confidence intervals set at 95%, unless otherwise specified (denoted by 'BCa CI'). When interpreting these Confidence Intervals, a range that does not contain 0 denotes

that confidence at the 95th percentile is upheld.

3.1.6. Confounding variables

To ensure that groups did not significantly differ from each other on extraneous sociodemographic variables, an independent samples t-test was conducted for the continuous variable of age, and chi-square tests were conducted for categorical variables of gender, ethnicity and educational attainment. For tests where expected cell frequencies fell below 5 for over 20% of cells (Cochran, 1952), Fisher exact tests are also reported (Field, 2009).

As can be seen in Table 6, there was no significant difference between groups for age, gender or educational level. There was, however, a significant difference between groups for ethnicity. Due to these differences, subsequent analyses will be conducted controlling for variation in ethnicity.

Table 7 shows comparisons made between clinical variables. As expected, groups differed on OCI-R total score and RAS total score, confirming that groups differed on measures of OCD symptoms and general responsibility respectively.

Comparisons were also made between group choices of most-disturbing and least-disturbing scenarios, to ensure that any differences found were not due to the scenarios chosen. There was no significant difference between groups on choice of most- or least-disturbing scenario (Table 7).

Table 6.

Group Comparisons for Sociodemographic Variables.

Variable	Group		Analysis
	OCD	Control	
			t(42.46)= -.57, p=.57
Age, *M* [*SD*]	33.48 [10.90]	34.48 [14.89]	BCa CI: -9.93, 4.90
Gender, *n* (%)			
Male	10 (38.50)	10 (38.50)	χ^2 (1)= .01, p=.91,
Female	16 (61.50)	15 (57.70)	φ=-.02, p=.91
Missing	0 (0.00)	1 (3.80)	
Ethnicity, *n* (%)			
White British	12 (46.20)	23 (88.50)	
White Other	10 (38.50)	0 (0.00)	χ^2 (7)=20.46,
Pakistani	0 (0.00)	1 (3.80)	p=.005**,
Asian Other	1 (3.80)	0 (0.00)	*Cramer's V* .63;
Black African	0 (0.00)	1 (3.80)	Fisher's exact
Mixed Other	1 (3.80)	0 (0.00)	p=<.001***
Other	2 (7.70)	0 (0.00)	
Missing	0 (0.00)	1 (3.80)	
Educational Level, *n* (%)			
GCSE	0 (0.00)	1 (3.80)	
A Level	5 (19.20)	1 (3.80)	
Undergraduate	12 (46.20)	15 (57.70)	χ^2 (5)=7.27, p=.15,
Postgraduate	6 (23.10)	8 (30.80)	*Cramer's V*=.38;
Postdoctorate	2 (7.70)	0 (0.00)	Fisher's exact p=.17
Other	1 (3.80)	0 (0.00)	
Missing	0 (0.00)	1 (3.80)	

Note: ****p*<.001; ***p*<.01. For continuous variables, independent samples t-tests were conducted. For categorical variables, chi-square tests were conducted. Phi (ϕ) values are reported for chi-square tests where each variable had two levels (resulting in a 2x2 table). For tests where a variable had more than two levels, Cramer's V is reported. Fisher's Exact Test is also reported for analyses where cell frequencies fell below 5 for over 20% of cells. Bootstrapped Confidence Intervals are provided for parametric analyses.

Table 7.

Group Comparisons for Clinical Factors

Variable	Group		Analysis
	OCD	Control	
OCI-R Total, *M* [*SD*]	31.08 [15.40]	7.95 [6.54]	*t*(33.72)=7.05, p<.001*** BCa CI: 16.70, 29.95
RAS Total, *M* [*SD*]	76.76 [35.81]	132.91 [25.69]	*t*(46.72)=-6.12, *p*=.001** BCa CI: -69.65, -35.67
Most-disturbing Scenario, *n* (%)			
Contamination	3 (11.50)	1 (3.80)	χ^2 (4) =3.38, *p*=.50, *Cramer's V*=.26; Fishers exact *p*=.60
Change	2 (7.70)	2 (7.70)	
Stairs	9 (34.60)	11 (42.30)	
Locks	12 (46.20)	10 (38.50)	
Glass	0 (0.00)	2 (7.70)	
Least-disturbing Scenario, *n* (%)			
Contamination	5 (19.20)	10 (38.50)	χ^2 (4) = 8.50, *p*=.08, *Cramer's V*= .40; Fisher's exact *p*=.07
Change	14 (53.80)	13 (50.00)	
Stairs	3 (11.50)	0 (0.00)	
Locks	0 (0.00)	2 (7.70)	
Glass	4 (15.40)	1 (3.80)	

Note: ***p*<.01, ****p*<.001.For continuous variables, independent samples t-tests were conducted. For categorical variables, chi-square tests were conducted. For tests where a variable has more than two levels, Cramer's V is reported. Fisher's Exact Test is also reported for analyses where cell frequencies fell below 5 for over 20% of cells. Bootstrapped Confidence Intervals are provided for parametric analyses.

3.2. Hypothesis 1

Findings would replicate previous research such that, when risks of acting were not presented, individuals with OCD, compared to individuals without OCD, would rate a higher likelihood of acting, only in their most-disturbing scenarios.

To test this hypothesis a 2 (Group: OCD/control) x 2 (Disturbance: most-disturbing/ least-disturbing) mixed model ANCOVA (controlling for ethnicity) was planned. In order to uphold this hypothesis, an interaction between group and disturbance was expected. However, bootstrapping could not be employed for this main analysis; results of this analysis are still reported for the reader's information but should be treated with extreme caution. Results of the non-bootstrapped ANCOVA were therefore supported by complimentary, bootstrapped analyses. It is advised that bootstrapped results are considered more reliable and hence preferential given their non-parametric methods.

A non-bootstrapped mixed model ANCOVA indicated that there was a significant interaction between disturbance and group ($F(1,49)=5.80$, $p=.02$), that is, the difference in likelihood of acting between groups differed in most- and least-disturbing scenarios (Figure 2).

There was also found to be a significant main effect of group ($F(1,49)=4.51$, $p=.04$), indicating that the OCD group rated a higher likelihood of acting than the control group regardless of disturbance; and a significant main effect of disturbance ($F(1,49)=16.52$, $p=<.001$), showing that all individuals, regardless of group, were

more likely to act in their most-disturbing scenario than in their least-disturbing scenario.

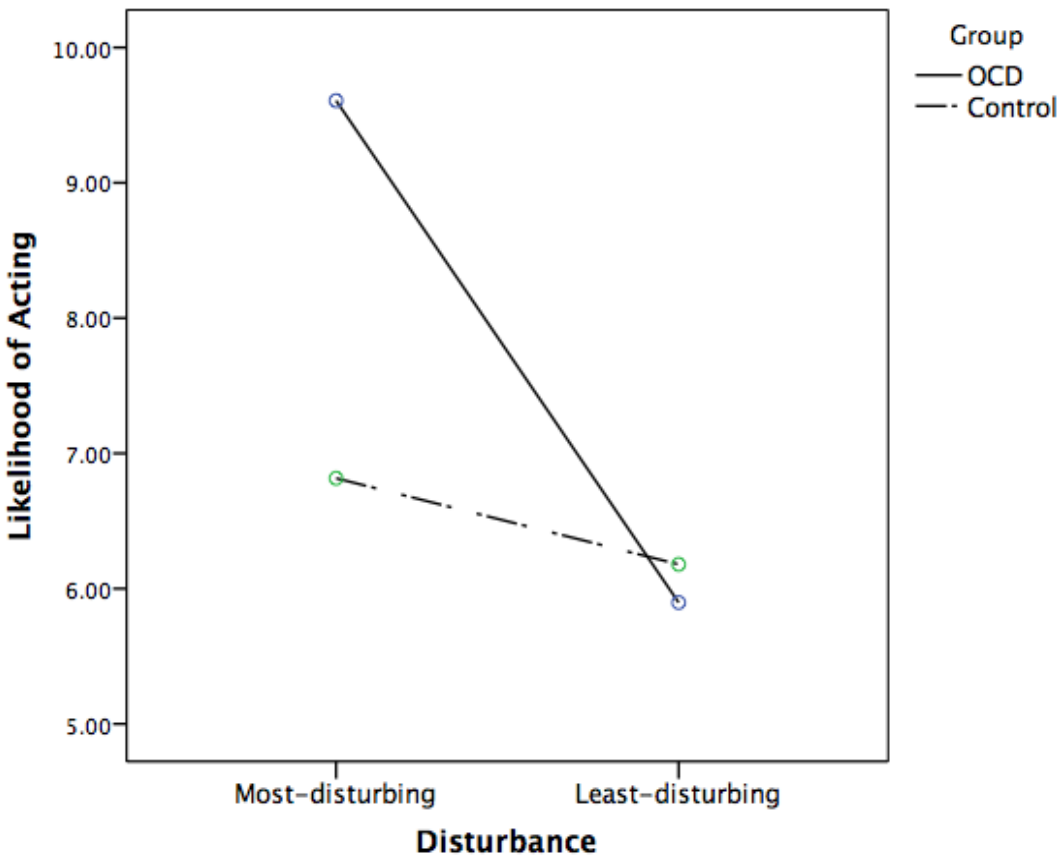


Figure 3. Results of ANCOVA for Likelihood of Acting according to Group and Disturbance when Risks of Acting were Not Presented.

Comparisons between likelihood of acting in most and least-disturbing scenarios, for each group, and comparisons between groups in each scenario type, were analysed using bootstrapped univariate ANCOVAs and paired *t*-tests (Table 8). Such analyses allowed for further exploration of the above indications whilst using bootstrapping to account for non-normal data; throughout this thesis interpretations are made from these bootstrapped, and hence more reliable, results.

Table 8.

Results of Bootstrapped Univariate ANCOVAs and Paired-Samples t-tests for Likelihood of Acting according to Group and Disturbance when Risks of Acting were Not Presented

Group	Most-disturbing scenario *M* [*SD*]	Least-disturbing scenario *M* [*SD*]	Analyses
OCD	9.58 [.81]	6.27 [4.03]	*Paired t*(25)=3.93, *p*=.001** BCa CI: 1.69, 4.94
Control	6.85 [3.13]	5.81 [3.25]	*Paired t*(25)=1.13, *p*=.27 BCa CI: -.74, 2.75
Analyses	*F*(1, 49)=17.08, *p*<.001*** BCa CI: 1.43, 4.15	*F*(1, 49)=.08, *p*=.79 BCa CI: -2.35, 1.78	

Note: ****p*<.001; ***p*<.01. Between-group comparisons are conducted using univariate ANCOVAs, controlling for ethnicity. Within-group comparisons are conducted using paired-samples t-tests; ethnicity is not controlled for in these analyses due to their within-subjects nature and the stability of this factor.

A bootstrapped univariate ANCOVA showed that individuals with OCD were significantly more likely to act than individuals without OCD for most-disturbing scenarios. However, for least-disturbing scenarios, there was no difference between groups. Bootstrapped paired samples *t*-tests showed that the OCD group were significantly more likely to act in their most-disturbing scenario compared to their least-disturbing scenario. However, the control group showed no difference in their likelihood of acting between most- and least- disturbing scenarios. Therefore, individuals with OCD, compared to individuals without OCD, were found to rate a higher likelihood of action only in their most-disturbing (and hence, OCD relevant) scenarios; this upholds the first hypothesis.

3.3. Hypothesis 2

When risks of acting were presented, individuals with OCD would be less likely to act than individuals without OCD in their least-disturbing scenarios. Owing to conflicting research, no prediction was made regarding how likely individuals with and without OCD would be to act in most-disturbing scenarios; however it was predicted that individuals with and without OCD would differ in their decisions in most-disturbing scenarios and that individuals with OCD would show differences in their likelihood of acting in most-disturbing, compared to least-disturbing, scenarios.

To test this hypothesis a 2 (Group: OCD/control) x 2 (Disturbance: most-disturbing/ least-disturbing) mixed model ANCOVA (controlling for ethnicity) was planned; in order to support the hypothesis an interaction was expected. As bootstrapping could not be employed for this main analysis, again the results of this analysis should be met with extreme vigilance but are presented for the reader's interest; subsequent bootstrapped analyses, used to support the findings of the non-bootstrapped mixed model ANCOVA, are suggested to be worthy of greater consideration, and will be used for interpretation throughout this thesis.

Firstly, exploring the results of the non-bootstrapped mixed model ANCOVA, the interaction between group and disturbance did not reach significance at the .05 level; however it was approaching significance ($F(1,49)=3.70$, $p=.06$) (Figure 3).

Although traditional methods advise that a non-significant second-order interaction prohibits further investigation, some authors advocate ignoring omnibus results

(Larson-Hall, 2015; Wilcox, 2012); as the non-significant interaction was approaching significance and was also not supported by bootstrapped confidence intervals, further exploratory post-hoc tests were considered acceptable.

Collapsing across most- and least- disturbing scenarios, individuals with OCD were significantly more likely to act to attempt to prevent harm than individuals without OCD ($F(1,49)=4.85$, $p=.03$). Furthermore, collapsing across groups, participants were more likely to act to attempt to prevent harm in their most-disturbing scenarios when compared with their least-disturbing scenarios ($F(1,49)=5.06$, $p=.02$).

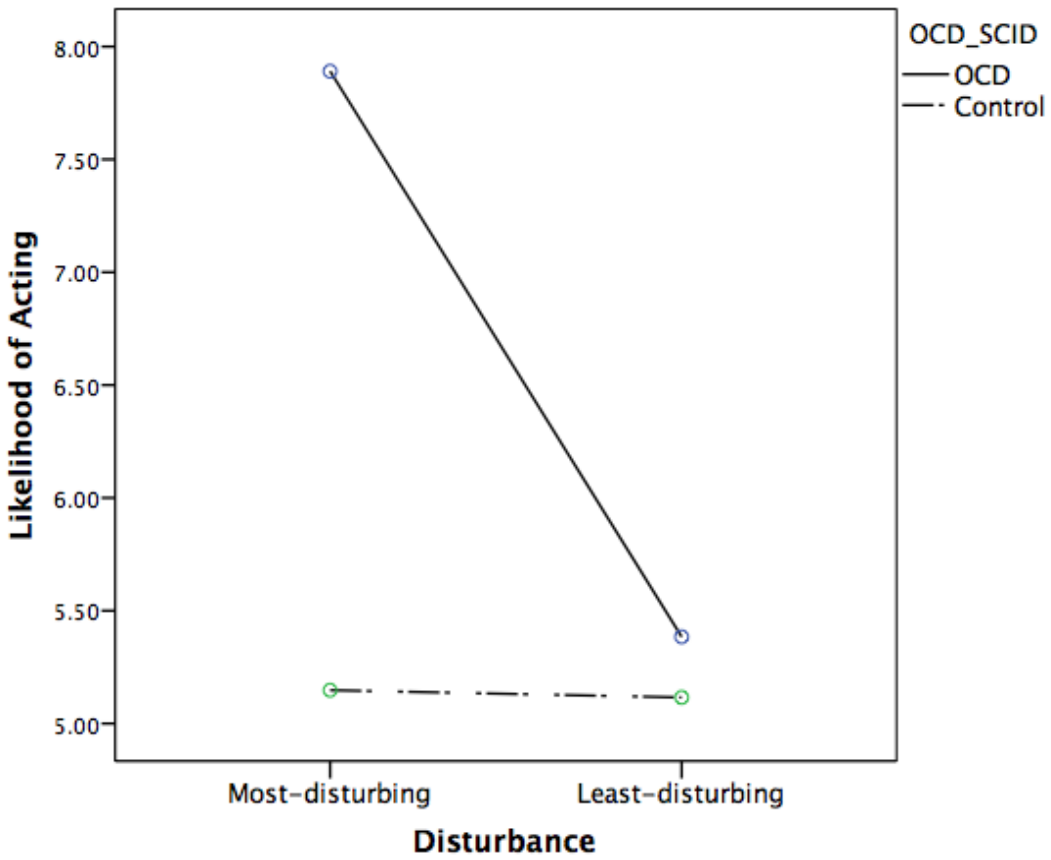


Figure 4. Results of ANCOVA for Likelihood of Acting according to Group and Disturbance when Risks of Acting Were Presented

Comparisons between likelihood of acting in most- and least-disturbing scenarios, for each group, and comparisons between groups in each scenario type, were analysed using bootstrapped univariate ANCOVAs and paired *t*-tests (Table 9), which are advised preferable due to their more robust methods.

Table 9.

Results of Bootstrapped Univariate ANCOVAs and Paired-Samples t-tests for Likelihood of Acting according to Group and Disturbance when Risks of Acting were Presented

	Most-disturbing scenario	Least-disturbing scenario	
Group	*M* [*SD*]	*M* [*SD*]	Analyses
OCD	7.96 [*2.27*]	5.65 [*3.79*]	*Paired t*(25)=2.92, *p*=.007** BCa CI: .81, 3.92
Control	5.08 [*3.02*]	4.85 [*3.63*]	*Paired t*(25)=.25, *p*=.81 BCa CI: -1.69, 1.88
Analyses	*F*(1, 49)=12.16, *p*=.001** BCa CI: 1.16, 4.32	*F*(1, 49)=.06, *p*=.80 BCa CI: -2.04, 2.45	

Note: ****p*<.01. Between-group comparisons are conducted using univariate ANCOVAs, controlling for ethnicity. Within-group comparisons are conducted using paired-samples t-tests; ethnicity is not controlled for in these analyses due to their within-subjects nature and the stability of this factor.

Bootstrapped univariate ANCOVAs showed that for most-disturbing scenarios, there was a significant difference between groups with the OCD group rating a higher likelihood of acting than the control group. However, for least-disturbing scenarios, there was no difference between groups. Bootstrapped paired-samples *t*-tests showed

that individuals with OCD were significantly more likely to act in their most-disturbing scenarios compared with their least-disturbing scenarios. However, for individuals without OCD, there was no significant difference between disturbance ranks.

Therefore, bootstrapped findings suggest that when risks of acting were presented, the pattern shown between individuals with and without OCD in most- and least-disturbing scenarios was similar to when risks of acting were not presented. That is, when risks of acting were stated there were only decision differences between groups in most-disturbing (and hence, OCD relevant) scenarios and in these most-disturbing scenarios individuals with OCD were more likely to act than individuals without OCD. Similarly, individuals with OCD were significantly more likely to act in their most-disturbing, compared to their least-disturbing scenarios, whereas individuals without OCD did not show such a difference; these findings mirror those found when risks of acting were not stated.

This contradicts the hypothesised findings that when risks of acting were stated, individuals with OCD would be less likely to act than individuals without OCD in their least-disturbing scenarios. For least-disturbing scenarios, there was in fact no difference between groups in likelihood of acting. However, supporting the hypothesis, individuals with OCD differed in likelihood of acting in their most-disturbing, compared to least-disturbing, scenarios and in most-disturbing scenarios individuals with and without OCD differed in their likelihood of acting.

3.4. Hypothesis 3

Individuals' general responsibility attitudes (as rated on the Responsibility Attitudes Scale), and decision-specific judgements of responsibility, immorality and guilt, would mediate the relationship between group and likelihood of action, and thus contribute to group differences. These factors would mediate the relationship to varying degrees, and their mediating roles would change when risks of acting were and were not presented.

In order to test the third hypothesis, mediation analyses (Preacher & Hayes, 2008) were used to explore whether the relationship between group and likelihood of acting was mediated by scores on RAS, and decision-specific judgements. As this thesis was interested in potential mediating factors that may explain group differences, and as analyses showed that group differences were only found in most-disturbing scenarios, these scenarios were included, and least-disturbing scenarios were excluded from analyses. Mediatory analyses were conducted using the PROCESS macro V2.15 (Model 4) (Hayes, 2012) for SPSS, with bootstrapping methods (with 5000 bootstraps, as advised by Preacher and Hayes (2008) for multiple mediation models) and controlling for ethnicity. PROCESS is a computational procedure for SPSS that uses a path analysis framework and expands on former programs of mediation and moderation to allow greater model complexity (Hayes, 2012).

Primary analyses entered all variables (RAS total and decision-specific judgements) together as potential mediating factors between group and likelihood of acting. This multiple mediating exploration allows for different theories to be "pitted against each

other" (Hayes, 2009, p.415) and the inclusion of all possible mediators in the same model is considered more "convenient, precise and parsimonious" (Preacher & Hayes, 2008, p.887). Therefore this multiple mediation model was used to see the individual mediating roles of general responsibility and responsibility, immorality and guilt differences to assess their respective roles in the decision-making process. Two multiple mediation models were planned: first, the relationship between group and likelihood of acting in most-disturbing scenarios when risks of acting were *not* presented, as mediated by RAS total and decision-specific differences in responsibility, immorality and guilt; second, the relationship between group and likelihood of acting in most-disturbing scenarios when risks of acting *were* presented, as mediated by RAS total and decision-specific differences in responsibility, immorality and guilt.

As multiple mediation models compare mediators in their unique abilities to mediate, above and beyond other mediators or covariates, it is advised that constructs entered into the model have as little conceptual overlap as possible (Hayes, 2013). High multicollinearity could lead to both Type I and Type II errors in this analysis and so it was necessary to assess multicollinearity between variables.

3.4.1. Multicollinearity

Multicollinearity denotes a strong correlation between two or more predictors within a regression model (Field, 2009); it is necessary to ensure that levels of multicollinearity are not too high, so that the importance of individual predictors can be appreciated. Multicollinearity in the predictor variables of RAS total, and

differences in responsibility, immorality and guilt, were assessed separately for most-disturbing scenarios when risks of acting were not presented and most-disturbing scenarios when risks of acting were presented. Several guidelines were explored: Variance Inflation Factor (VIF) values greater than 10 indicate a concern of multicollinearity (Bowerman & O'Connell, 1990); an average VIF value substantially greater than 1 indicates potential bias (Bowerman & O'Connell, 1990), and tolerance levels below 0.1 indicate problems (Menard, 1995).

For most-disturbing scenarios when risks of acting were not presented, all VIF values were below 10, and all tolerance levels were greater than 0.1. However, the average VIF value was 4.92, raising some concern and further exploration indicated that responsibility difference and guilt difference showed high variance proportions for the same eigenvalue (92% and 95% respectively), and hence loaded onto the same dimension. For most-disturbing scenarios when risks of acting were presented, again all VIF values were below 10 and all tolerance values over 0.1. The average VIF value was 3.04 and again, further exploration revealed that responsibility difference and guilt difference loaded onto the same factor (66% and 81% respectively).

Although some advise that high multicollinearity of predictor variables should be reduced using mean centreing, the need to do this has been refuted (Echambi & Hess, 2007; Shieh, 2011; Hayes, 2012). Alternatively, it is suggested to acknowledge the limitations that this imposes on the model, and to treat results with caution (Field, 2009). As multicollinearity is found to be particularly problematic in multiple mediation models, it should be considered that when all variables are entered into the model together, indirect effects for responsibility difference and guilt difference may

be subject to type I or type II error (Hayes, 2013). Therefore comment will also be made regarding results when excluding one of these at a time from the multiple mediation analysis. Furthermore, following a multiple mediation model with all variables entered, individual simple mediation models were explored as supplementary analyses. This dual analytic approach allowed for an assessment of both unique contributions of mediators above and beyond other mediators, and of individual mediating value when mediators were considered alone.

Descriptive statistics for Hypothesis 3 are shown in Table 10.

Table 10.

Descriptive Statistics for Hypothesis 3

	Group	
	OCD	Control
	M [*SD*]	*M* [*SD*]
MD No Risk Likelihood	9.58 [0.81]	6.85 [3.13]
RAS Total	77.88 [35.49]	131.38 [27.04]
Responsibility Difference MD No Risk	6.35 [3.79]	3.81 [3.36]
Immorality Difference MD No Risk	7.96 [2.27]	5.08 [3.02]
Guilt Difference MD No Risk	3.62 [3.51]	2.12 [3.31]
MD Risk Likelihood	5.92 [3.65]	3.92 [3.22]
Responsibility Difference MD Risk	6.04 [3.75]	4.46 [2.90]
Immorality Difference MD Risk	1.85 [2.87]	0.65 [3.30]
Guilt Difference MD Risk	1.96 [2.97]	1.27 [3.31]

3.4.2. Most-disturbing scenarios when risks of acting were not presented

The multiple mediation model for most-disturbing scenarios when risks of acting were not presented, including all variables as parallel mediators between group and likelihood of action, is depicted in Figure 4. Figure 4 also shows regression coefficients from analyses.

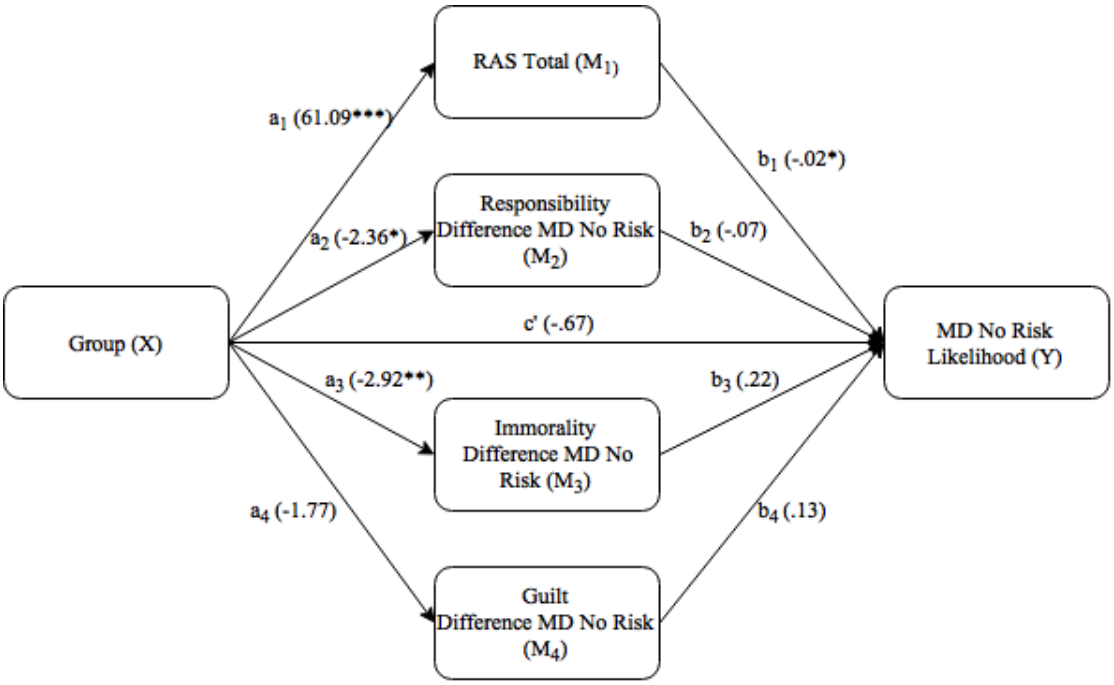


*Figure 5.*Visual Representation of Multiple Mediation Analysis for Most-Disturbing Scenarios when Risks of Acting were Not Presented, with Regression Coefficients Labelled. ***=p<.001, **=p<.01, *=p<.05.

Table 11 shows the results for regression coefficients, standard errors and significance values, for the relationship between group (X) and mediators (M_{1-4}), the relationship between mediators (M_{1-4}) and likelihood of acting (Y) and the direct effect between group (X) and likelihood of acting (Y) for most-disturbing scenarios when risks of acting were not presented. It can be seen that the paths between group and RAS total, responsibility difference and immorality difference (paths a_{1-3} on Figure 4) are

significant, and produce significant regression models (although the model for responsibility difference is approaching significance). Regression coefficients for these significant models signify that individuals in the control group scored higher (indicating lower responsibility) in total on the RAS and showed on average a smaller difference between if they did and did not act on responsibility and immorality judgements. It can also be seen that the path between RAS total and likelihood of acting (b_1) is significant, and the path between immorality difference and likelihood of acting (b_3) is approaching significance. These indicate that on average, an increase in RAS corresponds to a lower likelihood of acting, and that an increase in immorality difference corresponds with an increase in likelihood of acting, although this latter finding was not significant at the .05 level. It is also important to note that there was not a direct effect between group and likelihood of acting (c'), when all other mediators were considered.

Table 11.

Results of Multiple Mediation Analysis for Most-Disturbing Scenarios when Risks of Acting were Not Presented

	Consequent														
	RAS Total (M_1)			Responsibility Difference MD No Risk (M_2)			Immorality Difference MD No Risk (M_3)			Guilt Difference MD No Risk (M_4)			MD No Risk Likelihood (Y)		
Antecedent	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
Group (X)	61.09	8.69	<.001***	-2.36	1.01	.02*	-2.92	1.04	.001**	-1.77	0.99	.21	-0.67	0.87	.44
RAS Total (M1)	-	-	-	-	-	-	-	-	-	-	-	-	-0.02	0.01	.02*
Responsibility Difference MD No Risk (M_2)	-	-	-	-	-	-	-	-	-	-	-	-	-0.07	0.23	.76
Immorality Difference MD No Risk (M_3)	-	-	-	-	-	-	-	-	-	-	-	-	0.22	0.11	.06
Guilt Difference MD No Risk (M_4)	-	-	-	-	-	-	-	-	-	-	-	-	0.13	0.24	.60
Constant	4.58	14.89	.76	8.87	1.72	<.001***	9.88	1.79	<.001***	8.12	1.69	<.001***	10.06	1.35	<.001***
Ethnicity	3.25	1.20	.01	-0.16	0.14	.26	-0.16	0.14	0.26	-0.08	0.14	0.54	0.08	0.09	.35
Regression Model	R^2=.50 $F(2,49)$=24.86,p<.001***			R^2=.10 $F(2,49)$=2.84, p=.07			R^2=.14 $F(2,49)$=3.94, p=.03*			R^2=.06 $F(2,49)$=1.61, p=.21			R^2=.49 $F(6,45)$=7.09, p<.001***		

Note: ***p<.001; **p<.01; *p<.05. Positive coefficient values denote positive relationships between variables; negative values denote an inverse relationship between variables. Group was coded as 1=OCD, 2=Control.

Exploring indirect effects, *ab* denotes the measure of the amount of mediation in contemporary mediation analyses (Hayes, 2009), owing to the majority of analyses computing indirect effects as the product of paths *a* and *b*. There was a significant total indirect effect of all mediators together (Table 12).

There was a significant indirect effect of: RAS total, with the control group being less likely to act as a result of the effect of group on RAS total, and RAS total on likelihood of acting; and immorality difference, with the control group being less likely to act owing to the effect of group on immorality difference and immorality difference on likelihood of acting. No mediator was significantly stronger than another (also Table 12).

Table 12.

Indirect Effects of Mediators and Mediator Comparisons for Most-Disturbing Scenarios when Risks of Acting were Not Presented

	Effect	*SE*	BCa CI [LCI, UCI]
Total ($a_{1\text{-}4}b_{1\text{-}4}$)	-2.12	0.77	-3.82, -.80
Mediator			
RAS Total (a_1b_1)	-1.44	0.65	-2.95, -.33
Immorality Difference MD No Risk (a_3b_3)	-0.63	0.42	-2.00, -.10
Guilt Difference MD No Risk (a_4b_4)	-0.23	0.70	-2.43, .65
Responsibility Difference MD No Risk (a_2b_2)	0.17	0.82	-1.39, 1.85
Mediator Comparisons			
RAS Total and Immorality Difference MD No Risk	-0.81	0.86	-2.44, 1.03
RAS Total and Guilt Difference MD No Risk	1.21	0.91	-2.90, .69
RAS Total and Responsibility Difference MD No Risk	-1.61	1.06	-3.92, .35
Immorality Difference MD No Risk and Guilt Difference MD No Risk	-0.40	0.82	-2.28, 1.03
Immorality Difference MD No Risk and Responsibility Difference MD No Risk	-0.80	0.97	-3.09, .84
Guilt Difference MD No Risk and Responsibility Difference MD No Risk	-0.40	1.49	-4.17, 1.91

Note: Mediator results are presented in order of effect. Group was coded as OCD=1; Control=2. Effect size denotes the effect of group on likelihood of acting through the mediators.

When responsibility difference and guilt difference were input into the model individually in an attempt to consider multicollinearity, this did not change previously specified significant and non-significant findings.

Therefore, it can be said that, when controlling for ethnicity and other possible mediators, there was no direct effect of group on likelihood of acting. However, there was a significant indirect effect of group through RAS total and immorality difference.

Individual mediators

As high collinearity between variables is found to cause particular problems in multiple mediation models (Preacher & Hayes, 2008), each factor was also explored within individual simple mediation models (see Figure 5 for visual representation of this in most-disturbing scenarios when risks of acting were not presented), controlling for ethnicity but not controlling for other potential mediators. Regression coefficients are also shown in Figure 5. Owing to multiple testing, Bonferroni corrected results (with α levels set at .0125) are also reported.

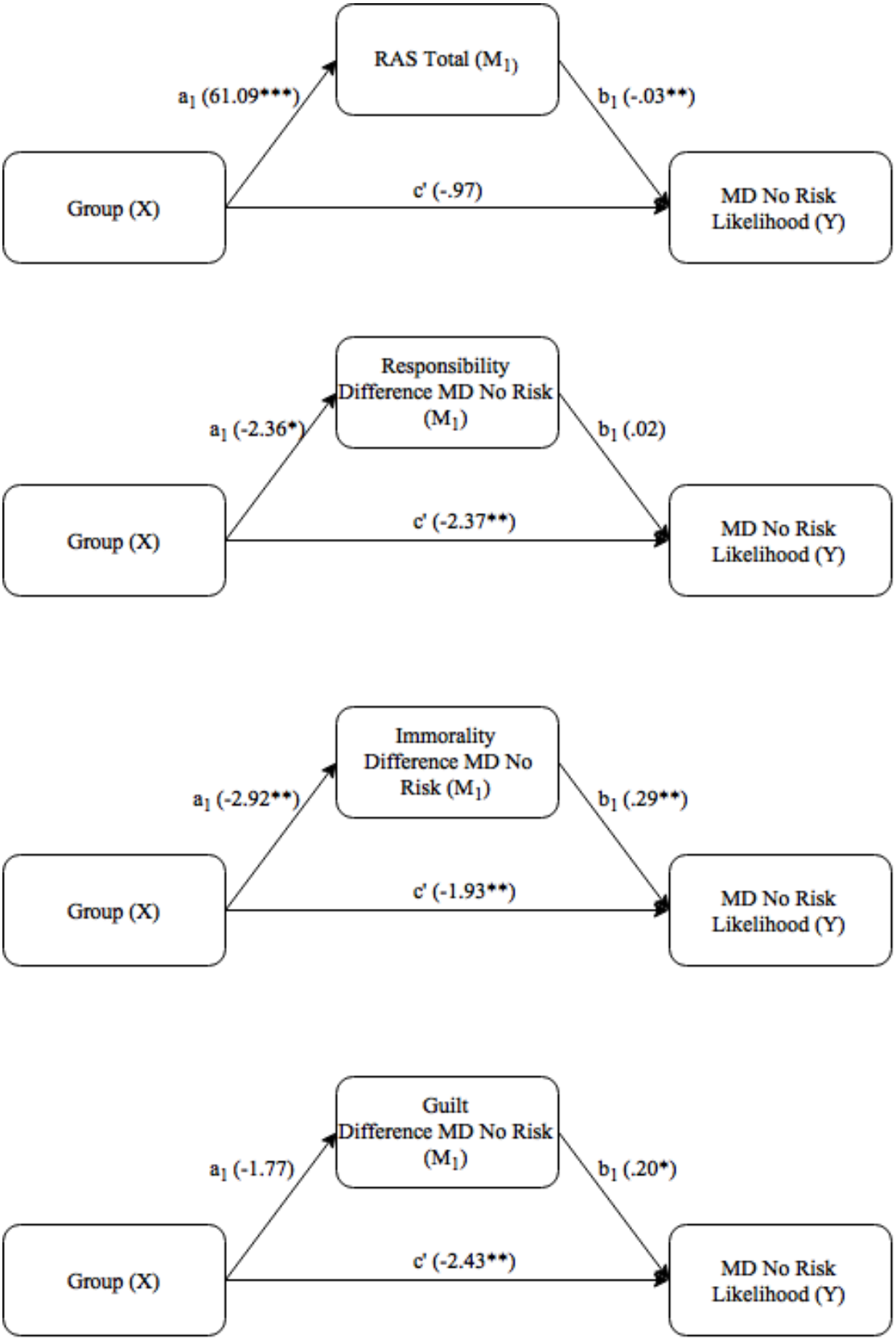


Figure 6. Visual Representation of Individual Simple Mediation Models for Most-Disturbing Scenarios when Risks of Acting were Not Presented, with Regression Coefficients Labelled. ***=p<.000, **=p<.01, *=p<.05.

Table 13 displays the results for individual simple mediation analyses for most-disturbing scenarios when risks of acting were not presented. To minimise repetition, Table 13 does not include the relationships from group to individual mediators (a paths) as these can be seen in Table 11.

When risks of acting were not presented, all factors except responsibility difference, which approached significance, individually showed significant indirect effects, and all factors including responsibility difference reached 95% confidence level. This showed that the control group was less likely to act due to the effect of group on RAS total, responsibility difference, immorality difference and guilt difference (when considered individually) and the effect of these mediators on likelihood of acting (see Table 13 for respective values). There was also a significant direct effect of group on likelihood of acting when responsibility difference, immorality difference and guilt difference were analysed as individual mediators for these scenarios; these significant findings reached the 95% bootstrapped Confidence Interval. However, there was no significant direct effect of group on likelihood of acting when RAS total was analysed as an individual mediator.

When Bonferroni correction was applied, only RAS total and immorality difference remained significant as mediators. A direct group effect remained significant at this level for all judgement differences.

Table 13.

Individual Simple Mediation Analyses for Most-Disturbing Scenarios when Risks of Acting were Not Presented

	Relationship with Likelihood of acting (b pathways)				Indirect Effect (ab pathways)			Direct Effect (c' pathways)		
Mediator in analysis	Coeff.	*SE*	*p*	Regression Model	Coeff.	*SE*	BCa CI [LCI, UCI]	Coeff.	*SE*	BCa CI [LCI, UCI]
RAS Total	-0.03	0.01	.006**	R^2=.38,	-1.82	0.64	-3.46, -0.84			
Group	-0.97	0.89	.28	F(3,48)= 9.73,				-0.97	0.89	-2.77, 0.82
Constant	12.60	1.08	<.001***	p<.001***						
Ethnicity	0.07	0.09	.76							
Responsibility Difference MD No Risk	0.18	0.09	.06	R^2=.32,	-0.42	0.32	-1.43, -0.01			
Group	-2.37	0.69	.001**	F(3,48)=7.65,				-2.37	0.69	-3.77, -0.97
Constant	10.88	1.40	<.001***	p<.001***						
Ethnicity	0.00	0.09	.98							
Immorality Difference MD No Risk	0.29	0.08	.001**	R^2=.42,	-.86	0.45	-2.01, -0.22			
Group	-1.93	0.65	.004**	F(3,48)=11.73,				-1.93	0.65	-3.24, -0.62
Constant	9.55	1.33	<.001***	p<.001***						
Ethnicity	0.02	0.08	.80							
Guilt Difference MD No Risk	0.20	0.09	.04*	R^2=.34,	-0.36	0.31	-1.31, -0.01			
Group	-2.43	0.67	.001**	F(3,48)=8.11,				-2.43	0.07	-3.78, -1.08
Constant	10.81	1.35	<.001***	p<.001***						
Ethnicity	-0.01	0.09	.92							

Note: ****p*<.001; ***p*<.01; **p*<.05. Positive coefficient values denote positive relationships between variables; negative values denote an inverse relationship between variables. Group was coded as 1=OCD, 2=Control.

3.4.3. Most-disturbing scenarios when risks of acting were presented

The multiple mediation model for most-disturbing scenarios when risks of acting were presented, including all variables as parallel mediators between group and likelihood of acting, is depicted in Figure 6. Regression coefficients are also shown in Figure 6.

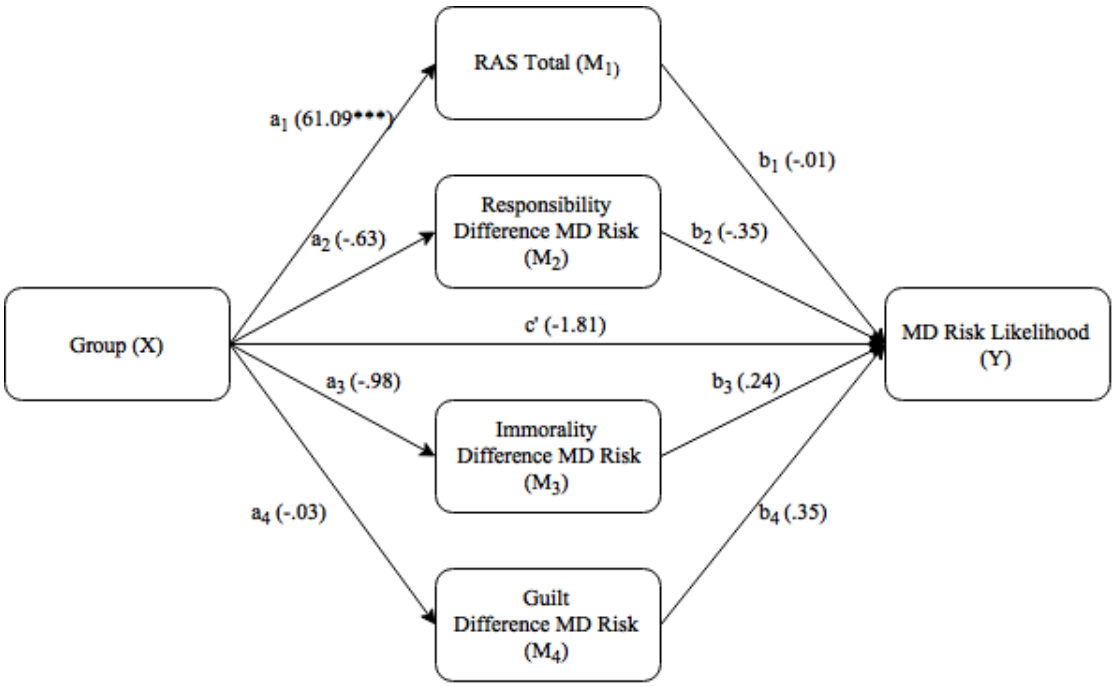


*Figure 7.*Visual Representation of Multiple Mediation Analysis for Most-Disturbing Scenarios when Risks of Acting were Presented, with Regression Coefficients Labelled. ***=p<.001.

Table 14 shows the results for regression coefficients, standard errors and significance values for the relationship between group (X) and mediators (M_{1-4}), the relationship between mediators and likelihood of acting (Y) and the direct effect between group (X) and likelihood of acting (Y) for most-disturbing scenarios when risks of acting were presented. It can be seen that only the path between group and RAS total, (path a_1 in Figure 6) is significant. It can also be seen that no paths between mediators and likelihood of acting are significant. The direct effect between group and likelihood of acting is approaching significance, although does not reach the p<.05 level.

Table 14.

Results of Multiple Mediation Analysis for Most-Disturbing Scenarios when Risks of Acting were Presented

	Consequent														
	RAS Total (M_1)			Responsibility Difference MD Risk (M_2)			Immorality Difference MD Risk (M_3)			Guilt Difference MD Risk (M_4)			MD Risk Likelihood (Y)		
Antecedent	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
Group (X)	61.09	8.69	<.001***	-0.63	0.88	.47	-0.98	0.98	.32	-0.03	0.88	.97	-1.81	1.05	.09
RAS Total (M_1)													-0.01	0.01	.24
Responsibility Difference MD Risk (M_2)													-0.35	0.22	.12
Immorality Difference MD Risk (M_3)													0.24	0.15	.11
Guilt Difference MD Risk (M_4)													0.35	0.25	.16
Constant	4.58	14.89	.76	1.57	1.50	.30	3.76	1.68	.03*	0.92	1.51	.55	9.86	1.35	<.001***
Ethnicity	3.25	1.20	.01*	0.24	0.12	.05	0.23	0.14	.10	0.29	0.12	.02*	0.04	0.12	.74
Regression Model	R^2=.50			R^2=.11			R^2=.10			R^2=.11			R^2=.40		
	F(2,49)=24.86, p<.001***			F(2,49)=3.04, p=.06			F(2,49)=2.69, p=.08			F(2,49)=3.18, p=.05			F(6,45)=5.03, p<.001***		

Note: ****p*<.001; ***p*<.01; **p*<.05. Positive coefficient values denote positive relationships between variables; negative values denote an inverse relationship between variables. Group was coded as 1=OCD, 2=Control.

The total indirect effect of group on likelihood of acting through potential mediators was not significant. However, Preacher and Hayes (2008) argue that specific indirect effects should still be examined in the presence of a non-significant total indirect effect due to potential suppression effects obscuring the impact of individual mediators (MacKinnon, Krull, & Lockwood, 2000).

Exploring these, there were no significant indirect effects of mediators between group and likelihood of acting in most-disturbing scenarios when risks of acting were presented when controlling for ethnicity and other potential mediators. Moreover there were no significant differences between mediators (see Table 15 for indirect effects and mediator comparisons).

Table 15.

Indirect Effects of Mediators and Mediator Comparisons for Most-Disturbing Scenarios when Risks of Acting were Presented

	Effect	*SE*	BCa CI [LCI, UCI]
Total ($a_{1\text{-}4}b_{1\text{-}4}$)	-0.94	1.10	-3.05, 1.26
Mediator			
RAS Total (a_1b_1)	-0.91	1.01	-2.86, 1.07
Immorality Difference MD Risk (a_3b_3)	-0.24	0.32	-1.17, .16
Guilt Difference MD Risk (a_4b_4)	-0.01	0.41	-1.11, .62
Responsibility Difference MD Risk (a_2b_2)	0.22	0.43	-.38, 1.52
Mediator Comparisons			
RAS Total and Immorality Difference MD Risk	-0.67	1.06	-2.68, 1.45
RAS Total and Guilt Difference MD Risk	-0.90	1.04	-2.95, 1.13
RAS Total and Responsibility Difference MD Risk	-1.13	1.13	-3.40, .94
Immorality Difference MD Risk and Guilt Difference MD Risk	-0.23	0.42	-1.01, .65
Immorality Difference MD Risk and Responsibility Difference MD Risk	-0.46	0.62	-2.00, .48
Guilt Difference MD Risk and Responsibility Difference MD Risk	-0.23	0.80	-2.64, .86

Note: For ease of comparison, variables are presented in the same order as Table 12. Group was coded as follows: OCD=1; Control=2. Indirect effect size denotes the effect of group on likelihood of acting through mediators.

Therefore, in most-disturbing scenarios when risks of acting were presented, and when controlling for ethnicity and other potential mediators, there were no indirect effects of RAS total, or judgement differences on likelihood of acting. A direct effect between group and likelihood of acting approached significance but did not reach the $p<.05$ level. Findings reported were upheld when omitting responsibility difference and guilt difference separately except the direct effect of group on likelihood of acting, which was non-significant when removing guilt difference from the model (when removing responsibility difference, the direct effect of group on likelihood of acting was again approaching significance).

Individual mediators

Again, supplementary individual simple mediation models were explored to consider mediating factors alone, and thus remove the possibility of errors due to multicollinearity (Figure 7). When risks of acting were presented, there were no indirect effects that reached 95% confidence intervals (Table 16). There was, however, a significant direct effect of group when responsibility difference, immorality difference and guilt difference were analysed, but not when RAS total was examined. The significant direct effect of group for these analyses remained when Bonferroni correction was applied.

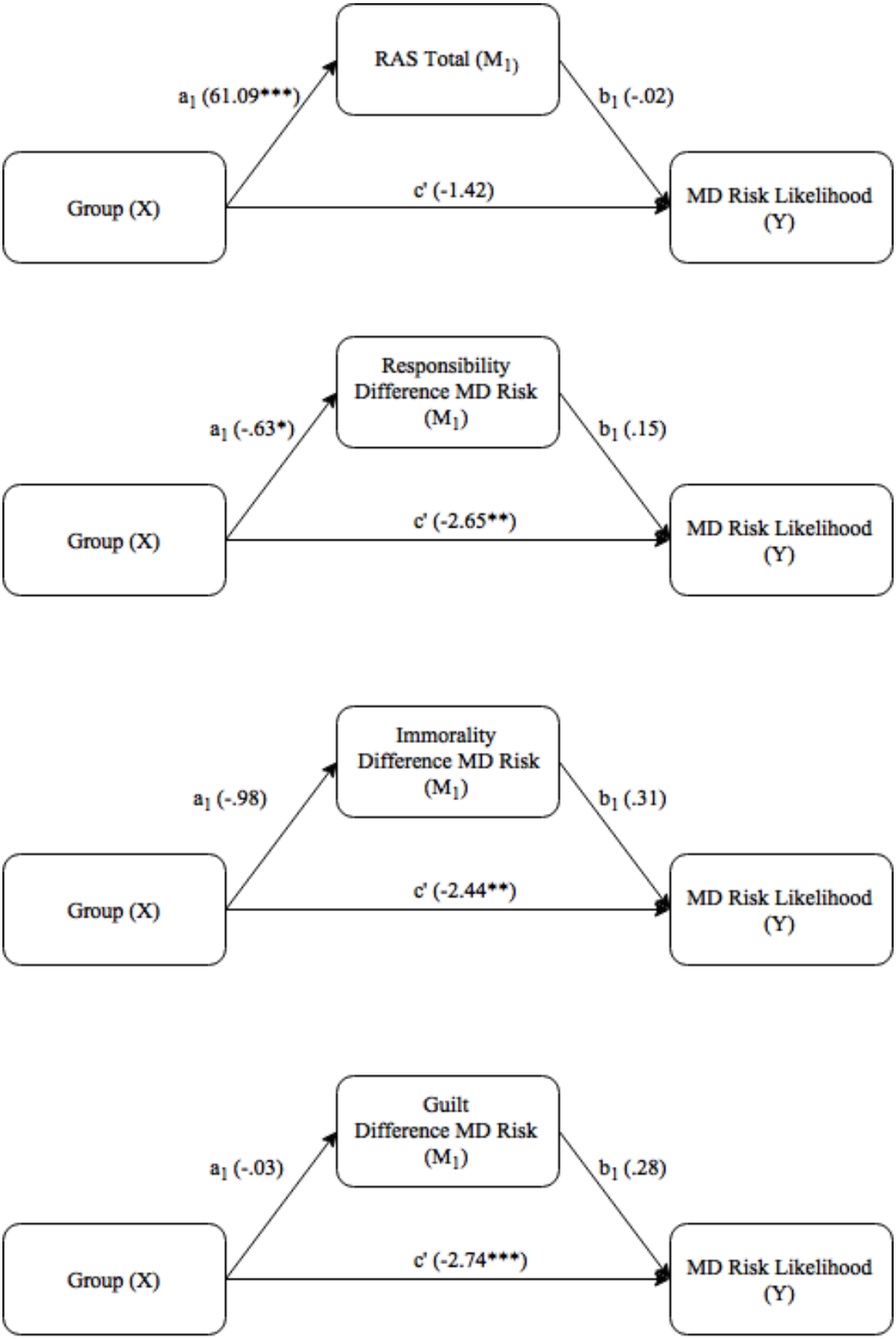


Figure 8. Visual Representation of Individual Simple Mediation Analyses for Most-Disturbing Scenarios when Risks of Acting were Presented, with Regression Coefficients Labelled, ***=p<.001, **=p<.01, *=p<.05.

Table 16.

Individual Simple Mediation Analyses for Most-Disturbing Scenarios when Risks of Acting were Presented

	Relationship with MD Risks Likelihood (b paths)				Indirect Effect (ab)			Direct Effect (c')		
Mediator in Analysis	Coeff.	*SE*	*p*	Regression Model	Coeff.	*SE*	BCa CI [LCI, UCI]	Coeff.	*SE*	BCa CI [LCI, UCI]
RAS Total	-0.02	0.01	.09		-1.31	0.98	-3.40, 0.35			
Group	-1.42	1.09	.20	R^2=.28, F(3, 48)=				-1.42	1.09	-3.63, 0.77
Constant	10.57	1.32	<.001***	6.24, p=.001**						
Ethnicity	0.13	0.11	.25							
Responsibility Difference MD Risk	0.15	0.12	.24		-0.10	0.18	-0.72, 0.11			
Group	-2.65	0.79	.001**	R^2=.26, F(3, 48)=				-2.65	0.79	-4.23, -1.06
Constant	10.24	1.36	<.001***	5.60, p=.002**						
Ethnicity	0.02	0.11	.83							
Immorality Difference MD Risk	0.31	0.11	.005**		-0.30	0.34	-1.21, 0.19			
Group	-2.44	0.74	.002**	R^2=.35, F(3,48)=				-2.44	0.74	-3.93, -0.95
Constant	9.31	1.31	<.001***	8.67, p<.001***						
Ethnicity	-0.01	0.1	.94							
Guilt Difference MD Risk	0.28	0.12	.03*		-0.01	0.27	-0.55, 0.54			
Group	-2.74	0.75	<.001***	R^2=.31, F(3,48)=				-2.74	0.75	-4.25, -1.31
Constant	10.22	1.30	<.001***	7.29, p<.001***						
Ethnicity	-0.02	0.11	.86							

Note: ***p<.001; **p<.01; *p<.05. Positive coefficient values denote positive relationships between variables; negative values denote inverse relationships. Group was coded as follows: OCD=1; Control=2.

Therefore, pulling analyses together, it can be said that in most-disturbing scenarios when risks of acting were not presented, when analysed using a multiple mediation model, only RAS total and immorality difference showed significant indirect effects, indicating that these factors uniquely contributed to decision differences. That is, the control group was less likely to act due to the effect of group on these mediators and the effect of these mediators on likelihood of acting. Neither mediator was found to contribute significantly more than the other. It is important to note that responsibility difference and guilt difference, the two factors that were not found to uniquely contribute in the multiple mediation model, were also the two factors found to show high multicollinearity. However, these mediators were still not found to be significant when one of the two was excluded from the multiple mediation model at a time. When assessed individually, RAS total, responsibility difference, immorality difference and guilt difference were all found to show significant indirect effects and play mediating roles between group and likelihood of acting. However, the significant indirect effects of responsibility difference and guilt difference were removed when Bonferroni correction was applied.

In most-disturbing scenarios when risks of acting were presented, a multiple mediation analysis found no significant indirect effects of any mediator. Furthermore the direct effect of group on likelihood of acting, although approaching significance, was not significant at the .05 level. Individual analyses found that group had a significant direct effect when responsibility difference, immorality difference and guilt difference were analysed individually as mediators, but not when RAS total was assessed. Throughout all analyses for scenarios when risks of acting were presented, no significant indirect effects were found.

It was hypothesised that these four potential mediators would mediate the relationship between group and likelihood of acting to different extents and that this would change when risks of acting were and were not presented. Indeed, this was partially the case as RAS total and differences in immorality judgements were found to be significant mediators when risks of acting were not presented, but this changed such that these were no longer significant when risks of acting were presented.

Findings shall be discussed and critiqued in the following chapter.

CHAPTER 4: DISCUSSION

In this concluding chapter, the main findings of the study are summarised and discussed within the context of the current literature. The study is critiqued regarding its strengths and limitations, and clinical implications of the findings are outlined. Suggestions are also provided for potential areas of future research.

4.1. Summary and discussion of findings

The juncture between decision-making and moral reasoning in OCD provided an exciting opportunity to explore decisions made by individuals with and without OCD, and the potential factors that contribute to decision differences. This study aimed to examine the decisions made by those with and without OCD in hypothetical scenarios, which involved potential harm. In all scenarios, a potential risk was presented, which could be prevented through an action. The scenario was first presented such that a risk of acting was not presented (i.e. it was not stated that acting to prevent harm would cause any other harm). These vignettes were used to replicate the previous findings of Wroe and Salkovskis (2000), that individuals with OCD were more likely to act to prevent harm, only in their most-disturbing scenarios. In the second presentation of vignettes, a risk of acting was presented such that acting would cause other, albeit lesser, harm. Novel to this research was the exploration of decisions by individuals with OCD in moral-reasoning scenarios when risks of acting were presented that used low-risk, OCD-relevant, semi-idiosyncratically tailored content. It was hoped that by addressing the criticisms of former studies on moral reasoning in OCD (Franklin et al.,

2009; Harrison et al., 2012; Mancini & Gangemi, 2015; Whitton et al., 2014), a clearer picture would emerge regarding decisions of individuals with OCD in these scenarios, and the factors that may explain decision differences, findings which would contribute to a wider understanding of decision-making in OCD.

Three hypotheses were proposed; these shall henceforth be summarised and discussed.

4.1.1. Hypothesis 1

Findings would replicate previous research such that, when risks of acting were not presented, individuals with OCD, compared to individuals without OCD, would rate a higher likelihood of acting, only in their most-disturbing scenarios.

Considering scenarios where risks of acting were not presented, individuals with OCD in the current study reported a greater likelihood of acting to attempt to prevent harm than individuals without OCD, only in their most-disturbing scenarios. There was no difference between groups in least-disturbing scenarios. This finding upholds the first hypothesis.

Furthermore, these results support the previous suggestion of Wroe and Salkovskis (2000) that individuals with OCD do not show *general* decision differences when compared with their non-clinical counterparts; rather, decisions differences are only shown in an individual's OCD-relevant scenarios.

Moreover, these findings support the criticisms of research into moral-reasoning in OCD, where scenarios used are not idiosyncratically tailored, and thus are not scenarios where decision differences would be expected.

4.1.2. Hypothesis 2

When risks of acting were presented, individuals with OCD would be less likely to act than individuals without OCD in their least-disturbing scenarios. Owing to conflicting research, no prediction was made regarding how likely individuals with and without OCD would be to act in most-disturbing scenarios; however it was predicted that individuals with and without OCD would differ in their decisions in most-disturbing scenarios and that individuals with OCD would show differences in their likelihood of acting in most-disturbing, compared to least-disturbing, scenarios.

Individuals with and without OCD did not differ in their likelihood of acting in least-disturbing scenarios. This contradicted the hypothesis that, based on previous findings (Mancini & Gangemi, 2015; Whitton et al., 2014), suggested individuals with OCD would be less likely to act than individuals without OCD in their least-disturbing scenarios. This finding does, however, support the findings of Franklin and colleagues (2009) and Harrison and colleagues (2012) who found no difference when comparing decisions of individuals with and without OCD using non-OCD relevant scenarios.

In line with the hypothesis, individuals with OCD showed differences in their likelihood of acting in most-disturbing, compared to least-disturbing scenarios as individuals with OCD were *more* likely to act in their most-disturbing, compared to

least-disturbing scenarios. This supports the suggestion of Wroe and Salkovskis (2000), that in scenarios semi-idiosyncratically tailored to an individuals' obsessional beliefs, individuals with OCD would be more likely to act than in non-tailored scenarios, potentially due to responsibility beliefs being activated in such scenarios. At the same time, this contests the inferences that can be drawn from Greene's (2001) theory, that in most-disturbing scenarios, individuals with OCD would be less likely to act than in their least-disturbing scenarios due to an increased emotional response and greater difficulty overriding this with cognitive control.

Further in line with the hypothesis, in most-disturbing scenarios, individuals with and without OCD showed differences in their likelihood of acting; in such scenarios individuals with OCD were *more* likely to act than individuals without OCD. That is, individuals with OCD were still more likely than individuals without OCD to act according to utilitarian principles only in their most-disturbing (and hence, obsession-relevant) scenarios, regardless of that action risking other lesser harm. This finding supports the suggestion of Wroe and Salkovskis (2000), that when using everyday scenarios, semi-idiosyncratically tailored to individuals' obsessional beliefs, individuals with OCD are more likely to try and prevent harm than individuals without OCD. Importantly, findings suggest that this relationship holds regardless of risks of acting being presented. At the same time, this contradicts the inferences that can be drawn from Greene and colleague's (2001) theory, that the presentation of risks of acting would result in individuals with OCD being less likely to act to attempt to prevent harm than individuals without OCD in their most-disturbing scenarios due to a heightened affective response and difficulties with cognitive control.

Moral-reasoning research and theories to date suggested that presenting risks of acting would result in individuals with OCD being less likely to act to prevent harm than individuals without OCD (Greene et al., 2008; Mancini & Gangemi, 2015; Whitton et al., 2014). For example, Mancini and Gangemi (2015) and Whitton and colleagues (2014) both found individuals with OCD were less likely to act to prevent harm when that harm caused other, lesser harm, than individuals without OCD. Furthermore, Greene's (2008) theory stated that heightened emotive responses, and difficulties with cognitive control are more likely to lead to deontological choices (not acting) in moral-reasoning scenarios. As individuals with OCD are more likely than individuals without OCD to exhibit these traits (Cougle, et al., 2013; Griesberg & McKay, 2003), this implies that individuals with OCD would be less likely to act than individuals without. However, these assertions were not supported by the current research when considering obsession-relevant (semi-idiosyncratically most-disturbing) scenarios. Conversely, this study found that the use of low-risk, OCD relevant scenarios, as advocated by Foa and colleagues (2003) and Wroe and Salkovskis (2000), produced similar findings to when risks of acting were not presented, where individuals with OCD were found to be more likely to act only in low-risk, obsession-relevant scenarios whereas no differences were found in non-relevant scenarios (Reese, McNally & Willhelm, 2011; Jacobsen, Freeman & Salkovskis, 2012). As the methodological improvements made by this study produced such contrasting findings to former studies on moral-reasoning in OCD, it is suggested that the findings of Franklin and colleagues (2009), Harrison and colleagues (2012) Mancini and Gangemi (2015) and Whitton and colleagues (2014), may be due to the high risk and nomothetic content used.

It is possible that discrepancies in findings were due to variations in the exact question being asked of the participant. For example, this study asked participants what they *would* do, whereas Mancini and Gangemi (2015) asked participants what they *should* do in such scenarios and Franklin and colleagues (2009) asked both what participants 'should do' and also asked "what do you do?". There is evidence to suggest that 'should' judgements differ from individual's decisions in such scenarios (Krebs, Denton & Wark, 1997) and so these variations may explain differences in findings. However, Whitton and colleagues (2014) asked, similarly to this study, what participants *would* do and produced results that echoed Mancini & Gangemi (2015), which contests the notion that such wording variations are responsible for differing findings.

It is also possible that, as for this study scenarios when risks of acting were presented followed the same scenarios when risks of acting were not presented, participants' responses may have been influenced by their former decision. However, presenting scenarios in the converse order was not possible as participants would then be aware of potential risks for both conditions. Nevertheless such potential order effects should be considered.

The results of this study suggest that the contrasting findings of previous studies do not accurately reflect potential decision differences that would be revealed using low-risk, idiosyncratically tailored scenarios. The current research highlights the importance, when considering decision-making in OCD, of being mindful that differences in decision-making are specific to scenarios that are relevant to individuals' obsessions.

4.1.3. Hypothesis 3

Individuals' general responsibility attitudes (as rated on the Responsibility Attitudes Scale), and decision-specific judgements of responsibility, immorality and guilt, would mediate the relationship between group and likelihood of action, and thus contribute to group differences. These factors would mediate the relationship to varying degrees, and their mediating roles would change when risks of acting were and were not presented.

As decision differences between groups were found in most-disturbing scenarios when risks of acting were not and were presented, these scenarios were analysed to explore factors that may have contributed to such differences. When exploring scenarios where risks of acting were not presented using a multiple mediation model to "pit competing theories against each other" (Preacher & Hayes, 2008, p.881) by considering all potential factors, there was no direct effect of group and only general responsibility beliefs and differences in immorality judgements showed specific indirect effects on likelihood of action. That is, when risks of acting were not presented, the OCD group were more likely to act as this group held greater general responsibility beliefs (shown by lower RAS scores), and greater responsibility beliefs were associated with a greater likelihood of an individual acting to try and prevent harm. Furthermore, it seemed that all participants made assessments regarding how immoral they would feel if they did and did not act, and the OCD group were again more likely to act to prevent harm as this group showed greater differences between feelings of immorality if they did and did not act, and as greater differences was

associated with a greater likelihood of acting. For example, if a participant rated they would feel 10 responsible if they did not act, and 4 responsible if they did act, then this difference (6) meant that they would be more likely to act to prevent harm than a participant who felt 10 responsible if they did not act and 9 responsible if they did act (difference of 1). Therefore, as the OCD group reported greater general responsibility beliefs, and greater differences between feelings of immorality if they did and did not act (they would feel more immoral if they did not act and less immoral if they did act), and as these factors predicted likelihood of acting, it is concluded that these factors may in part explain why this group was more likely to act to attempt to prevent harm when risks of acting were not stated.

However, this finding must be interpreted with caution as variables of responsibility difference and guilt difference were found to show high multicollinearity and as such, the multiple mediation model, due to its methods of analysing mediators 'above and beyond' other mediators, would be susceptible to a Type II error with these variables. In an attempt to address this criticism, this analysis was repeated with one of these two variables at a time; this made no difference to findings. Potential mediators between group and decision were also explored individually to further address such concerns. These analyses found that for most-disturbing scenarios when risks of acting were not presented, all potential mediators (general responsibility beliefs, and decision-specific differences in responsibility, immorality and guilt judgements) showed significant mediating roles. For each analysis except that for general responsibility beliefs, group also significantly directly predicted likelihood of action. Therefore, these results indicate that when explored separately, general responsibility beliefs and decision specific judgements all played a mediating role in determining

the different decisions of those with and without OCD. However, as these individual analyses only considered one factor at a time, it is possible that these separate models suffered from the omitted variable problem, which can lead to potential biased parameter estimates (Judd & Kenny, 1981). Furthermore, when a more stringent α value, according to Bonferroni correction, was applied to account for multiple testing, only general responsibility beliefs and immorality judgements remained significant; significant direct effects of group remained in all analyses. Therefore, it seems to be that the findings of this study indicate that general responsibility beliefs and decision-specific feelings of immorality played a mediating role between group and decision when risks of acting were not presented; although there is an indication from individual mediating models that decision-specific judgements of responsibility and guilt also played a role, the results of this study are not strong enough to justify this conclusion. Thus, returning to the broken glass example, the results of this study indicate that an individual with OCD who is likely to move this broken glass (if this is a scenario that is relevant to their OCD) would do so owing to their heightened general responsibility beliefs, and as they would feel less immoral if they moved it and more immoral if they did not.

The notion that general responsibility beliefs played a role in the decisions made by those with and without OCD was expected from the prior literature (Salkovskis 1985; Wroe & Salkovskis, 2000), and the findings of this study lend support to the notion that responsibility beliefs mediate the difference in decisions between groups when risks of acting were not presented (Arntz et al., 2007; Lopatka & Rachman, 1995; Manciniet al., 2004; Shafran, 1997). The finding that decision-specific feelings of immorality mediate decisions above and beyond feelings of responsibility and guilt

was not expected, especially as the significance of general responsibility as a mediator may have indicated that decision-specific responsibility judgements might play a role. However, decision-specific factors that determine decision outcomes have not been widely explored, and as such, this hypothesis was largely speculative. Indeed, feelings of morality have been implicated in the wider literature (Krettenauer, et al., 2014; Rubaltelli, Lotto, Ritov & Rumiati, 2015) as well as within the field of OCD research (Harrison et al., 2012).

The high multicollinearity between the decision-specific judgements of responsibility and guilt is a finding of interest. The notion that decision-specific responsibility and guilt were rated similarly by participants echoes previous findings that responsibility and guilt are "inextricably linked" (Tallis, 1994, p.143), and develop from similar learning experiences (Tallis, 1994). This finding has further implications for theories of personal responsibility/deontological guilt and general responsibility/altruistic guilt, as it indicates that these may not be conceptually distinct from one another.

For most-disturbing scenarios when risks of acting *were* presented, the multiple mediation model, inputting all potential mediators, found no significant specific indirect effects and found that the direct effect of group, although approaching significance, did not reach $p<.05$. Exploring potential mediators individually showed no significant indirect effects. For the individual analyses of judgement differences, a significant direct effect of group was found; however, this was not found to be significant when general responsibility was assessed as a mediator. The result that the introduction of risks removed the mediating role of general responsibility and immorality judgements (both in individual simple mediation and multiple mediation

models), was not anticipated, and is of great interest. As this study found no significant mediating factor, this indicates that an alternative mechanism for the differences in groups is at play when risks of acting are presented. Therefore, the notion that the introduction of risks completely removed mediating factors that were previously significant indicates decisions for moral reasoning scenarios may be based on different factors compared to decisions for scenarios when risks of acting are not presented.

The findings of this study upheld the hypothesis only in relation to scenarios when risks of acting were not presented and only in relation to two factors; in these scenarios it seems as though general responsibility and feelings of immorality drove decisions and explained the differences in decisions made by those with and without OCD. Considering scenarios when risks of acting were presented, the findings of this study differ from the hypothesis as no factors were found to mediate the relationship between OCD and likelihood of acting. Therefore, this suggests that the factors explored within this study may only be responsible for decision differences when risks were not presented; as none of the factors explored here were found to play a significant mediating role when risks of acting were presented, an alternative mediating factor may be at play. This provides an interesting area of potential future research.

4.2. Limitations

There were several limitations of the present study that are worthy of consideration.

4.2.1. Sample issues

Firstly, although the study exceeded its aim of recruiting 25 participants for each group, the sample size used was small; a greater sample size would have enabled a more powerful analysis. Furthermore, the power analysis was conducted for the first hypothesis, and as mediation models (and particularly multiple mediation models) often require a much larger sample size than a mixed model ANCOVA, analyses for the second hypothesis are likely to be underpowered.

The small sample size was, in part, due to a high drop out rate (36 dropped out from 91 participants in total), which showed that although recruitment efforts were successful in generating initial interest in the study, these efforts did not translate to successful completion and hence usable data. It can be seen from Figure 1 in Chapter 2 that the majority of participants who dropped out (26) did so during the vignettes section of the online questionnaire, and that 14 of these dropped out when the first scenario was presented for the second time (with risks of acting). It is possible that at this point, participants did not see the risk addition to the vignette, and assumed the system was faulty. For example, it could be seen that one participant (who went on to drop out at a later stage of the vignettes) answered only the scenarios when risks of acting were not presented, and skipped the pages where risks of acting were presented. Although it is possible that this was due to a greater difficulty answering the scenarios when risks of acting were presented, it is suggested that this is more likely to be due to the participant not seeing the manipulation of the vignette, and hence believing that they had already completed it. If this research were to be conducted again, it would be worth attempting to prevent this by including a statement bringing participants' awareness to the similarity of vignettes. Participants also dropped out at later stages of

the vignettes, and it is assumed that for these participants, the length of the study exceeded their expectations. All participants who completed the vignettes went on to complete the study, thus if replicating this research, improvements to participant retention should focus on the vignette section.

The characteristics of the sample should also be considered. Recruitment methods for the OCD group meant that those participating were those who identified with an OCD diagnosis, and were actively seeking support from social media, online forums or local IAPT services. Therefore, it is possible that this skewed the sample in favour of individuals who had good insight into the disorder and the decisions that are made as a result of OCD, and who may have also been actively attempting to alter these. In addition, as this was a self-selected sample, it is possible that the opt-in nature of the study biased the sample recruited (Hewison & Haines, 2006). Therefore, a sample of individuals with OCD who were not actively seeking support or treatment, or who did not opt-in to this research, may have generated different results. However, this population are likely to be difficult to identify and access and would potentially require recruitment methods that could jeopardise ethical integrity.

Furthermore, owing to recruitment methods of online forums and social media, some participants were from overseas (including America, Canada, Australia, and Egypt), which only became apparent at the telephone call stage of the research. All of the participants in the control group lived in the UK. This difference was not anticipated but was considered to be acceptable for the current study. However, as a result, the ethnicity of the groups varied, largely due to one category: “White Other”. No participants in the control group considered themselves to be “White Other”, instead

opting for “White British”. However, “White Other” was a popular choice for the OCD Group, likely due to several of these participants living outside of the UK. Although it was possible that these two groups could be considered comparable, it was important not to minimise potential distinctions in ethnicity, and hence culture, factors that are found to influence decision-making (Christensen & Gomila, 2012; Singhapakdi et al., 1994). Therefore, these differences were managed by controlling for ethnicity (and by implication, culture) throughout analyses. However, stating inclusion criteria for the study as living in the UK, would have minimised the chance of these differences.

No ‘anxious control’ group was used for comparison throughout this study. This was considered acceptable as it has previously been found that individuals with anxiety did not differ from control participants in response to similar decisions (Wroe & Salkovskis, 2000). However, as some studies have found that individuals with OCD and individuals with anxiety disorders did not significantly differ in their moral-reasoning decisions (Whitton et al., 2014), a comparison group of individuals with anxiety disorders may have allowed an insight into whether the findings of this study were specific to individuals with OCD.

4.2.2. Measurement issues

As the only non-validated measure used, but also the measure most central to the study aims, the vignettes forgave the opportunity for issues to arise.

The first issue identified was that, as only five vignettes were used, focussing on four different obsessional concerns (with one control vignette), this did not allow a wide range of options to which participants could be semi-idiosyncratically matched.

Indeed, vignettes were shortened from eight to five due to feedback during the piloting process, and all participants individually rated their most-and least-disturbing scenarios, and so these were matched to a degree. However, some participants may not have felt that the vignettes used aligned to their specific obsessions.

Secondly, some subtypes of OCD were not accommodated by the vignettes used. For example, some forms of OCD feature no outward compulsive manifestations, but instead show symptoms of avoidance and covert compulsions (OCD-UK, 2016). Such subtypes of OCD were not reflected by the vignettes, as vignettes were based on those used by Wroe and Salkovskis (2000) who considered subtypes of checking, contamination and harm. As vignettes explored decisions to act similarly to compulsive behaviours, developing a decision-making vignette for subtypes that show few observable behavioural compulsions would likely prove a challenge. However, future research should aspire to include all OCD subtypes.

Similarly, only three potentially mediating judgements (responsibility, immorality and guilt) were explored in the present study, despite many more being proposed within the decision-making literature. Three were chosen due to feedback received from piloting, limitations of the scope of the study, and as these three seemed most relevant to the study aims. However, exploring more may have given a more comprehensive understanding of the interplay between such variables.

Vignettes presented an intrusive thought in an attempt to ensure both groups were equally aware of the potential for harm. However, owing to the idiosyncratic nature of OCD, it is possible that such intrusions did not accurately reflect the thoughts that

would have naturally occurred for individuals in the OCD group. Furthermore, although this was an attempt to control for differences in participants' awareness of harm, it is possible that participants may have had other intrusive thoughts that the researcher was unaware of, and that may have influenced their decisions and judgements.

It is imperative to note that the vignettes on which this study's findings and conclusions are based, were not validated. Given that previous research into moral reasoning utilized similar vignettes, and as it was necessary to custom-design vignettes to address the aims of this study, it was considered acceptable to use such vignettes for the purposes of this thesis. However, when interpreting such findings it is necessary to acknowledge that the vignettes on which these are based may not accurately measure what they aim to. Further exploration of the content validity, criterion-related validity, and construct validity of the vignettes and the related questionnaire, would be necessary to increase the rigor of this research.

There are also several limitations associated with using the disturbance rank as a means of semi-idiosyncratically tailoring vignettes to individuals' obsessional concerns. For example, as participants were asked to rank the vignettes in order, this negated the potential for participants to rank vignettes equally, or to express if none of the vignettes felt relevant to them. Therefore, although the researcher deduced participants' most-disturbing, and least-disturbing scenarios from these ranks, and inferred that these rankings corresponded to OCD-relevant and non-OCD-relevant scenarios, this may not have been the case.

Furthermore, although this study identified least-disturbing scenarios from participants' individual rankings, these scenarios were still from a pool of low-risk scenarios, of which all but the control vignette were considered OCD-typical. Therefore, when comparing the least-disturbing results of this study to results of previous studies of moral-reasoning, it is important to be mindful that this study used low-risk scenarios, whereas former studies utilised high-risk scenarios. Similarly, for this study, 46.2% of the OCD group chose OCD-type scenarios as their least-disturbing scenario, whereas vignettes used in former studies were not intended to be OCD-typical, and it has been previously suggested that individuals with and without OCD respond differently to *OCD-type* scenarios (Siev, Huppert & Chambless, 2010). However this suggestion was not substantiated by the present study, as no difference was found between groups despite approximately half of the OCD group choosing OCD-type content. It was still considered appropriate to compare the low-risk, OCD-type content of the least-disturbing scenarios of this study to the high-risk, non-OCD relevant scenarios of former studies as both of these scenarios are found to be those in which no differences are found between groups (as they are not idiosyncratically tailored) (Wroe & Salkovskis, 2000). The findings of this study, in which no differences were found between groups for least-disturbing scenarios, affirms this comparison, although such differences in vignettes should still be noted.

It is also important to consider the possibility that the decisions made by individuals in response to hypothetical dilemmas, such as the vignettes used, did not necessarily reflect decisions that would have been made in real-life decision-making scenarios (Teper et al., 2011). In fact, real-life moral decisions have been shown to contradict choices in hypothetical situations, and that this differs to a greater degree when there

is less contextual information (Feldman Hall et al., 2012). Therefore, as the vignettes used were relatively decontextualised hypothetical situations, this may have jeopardised ecological validity.

4.2.3. Analysis issues

During analysis several issues arose which deserve attention.

Firstly, the data were not normally distributed which seemed to arise due to the data of the OCD group being clustered around the higher end of the scale, and the control group being clustered at the lower end. This pattern of data is theoretically comprehensible, although nevertheless precluded non-adjusted parametric analyses. Regarding this non-normal distribution, although the piloting of vignettes aimed to reduce the possibility of floor and ceiling effects, it is worth considering how to improve this for future research in this area. It may be that having a larger scale (for example, 1 to 100) would help to reduce these effects; however, owing to the seemingly strong desires of the OCD group to act, and the seeming lack of a desire of the control group to act, such effects are likely to prove difficult to eradicate.

Bootstrapping was employed as a robust non-parametric method to account for non-normality. However, for both mixed model ANCOVA analyses (Hypotheses 1 and 2), SPSS v.21 did not have the facility to employ bootstrapping (Field, 2013). Alternative methods for conducting a bootstrapped mixed model ANCOVA were explored (Wilcox, 2013), however these were considered beyond the remit of this study. Therefore, it is important to note that, although results were presented for the reader's interest, these analyses violated the assumptions of a mixed model ANCOVA. In an

attempt to mitigate this violation, alternative bootstrapped analyses were presented and used for interpretation. However, a bootstrapped mixed model ANCOVA would have enabled an interaction between group and disturbance to be robustly analysed and would have been of interest.

Furthermore, regarding the analysis for the third hypothesis, the simple mediation models, used to account for the potential oversight of highly correlated variables, may raise concerns regarding multiple testing. Bonferroni corrections were used to control for overall Type I errors. However, this correction can sometimes result in Type II errors, and so this should be considered (Field, 2013). As the multiple mediation model faced suspicion due to the high multicollinearity of two variables, and as the simple mediation models used to protect the correlated variables may have been subject to the omitted variable problem (Judd & Kenny, 1981) and then Type II errors when Bonferroni correction was used, these results should be treated with caution.

4.3. Strengths

Potentially the greatest strength of this thesis is that the study addresses criticisms of former research and is the first of its kind to provide an exploration of decision-making in OCD using methodologically sound moral-reasoning scenarios (where risks of acting are presented). This study has successfully addressed a key gap within the literature and provides results that both affirm criticisms of previous studies and contest their findings.

Furthermore, this study managed to recruit a number of participants that exceeded the suggested number recommended by a priori power calculations; this indicates that the study is sufficiently powered to detect effects that were present, whilst minimising the likelihood of a Type II error. Furthermore, the number recruited for this study competes with previous studies in the area; Franklin and colleagues (2009), Mancini and Gangemi (2015) and Whitton, and colleagues (2014) all had fewer participants in their OCD and control groups.

A further robust strength of the current research was the supplementary use of the SCID-I as a clinician-administered measure to confirm the presence or absence of OCD, in adjunct to the screening provided by the self-report OCI-R. As documented in Chapter 2 (p.51-52), there are several reasons why self-report measures alone are unreliable. Therefore, as this study verified the results of the OCI-R with the SCID-I, this provides a great advantage.

4.4. Clinical and theoretical implications

To the author's knowledge, no previous study has been conducted exploring decision-making in OCD in moral-dilemma scenarios where risks of acting are presented with low-risk, semi-idiosyncratic content. Furthermore, debate has proved rife regarding contributory factors to such decision differences. Therefore the findings of this study provide a fresh contribution to current clinical and theoretical positions.

This study supported the well-founded research regarding decision differences between individuals with and without OCD (Cavedini et al., 2006; Foa et al., 2003;

Rocha et al., 2011; Sachdev & Malhi, 2005; Wroe & Salkovskis, 2000). Further, as this study found that differences in decisions between those with and without OCD were specific to their most-disturbing, and hence OCD relevant, scenarios, this result supports the assertions of Wroe and Salkovskis (2000), that OCD-sufferers do not show general decision-making differences. This is an important distinction, and it is imperative that future research exploring decision differences is mindful of these findings in order to use appropriate scenarios.

The findings of this study potentially indicate that results of previous research into moral-reasoning in OCD are due to the high risk, nomothetic scenarios used, rather than due to an accurate reflection of decision differences between individuals with and without OCD. That is, although not considered by previous authors, the scenarios used in these studies in fact constituted scenarios where, owing to their lack of individual relevance and high-risk nature, decision differences are not usually found between individuals with and without OCD. The present study offers a unique contribution that, when using content where decision differences are typically found, despite the presentation of risks of acting, individuals with OCD were still more likely than individuals without OCD to act to attempt to prevent harm. This echoes the pattern of decision-making found when risks were not presented, where individuals with OCD were more likely than individuals without OCD to act to prevent harm only in their most-disturbing scenarios. Although this study produced findings which appear to be a novel and contrasting contribution to the current literature, there were several fundamental limitations of this study (for example, a small sample size, an unvalidated measure, and analysis issues due to variables that were not normally

distributed), which mean that caution must be applied when making comparisons between presented findings and previous research.

The finding that individuals with OCD were more likely to act to prevent harm than individuals without OCD when risks of acting were presented, opposes the suggestions of Greene's Dual Processing Theory (2008). This theory's key principles propose that individuals are less likely to act to attempt to prevent harm if they experience a heightened negative affective response to a scenario, and if they show difficulties in cognitive control. Although Greene (2008) does not assert about how this theory applies to individuals with OCD directly, this group would be expected to exhibit both a heightened negative affective response (Cougle, et al., 2013) and more difficulties in cognitive control (Griesberg & McKay, 2003) than the control group; thus this theory implies that individuals with OCD would be less likely than individuals without, to act to prevent harm in their most-disturbing scenarios. As the converse was found, these results contest the inferences that can be drawn from this theory regarding individuals with OCD.

The finding that there was still a significant difference between groups in most-disturbing scenarios when risks of acting were stated also contests the theory that individuals with OCD make different decisions (and hence engage in compulsions) due to individuals with OCD overestimating associated risks (Steketee et al., 1998). As in these scenarios, risks of acting were made explicit, thereby minimising the possibility for differing interpretations, if the difference in decisions of those with and without OCD was due to different interpretations of risks alone, it would be expected that there would be no difference between groups (Pushkarskaya et al., 2015). As

differences were found for most-disturbing scenarios both when risks of acting were and were not presented, this contests this premise. However, it is possible that as the risks stated specified “some people” and “fewer, other people”, rather than quantifying exactly how many, this left some room for interpretation.

The findings of this study also have several potential implications for the cognitive model of OCD (Salkovskis, 1985, 1999; Salkovksis et al., 1998; Figure 1). Firstly, when risk of acting were not presented, the finding that general responsibility beliefs mediated decision differences of individuals with and without OCD supports the cognitive model’s suggestion that responsibility beliefs are key in the disorder. However, this study found that this was only the case for general responsibility beliefs (as measured on RAS), as opposed to decision-specific responsibility appraisals. The cognitive model suggests that heightened general responsibility beliefs lead to individuals with OCD feeling more responsible following an intrusion, and that this leads them to be more likely to act to attempt to prevent harm. Although this study supports that heightened general responsibility beliefs lead to individuals with OCD being more likely to act to prevent harm, this study did not find that decision-specific feelings of responsibility played a specific role in decision differences. Furthermore, the cognitive model of OCD does not explicitly acknowledge a role for decision-specific feelings of immorality, a factor which this study indicates may influence the decision differences of those with and without OCD. Finally, although the findings of this study support that general responsibility beliefs play a role in decision differences when risks of acting are not presented, when risks of acting *are* presented, the findings of this study indicate that general responsibility beliefs no longer play a mediating role. Therefore, this potentially indicates that the cognitive model had less

relevance when considering moral-reasoning scenarios where acting to prevent harm causes other, lesser, harm.

Furthermore, previous studies on moral-reasoning have proposed explanatory factors to justify findings that individuals with OCD are *less* likely to act than individuals without OCD. For example, it has been proposed that individuals with OCD are more likely to make decisions according to deontological guilt (Mancini & Gangemi, 2015) or personal responsibility (Franklin et al., 2009). Whilst these previous findings may be applicable to non-OCD-relevant scenarios, this study demonstrated that, when considering everyday low-risk scenarios, the OCD group were *more* likely to act to prevent harm in their OCD-relevant scenarios. As such, suggestions that these factors are generalised to decision-making in OCD is not condoned by this study. Instead, by implication, the converses of these factors (such as altruistic guilt and general responsibility, both of which aim for least harm) are advocated by this study for individuals with OCD in moral-reasoning scenarios relevant to their OCD. However, these factors were not explored directly and so further comment cannot be made.

It may also be of clinical interest that the current study found individuals with OCD to be more likely to act to attempt to prevent harm when risks of acting were not presented due to beliefs around general responsibility, and due to decision-specific feelings of immorality.

Responsibility beliefs are already widely used as a focus in therapeutic work (Salkovskis, 2007), and this study affirms the benefits of this approach. For example, the findings of this study supports the theory that inflated responsibility beliefs are

associated with decision-making differences (Salkovskis, 1985) and further that heightened general responsibility beliefs mediate the decision differences of those with and without OCD (Arntz et al., 2007; Lopatka & Rachman, 1995; Mancini et al., 2004; Shafran, 1997). As this study did not distinguish between subtypes of OCD in analysis, further comment regarding whether responsibility is more strongly associated with some subtypes than others (Clark, 2012) cannot be provided. However, there does seem to be a distinction between general responsibility beliefs and decision-specific responsibility judgements, the latter of which was not significantly associated with decisions in this study. Previous research suggests that general responsibility beliefs and intrusion-related responsibility interpretations are correlated (Salkovskis et al., 2000) and that both are associated with OCD; the finding of this study, that decision-specific responsibility judgements did not mediate decisions, therefore is not in keeping with this suggestion and requires further investigation to understand. However, the support that this study provides theories regarding heightened general responsibility beliefs in OCD in turn has implications for treatment, and emphasises that these beliefs may be used for early identification and intervention for those at risk of developing the disorder (Salkovskis et al., 1999; Lawrence & Williams, 2011).

Findings also provide a fresh proposal that a focus on feelings of immorality when facing compulsions may be beneficial to clients. It is not suggested that an explicit focus on these areas is necessary to see clinical improvements, as exclusively behavioural approaches to OCD treatment have been found to significantly change beliefs, despite not being specifically focussed on (Emmelkamp, van Oppen & van Balkom, 2002); as such, feelings of immorality may shift through behavioural work

alone. However, if therapy intends to focus on cognitions, immorality could be considered alongside responsibility, as a potentially influential factor.

Another important consideration is that for all participants the introduction of risks of acting, renders the potential explanatory factors of general responsibility and immoral judgements seemingly obsolete. For these decision differences, it appears that some other factor is at play; and this opens the possibility of an exploration of alternative factors.

4.5. Future directions

The present study provides the first of its kind to investigate decision-making in OCD when risks of acting were presented with low risk, semi-idiosyncratic scenarios; it is hoped that the methodological improvements noted here allow for a broader investigation into decision-making in OCD within this framework.

It would be interesting to assess whether a replication of this study, with the methodological improvements noted within the limitations section of this chapter, would produce similar results. Particular improvements would include: more vignettes targeted towards a wider range of OCD subtypes; a larger sample size recruited through more varying means; contextualising scenarios to increase ecological validity or using real scenarios as opposed to hypothetical ones; using an anxious comparison group; and potentially using more robust methods of analysis (such as a bootstrapped Mixed Model ANCOVA, which can be conducted through

‘R’). Although these were beyond the remit of the present thesis, it would be of interest whether these improvements would alter the results found.

It would also be of interest to explore the concept of immorality further, and especially the role this plays in decision-making in OCD. In comparison to responsibility beliefs in OCD, there is substantially less literature regarding feelings of immorality. As this study indicates that immorality judgements may play a role in the decisions, and hence potentially the behavioural compulsions, of individuals with OCD, this deserves further investigation.

To progress our understanding of OCD further, it also seems necessary to explore factors that contribute to decision differences when risks of acting are presented. Owing to the number of suggested factors within the literature that contribute to both decision making in OCD, and moral-reasoning in the wider context, and the relatively novel field of conjoining these two areas, it may be appropriate to investigate this on an exploratory, potentially qualitative, basis. Alternative explanatory factors worthy of consideration include factors suggested to affect decision-making in OCD: desire for control, intolerance of uncertainty, negative beliefs about consequences of anxiety, negative beliefs about capacity to cope (Steketee, Frost & Cohen, 1998); and theories around moral-reasoning: the Dual Process Hypothesis of Moral Judgement (Greene et al., 2008); the Motivational Approach (Moll, Oliveira-Souza, Zahn, 2008); and the Five Foundations Account (Haidt & Graham, 2007).

The decision-making juncture of whether to act to prevent harm or not, provides a key opportunity for an increased theoretical understanding of what drives compulsions in

individuals with OCD. If able to understand the factors that drive the decision to engage in compulsions, clinicians would be better armed to help clients understand and battle against this key maintenance cycle in the disorder.

4.6. Conclusion

This study provides a successful attempt to address some of the criticisms within the moral-reasoning literature in order to present the first known study to document how OCD and non-clinical participants compare on decisions made when risks of acting are presented, and when scenarios used the low-risk, semi-idiosyncratic content that individuals with and without OCD are found to differ on. Furthermore, it provides an exploratory insight into the factors that may contribute to decision differences, an area where debate remains rife. The results of this research add weight to current literature suggesting individuals with OCD are more likely to act than individuals without OCD, only in scenarios about which they are most concerned (Wroe & Salkovskis, 2000). Findings also contradict previous suggestions that the introduction of risks of acting result in individuals with OCD being less likely to act than their non-clinical counterparts (Mancini & Gangemi, 2015; Whitton, et al., 2014); instead, it was found that when risks of acting were presented, results echo those found when risks were not presented, in that individuals with OCD were more likely to act only in their most-disturbing scenarios. When risks of acting were not stated, differences between groups were attributable to mediating effects of general responsibility beliefs and decision-specific judgements of immorality. However, when risks of acting were presented, these factors no longer mediated between group and decision. Limitations

of the study, mainly regarding the sample, vignettes used and analytical methods mean that caution must be applied when interpreting results. However, despite such limitations, several conclusions can be drawn which include supporting and novel contributions to the literature, implications for clinical practice, and exciting new areas for future research.

The juncture between decision-making differences in OCD and moral-reasoning dilemmas remains an exciting landscape for exploration. It is hoped that this thesis has a role in paving the way for further routes of investigation: into replicating this research to justify its conclusions; into the role of immorality in decision-making in OCD; or into the factors that contribute to decision differences when risks of acting are presented. These avenues may hold exciting discoveries regarding decision-making in OCD, which in turn may further our theoretical understanding of the debilitating disorder, and contribute to clinical improvements.

REFERENCES

Abramowitz, J. S., & Deacon, B. J. (2006). Psychometric properties and construct validity of the Obsessive–Compulsive Inventory—Revised: Replication and extension with a clinical sample. *Journal of Anxiety Disorders, 20*(8), 1016-1035.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Retrieved from http://dsm.psychiatryonline.org/book.aspx?bookid=556

Arntz, A., Voncken, M., & Goosen, A. C. (2007). Responsibility and obsessive–compulsive disorder: An experimental test. *Behaviour Research and Therapy, 45*(3), 425-435.

Ashbaugh, A. R., Gelfand, L. A., & Radomsky, A. S. (2006). Interpersonal aspects of responsibility and obsessive compulsive symptoms. *Behavioural and Cognitive Psychotherapy, 34*(02), 151-163.

Basco, M., R., Bostic, J., Q., & Davies, D. (2000). Methods to improve diagnostic accuracy in a community mental health setting. *Americal Journal of Psychiatry,* (157), 1599-1605.

Beck, A. T., Brown, G., Steer, R. A., & Weissman, A. N. (1991). Factor analysis of the dysfunctional attitude scale in a clinical population. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 3*(3), 478.

Beech, H., & Liddell, A. (1974). Decision-making, mood states and ritualistic behaviour among obsessional patients. *Obsessional States,* , 143-160.

Berkovits, I., Hancock, G. R., & Nevitt, J. (2000). Bootstrap resampling approaches for repeated measure designs: Relative robustness to sphericity and normality violations. *Educational and Psychological Measurement, 60*(6), 877-892.

Botvinick, M. M., Braver, T. S., Barch, D. M., Carter, C. S., & Cohen, J. D. (2001). Conflict monitoring and cognitive control. *Psychological Review, 108*(3), 624.

Bowerman, B. L., & O'Connell, R. T. (1990). *Linear statistical models: An applied approach* PWS-Kent Publishing Company.

Bradley, J. V. (1982). The insidious L-shaped distribution. *Bulletin of the Psychonomic Society, 20*(2), 85-88.

Briggs, N. E. (2006). *Estimation of the Standard Error and Confidence Interval of the Indirect Effect in Multiple Mediator Models,*

Carr., A., T. (1974). Compulsive neurosis: A review of the literature. *Psychological Bulletin, 81,* 311-318.

Cavedini, P., Gorini, A., & Bellodi, L. (2006). Understanding obsessive–compulsive disorder: Focus on decision making. *Neuropsychology Review, 16*(1), 3-15.

Christensen, J., & Gomila, A. (2012). Moral dilemmas in cognitive neuroscience of moral decision-making: A principled review. *Neuroscience & Biobehavioral Reviews, 36*(4), 1249-1264.

Clark, D. (2012). *Cognitive-behavioural therapy for OCD* Guildford Press.

Clark-Carter, D. (2009). *Quantitative psychological research: A student's handbook* (3rd, revised ed.). Hove: Psychology Press.

Cochran, W. G. (1952). The $\chi 2$ test of goodness of fit. *The Annals of Mathematical Statistics*, 315-345.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2, revised ed.) Routledge.

Coles, M. E., Cook, L. M., & Blake, T. R. (2007). Assessing obsessive compulsive symptoms and cognitions on the internet: Evidence for the comparability of

paper and internet administration. *Behaviour Research and Therapy, 45*(9), 2232-2240.

Cougle, J. R., Lee, H., & Salkovskis, P. M. (2007). Are responsibility beliefs inflated in non-checking OCD patients? *Journal of Anxiety Disorders, 21*(1), 153-159.

Cougle, J. R., Timpano, K. R., Sarawgi, S., Smith, C. M., & Fitch, K. E. (2013). A multi-modal investigation of the roles of distress tolerance and emotional reactivity in obsessive-compulsive symptoms. *Anxiety, Stress & Coping, 26*(5), 478-492.

Davidson, R., & MacKinnon, J. G. (2006). The power of bootstrap and asymptotic tests. *Journal of Econometrics, 133*(2), 421-441.

Duke, A. A., & Bègue, L. (2015). The drunk utilitarian: Blood alcohol concentration predicts utilitarian responses in moral dilemmas. *Cognition, 134*, 121-127.

Echambi, J., R., & Hess, J., D. (2007). Mean-centering does not alleviate collinearity problems in moderated multiple regression models. *Marketing Research, 26*, 438-445.

Efron, B., & Tibshirani, R. J. (1994). *An introduction to the bootstrap* CRC press.

Emmelkamp, P. M., van Oppen, P., & Van Balkom, A. (2002). Cognitive changes in patients with obsessive compulsive rituals treated with exposure in vivo and response prevention. *Cognitive Approaches to Obsessions and Compulsions: Theory, Assessment, and Treatment*, , 391-401.

Federici, A., Summerfeldt, L. J., Harrington, J. L., McCabe, R. E., Purdon, C. L., Rowa, K., et al. (2010). Consistency between self-report and clinician-administered versions of the Yale-brown Obsessive–Compulsive scale. *Journal of Anxiety Disorders, 24*(7), 729-733.

Feldman-Hall, O., Mobbs, D., Evans, D., Hiscox, L., Navrady, L., & Dalgleish, T. (2012). What we say and what we do: The relationship between real and hypothetical moral choices. *Cognition, 123*(3), 434-441.

Field, A. (2009). *Discovering statistics using SPSS* (illustrated, reprint ed.) SAGE Publications.

First, M. B. (2014). *Official website for the structured clinical interview for DSM disorders (SCID)* 2015, from http://scid4.org/index.html

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. (1997).*User's guide for the structured clinical interview for DSM-IV axis I disorders SCID-I: Clinician version* American Psychiatric Pub.

Fitch, K. E., & Cougle, J. R. (2013). An evaluation of obsessive beliefs as predictors of performance on in vivo assessments of Obsessive–Compulsive symptoms. *Cognitive Therapy and Research*, 1-14.

Foa, E. B., Huppert, J. D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G., et al. (2002). The obsessive-compulsive inventory: Development and validation of a short version. *Psychological Assessment, 14*(4), 485.

Foa, E. B., Mathews, A., Abramowitz, J. S., Amir, N., Przeworski, A., Riggs, D. S., et al. (2003). Do patients with Obsessive–Compulsive disorder have deficits in decision-making? *Cognitive Therapy and Research, 27*(4), 431-445.

Foa, E. B., Sacks, M. B., Tolin, D. F., Prezworski, A., & Amir, N. (2002). Inflated perception of responsibility for harm in OCD patients with and without checking compulsions: A replication and extension. *Journal of Anxiety Disorders, 16*(4), 443-453.

Forrester, E., Wilson, C., & Salkovskis, P. M. (2002). The occurrence of intrusive thoughts transforms meaning in ambiguous situations: The occurrence of

intrusive thoughts transforms meaning in ambiguous situations: An experimental study an experimental study. *Behavioural and Cognitive Psychotherapy, 30*(02), 143-152.

Franklin, S. A., McNally, R. J., & Riemann, B. C. (2009). Moral reasoning in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 23*(5), 575-577.

Frost, R. O., Steketee, G., Cohn, L., & Griess, K. (1994). Personality traits in subclinical and non-obsessive-compulsive volunteers and their parents. *Behaviour Research and Therapy, 32*(1), 47-56.

Fumagalli, M., Ferrucci, R., Mameli, F., Marceglia, S., Mrakic-Sposta, S., Zago, S., et al. (2010). Gender-related differences in moral judgments. *Cognitive Processing, 11*(3), 219-226.

Gönner, S., Leonhart, R., & Ecker, W. (2008). The obsessive–compulsive inventory-revised (OCI-R): Validation of the german version in a sample of patients with OCD, anxiety disorders, and depressive disorders. *Journal of Anxiety Disorders, 22*(4), 734-749.

Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleischmann, R. L., Hill, C. L., et al. (1989). The Yale-brown obsessive compulsive scale: I. development, use, and reliability. *Archives of General Psychiatry, 46*(11), 1006-1011.

Grabill, K., Merlo, L., Duke, D., Harford, K., Keeley, M. L., Geffken, G. R., et al. (2008). Assessment of obsessive–compulsive disorder: A review. *Journal of Anxiety Disorders, 22*(1), 1-17.

Greene, J. D. (2007). Why are VMPFC patients more utilitarian? A dual-process theory of moral judgment explains. *Update, 11*(8), 322-323.

Greene, J. D. (2015). The rise of moral cognition. *Cognition, 135*, 39-42.

Greene, J. D., Morelli, S. A., Lowenberg, K., Nystrom, L. E., & Cohen, J. D. (2008). Cognitive load selectively interferes with utilitarian moral judgment. *Cognition, 107*(3), 1144-1154.

Greene, J. D., Nystrom, L. E., Engell, A. D., Darley, J. M., & Cohen, J. D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron, 44*(2), 389-400.

Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science (New York, N.Y.), 293*(5537), 2105-2108.

Greisberg, S., & McKay, D. (2003). Neuropsychology of obsessive-compulsive disorder: A review and treatment implications. *Clinical Psychology Review, 23*(1), 95-117.

Haidt, J., & Graham, J. (2007). When morality opposes justice: Conservatives have moral intuitions that liberals may not recognize. *Social Justice Research, 20*(1), 98-116.

Hajcak, G., Huppert, J. D., Simons, R. F., & Foa, E. B. (2004). Psychometric properties of the OCI-R in a college sample. *Behaviour Research and Therapy, 42*(1), 115-123.

Harrison, B. J., Pujol, J., Soriano-Mas, C., Hernández-Ribas, R., López-Solà, M., Ortiz, H., et al. (2012). Neural correlates of moral sensitivity in obsessive-compulsive disorder. *Archives of General Psychiatry, 69*(7), 741-749.

Hauser, M., Cushman, F., Young, L., Kang-Xing Jin, R., & Mikhail, J. (2007).A dissociation between moral judgments and justifications. *Mind & Language, 22*(1), 1-21.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*(4), 408-420.

Hayes, A. F. (2012). *PROCESS: A Versatile Computational Tool for Observed Variable Mediation, Moderation, and Conditional Process Modelling.*

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* Guilford Press.

Heitjan, D. F. (1997). Annotation: What can be done about missing data? Approaches to imputation. *American Journal of Public Health, 87*(4), 548-550.

Hewison, J., & Haines, A. (2006). Overcoming barriers to recruitment in health research. *BMJ (Clinical Research Ed.), 333*(7562), 300-302.

Hodgson, R. J., & Rachman, S. (1977). Obsessional-compulsive complaints. *Behaviour Research and Therapy, 15*(5), 389-395.

IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.

International OCD foundation, 2016, from www.iocdf.org

Jacobsen, P., Freeman, D., & Salkovskis, P. (2012). Reasoning bias and belief conviction in obsessive-compulsive disorder and delusions: Jumping to conclusions across disorders? *British Journal of Clinical Psychology, 51*(1), 84-99.

Jones, M. K., & Menzies, R. G. (1997). The cognitive mediation of obsessive-compulsive handwashing. *Behaviour Research and Therapy, 35*(9), 843-850.

Judd, C. M., & Kenny, D. A. (1981). Process analysis estimating mediation in treatment evaluations. *Evaluation Review, 5*(5), 602-619.

Kabirnezhad, S., Mahmoud, A. M., & Sharifi, M. A. (2010). Validity and reliability of the responsibility attitude scale (RAS).

Koechlin, E., Ody, C., & Kouneiher, F. (2003). The architecture of cognitive control in the human prefrontal cortex. *Science (New York, N.Y.), 302*(5648), 1181-1185.

Kranzler, H., R., Kadden, R., M., & Babor, T., F. (1996). Validity of the SCID in substance abuse patients. *Addiction, 91*(6), 859-868.

Krebs, D. L., Denton, K., & Wark, G. (1997). The forms and functions of real-life moral decision-making. *Journal of Moral Education, 26*(2), 131-145.

Krettenauer, T., Colasante, T., Buchmann, M., & Malti, T. (2014). The development of moral emotions and decision-making from adolescence to early adulthood: A 6-year longitudinal study. *Journal of Youth and Adolescence, 43*(4), 583-596.

Larson-Hall, J. (2015). *A guide to doing statistics in second language research using SPSS and R* (revised ed.) Routledge.

Lawrence, N. S., Wooderson, S., Mataix-Cols, D., David, R., Speckens, A., & Phillips, M. L. (2006). Decision making and set shifting impairments are associated with distinct symptom dimensions in obsessive-compulsive disorder. *Neuropsychology, 20*(4), 409.

Lawrence, P. J., & Williams, T. I. (2011). Pathways to inflated responsibility beliefs in adolescent obsessive-compulsive disorder: A preliminary investigation. *Behavioural and Cognitive Psychotherapy, 39*(2), 229.

Lobbestael, J., Leurgans, M., & Arntz, A. (2011). Inter-rater reliability of the structured clinical interview for DSM-IV axis I disorders (SCID I) and axis II disorders (SCID II). *Clinical Psychology & Psychotherapy, 18*(1), 75-79.

Lopatka, C., & Rachman, S. (1995). Perceived responsibility and compulsive checking: An experimental analysis. *Behaviour Research and Therapy, 33*(6), 673-684.

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science, 1*(4), 173-181.

Mancini, F., D'Olimpio, F., & Cieri, L. (2004). Manipulation of responsibility in non-clinical subjects: Does expectation of failure exacerbate obsessive–compulsive behaviors? *Behaviour Research and Therapy, 42*(4), 449-457.

Mancini, F., & Gangemi, A. (2015). Deontological guilt and obsessive compulsive disorder. *Journal of Behavior Therapy and Experimental Psychiatry, 49*, 157-163.

Maner, J. K., Richey, J. A., Cromer, K., Mallott, M., Lejuez, C. W., Joiner, T. E., et al. (2007). Dispositional anxiety and risk-avoidant decision-making. *Personality and Individual Differences, 42*(4), 665-675.

McKnight, P. E., McKnight, K. M., Sidani, S., & Figueredo, A. J. (2007). *Missing data: A gentle introduction* Guilford Press.

Menard, S. (1995). *Applied logistic regression analysis: Sage university series on quantitative applications in the social sciences*. Thousand Oaks, CA: Sage.

Mendez, M. F., Anderson, E., & Shapira, J. S. (2005). An investigation of moral judgement in frontotemporal dementia. *Cognitive and Behavioral Neurology : Official Journal of the Society for Behavioral and Cognitive Neurology, 18*(4), 193-197.

Menzies, L., Chamberlain, S. R., Laird, A. R., Thelen, S. M., Sahakian, B. J., & Bullmore, E. T. (2008). Integrating evidence from neuroimaging and neuropsychological studies of obsessive-compulsive disorder: The orbitofronto-striatal model revisited. *Neuroscience & Biobehavioral Reviews, 32*(3), 525-549.

Menzies, R. G., Harris, L. M., Cumming, S. R., & Einstein, D. A. (2000). The relationship between inflated personal responsibility and exaggerated danger

expectancies in obsessive–compulsive concerns. *Behaviour Research and Therapy, 38*(10), 1029-1037.

Miu, A. C., Heilman, R. M., & Houser, D. (2008). Anxiety impairs decision-making: Psychophysiological evidence from an Iowa gambling task. *Biological Psychology, 77*(3), 353-358.

Moll, J., Oliveira-Souza, D., & Zahn, R. (2008).The neural basis of moral cognition. *Annals of the New York Academy of Sciences, 1124*(1), 161-180.

Moritz, S., & Jelinek, L. (2009). Inversion of the "unrealistic optimism" bias contributes to overestimation of threat in obsessive-compulsive disorder. *Behavioural and Cognitive Psychotherapy, 37*(02), 179-193.

Moritz, S., & Pohl, R. F. (2009). Biased processing of threat-related information rather than knowledge deficits contributes to overestimation of threat in obsessive-compulsive disorder. *Behavior Modification, 33*(6), 763-777.

Nielen, M., Veltman, D., De Jong, R., Mulder, G., & Den Boer, J. (2002). Decision making performance in obsessive compulsive disorder. *Journal of Affective Disorders, 69*(1), 257-260.

OCD Action, 2016, from www.ocdaction.org.uk

OCD-UK. *Understanding obsessive-compulsive disorder (OCD).* Retrieved May, 2015, from http://www.ocduk.org/ocd

Olley, A., Malhi, G., & Sachdev, P. (2007). Memory and executive functioning in obsessive–compulsive disorder: A selective review. *Journal of Affective Disorders, 104*(1), 15-23.

Pavelko, R. L., & Myrick, J. G. (2015). That's so OCD: The effects of disease trivialization via social media on user perceptions and impression formation. *Computers in Human Behavior, 49*, 251-258.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.

Prince, M. (2003). Measurement in psychiatry. In M. Prince, R. Stewart, T. Ford & M. Hotopf (Eds.), *Practical psychiatric epidemiology* (pp. 13-41). Oxford: Oxford University Press.

Priva, U. C., & Austerweil, J. L. (2015). Analyzing the history of cognition using topic models. *Cognition, 135*, 4-9.

Pushkarskaya, H., Tolin, D., Ruderman, L., Kirshenbaum, A., Kelly, J. M., Pittenger, C., et al. (2015). Decision-making under uncertainty in obsessive–compulsive disorder. *Journal of Psychiatric Research, 69*, 166-173.

Rachman, S., J., & de Silva, P. (1978). Abnormal and normal obsessions. *Behaviour Research and Therapy, 16*, 233-248.

Rachman, S., & Hodgson, R. (1980). *Obsessions and compulsions*. NJ: Prentice-Hall.

Rachman, S., & Shafran, R. (1998). Cognitive and behavioral features of obsessive–compulsive disorder. *Obsessive–compulsive Disorder: Theory, Research, and Treatment*, , 51-78.

Reese, H. E., McNally, R. J., & Wilhelm, S. (2011). Probabilistic reasoning in patients with body dysmorphic disorder. *Journal of Behavior Therapy and Experimental Psychiatry, 42*(3), 270-276.

Rocha, F. F. d., Alvarenga, N. B., Malloy-Diniz, L., & Corrêa, H. (2011). Decision-making impairment in obsessive-compulsive disorder as measured by the Iowa gambling task. *Arquivos De Neuro-Psiquiatria, 69*(4), 642-647.

Royal Holloway University of London Psychology Online Survey (Select Survey Advanced v8.6.4) System [Computer Software], released 2009. Retrieved from http://www.pc.rhul.ac.uk/sites/Surveys/SurveyList.asp.

Rubaltelli, E., Lotto, L., Ritov, I., & Rumiati, R. (2015). Moral investing: Psychological motivations and implications. *Judgment and Decision Making, 10*(1), 64.

Ruscio, A., Stein, D., Chiu, W., & Kessler, R. (2010). The epidemiology of obsessive-compulsive disorder in the national comorbidity survey replication. *Molecular Psychiatry, 15*(1), 53-63.

Sachdev, P. S., & Malhi, G. S. (2005). Obsessive–compulsive behaviour: A disorder of decision-making. *Australian and New Zealand Journal of Psychiatry, 39*(9), 757-763.

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

Salkovskis, P. M., & Campbell, P. (1994). Thought suppression induces intrusion in naturally occurring negative intrusive thoughts. *Behaviour Research and Therapy, 32*(1), 1-8.

Salkovskis, P. M., Westbrook, D., Davis, J., Jeavons, A., & Gledhill, A. (1997). Effects of neutralizing on intrusive thoughts: An experiment investigating the etiology of obsessive-compulsive disorder. *Behaviour Research and Therapy, 35*(3), 211-219.

Salkovskis, P. M., Wroe, A., Gledhill, A., Morrison, N., Forrester, E., Richards, C., et al. (2000). Responsibility attitudes and interpretations are characteristic of obsessive compulsive disorder. *Behaviour Research and Therapy, 38*(4), 347-372.

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*(11), 1055-1072.

Shafran, R. (1997). The manipulation of responsibility in obsessive-compulsive disorder. *British Journal of Clinical Psychology, 36*(3), 397-407.

Shear, M. K., Greeno, C., Kang, J., Ludewig, D., Frank, E., Swartz, H. A., et al. (2000). Diagnosis of nonpsychotic patients in community clinics. *American Journal of Psychiatry,*

Shieh, G. (2011). Clarifying the role of mean centering in multicollinearity of interaction effects. *British Journal of Mathematical and Statistical Psychology, 64*, 462-477.

Siev, J., Huppert, J. D., & Chambless, D. L. (2010). Obsessive–compulsive disorder is associated with less of a distinction between specific acts of omission and commission. *Journal of Anxiety Disorders, 24*(8), 893-899.

Singhapakdi, A., Vitell, S. J., & Leelakulthanit, O. (1994). A cross-cultural study of moral philosophies, ethical perceptions and judgements: A comparison of American and Thai marketers. *International Marketing Review, 11*(6), 65-78.

Skre, I., Onstad, S., Torgersen, S., & Kringlen, E. (1991). High interrater reliability for the structured clinical interview for DSM-III-R axis I (SCID-I). *Acta Psychiatrica Scandinavica, 84*(2), 167-173.

Spranca, M., Minsk, E., & Baron, J. (1991). Omission and commission in judgment and choice. *Journal of Experimental Social Psychology, 27*(1), 76-105.

Steiner, J. L., Tebes, J. K., Sledge, W. H., & Walker, M. L. (1995). A comparison of the structured clinical interview for DSM-III-R and clinical diagnoses. *The Journal of Nervous and Mental Disease, 183*(6), 365-369.

Steketee, G., Frost, R. O., & Cohen, I. (1998). Beliefs in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 12*(6), 525-537.

Tabachnick, B., & Fidell, L. (2013). *Using multivariate statistics* (6, illustrated ed.) Pearson Education.

Tallis, F. (1994). Obsessions, responsibility and guilt: Two case reports suggesting a common and specific aetiology. *Behaviour Research and Therapy, 32*(1), 143-145.

Taylor, J., & Purdon, C. (2016). Responsibility and hand washing behaviour. *Journal of Behavior Therapy and Experimental Psychiatry, 51*, 43-50.

Teper, R., Inzlicht, M., & Page-Gould, E. (2011). Are we more moral than we think? exploring the role of affect in moral behavior and moral forecasting. *Psychological Science, 22*(4), 553-558.

Tlach, L., Wüsten, C., Daubmann, A., Liebherz, S., Härter, M., & Dirmaier, J. (2015). Information and decision-making needs among people with mental disorders: A systematic review of the literature. *Health Expectations, 18*(6), 1856-1872.

Trémolière, B., De Neys, W., & Bonnefon, J. (2012). Mortality salience and morality: Thinking about death makes people less utilitarian. *Cognition, 124*(3), 379-384.

Valdesolo, P., & DeSteno, D. (2006). Manipulations of emotional context shape moral judgment. *Psychological Science, 17*(6), 476-477.

Wang, X. T. (1996). Evolutionary hypotheses of risk-sensitive choice: Age differences and perspective change. *Ethology and Sociobiology, 17*(1), 1-15.

Wheaton, M. G., Abramowitz, J. S., Berman, N. C., Riemann, B. C., & Hale, L. R. (2010). The relationship between obsessive beliefs and symptom dimensions in obsessive-compulsive disorder. *Behaviour Research and Therapy, 48*(10), 949-954.

Whitton, A. E., Henry, J. D., & Grisham, J. R. (2014). Moral rigidity in obsessive-compulsive disorder: Do abnormalities in inhibitory control, cognitive flexibility and disgust play a role? *Journal of Behavior Therapy and Experimental Psychiatry, 45*(1), 152-159.

Wilcox, R. (2012). *Introduction to robust estimation and hypothesis testing* (illustrated ed.) Academic Press.

Williams, J. B., Gibbon, M., First, M. B., Spitzer, R. L., Davies, M., Borus, J., et al. (1992). The structured clinical interview for DSM-III-R (SCID): II. multisite test-retest reliability. *Archives of General Psychiatry, 49*(8), 630-636.

Williams, J., & MacKinnon, D. P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Structural Equation Modeling, 15*(1), 23-51.

Williams, M., Davis, D. M., Thibodeau, M. A., & Bach, N. (2013). Psychometric properties of the obsessive-compulsive inventory revised in african americans with and without obsessive-compulsive disorder. *Journal of Obsessive-Compulsive and Related Disorders, 2*(4), 399-405.

Wroe, A. L., & Salkovskis, P. M. (2000). Causing harm and allowing harm: A study of beliefs in obsessional problems. *Behaviour Research and Therapy, 38*(12), 1141-1162.

Wroe, A. L., Salkovskis, P. M., & Richards, H. C. (2000). “Now I know it could happen, I have to prevent it”: A clinical study of the specificity of intrusive

thoughts and the decision to prevent harm. *Behavioural and Cognitive Psychotherapy, 28*(01), 63-70.

Zanarini, M. C., & Frankenburg, F. R. (2001). Attainment and maintenance of reliability of axis I and II disorders over the course of a longitudinal study. *Comprehensive Psychiatry, 42*(5), 369-374.

Zeelenberg, M., Pligt, J. v. d., & de Vries, N. K. (2000). Attributions of responsibility and affective reactions to decision outcomes. *Acta Psychologica, 104*(3), 303-315.

Zhang, L., Dong, Y., Ji, Y., Zhu, C., Yu, F., Ma, H., et al. (2015). Dissociation of decision making under ambiguity and decision making under risk: A neurocognitive endophenotype candidate for obsessive–compulsive disorder. Progress in Neuro-Psychopharmacology and Biological Psychiatry, 57, 60-68.

APPENDICES

A. Advertising information

Decision Making and Judgements in OCD

Research by Zoe Kindynis and Dr Abigail Wroe, Royal Holloway University of London

A study looking into how those experiencing OCD make decisions in everyday scenarios when there are risks of doing something and doing nothing.

I am a Trainee Clinical Psychologist at Royal Holloway University working alongside Dr Abigail Wroe. We are looking for people who are currently experiencing symptoms of Obsessive Compulsive Disorder (OCD) and would like to take part in this study.

What is the purpose of the study?
We know that people with OCD tend to make different decisions to people without OCD in everyday scenarios that trigger their OCD. This study intends to explore how people with and without OCD make decisions in these scenarios. We are particularly interested in how people make decisions when both options (to do something or do nothing) result in some harm.

What would taking part involve?
If you agree to take part, you will be asked to complete a number of questionnaires. Some of these will be about symptoms of OCD, and some questions will give you a scenario and ask what you would do and how you would feel. The questionnaires will take about 30-40 minutes in total, and can be completed online or if you prefer, I can send you a paper copy and a freepost return envelope. Following this, I will arrange to have a short telephone call with you (at a time which is convenient for you), where I will ask you another questionnaire. This telephone call will take about 15-20 minutes.

As a token of my appreciation for taking part in this study, you will be entered into a prize draw, which will be drawn once the research is complete. The winner will receive £50 and two runners up will receive £25 each.

How do I take part in this research?
If you are interested in taking part in this study, and to find out more information, please contact Zoe on 01784 414012 (and ask to speak to Zoe Kindynis), or on zoe.kindynis.2013@live.rhul.ac.uk.

Or visit: STUDY WEBSITE

B.i. Queens Square Research Ethics Committee approval

Letter re-issued 19 October 2015 (corrections made to the list of documents)

NHS
Health Research Authority
National Research Ethics Service

NRES Committee London - Queen Square
HRA NRES Centre Manchester
Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0161 625 7816
Fax: 0161 625 7299

07 September 2015

Miss Zoe Kindynis
15A Chatsworth Road
Croydon
Surrey
CR0 1HE

Dear Miss Kindynis

Study title:	**Decisions and judgements in OCD: when both acting and not acting result in harm**
REC reference:	**15/LO/1150**
Protocol number:	**n/a**
IRAS project ID:	**173528**

Thank you for your letter of 18 August 2015, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a Sub-Committee of the REC A list of the Sub-Committee members is attached.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager, Rachel Heron, nrescommittee.london-queensquare@nhs.net Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Confirmation of ethical opinion

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

Letter re-issued 19 October 2015 (corrections made to the list of documents)

Conditions of the favourable opinion

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

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

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

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

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

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

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

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

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

Ethical review of research sites

NHS sites

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

Letter re-issued 19 October 2015 (corrections made to the list of documents)

Approved documents

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

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Version 1 17.05.2015 Advertising Material]	1	17 May 2015
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Version 1 04.05.2015 Professional Indemnity policy schedule]		01 August 2014
IRAS Checklist XML [Checklist_18082015]		18 August 2015
Other [Response to Provisional Opinion Letter]	1	17 August 2015
Participant consent form [Version 1 04.05.2015 Consent Form]	1	04 May 2015
Participant information sheet (PIS)	2	30 July 2015
Participant information sheet (PIS) [Version 1 07.06.2015 Debrief Information]	1	07 June 2015
REC Application Form [REC_Form_17082015]		17 August 2015
Referee's report or other scientific critique report [Research Proposal Approval]	1	30 January 2015
Research protocol or project proposal	2	17 August 2015
Summary CV for Chief Investigator (CI) [Version 1 04.05.2015 Zoe Kindynis CV]		
Summary CV for supervisor (student research) [Version 1 04.05.2015 Abigail Wroe CV]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Version 1 04.05.2015 Protocol]	1	04 May 2015
Validated questionnaire [Version 1 08.06.2015 OCI]		
Validated questionnaire [Version 1 08.06.2015 RAS]		

Statement of compliance

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

After ethical review

Reporting requirements

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

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

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

User Feedback

Letter re-issued 19 October 2015 (corrections made to the list of documents)

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

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

15/LO/1150	**Please quote this number on all correspondence**

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

Yours sincerely

Signed on behalf of
Dr Yogi Amin
Chair

Email: nrescommittee.london-queensquare@nhs.net

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*
"After ethical review – guidance for researchers" *[SL-AR2]*

Copy to: *Mrs Sharon Clutterbuck*

A Research Ethics Committee established by the Health Research Authority

B.ii. Queen Square Research Ethics Committee amendment approval

NHS
Health Research Authority
National Research Ethics Service

London - Queen Square Research Ethics Committee

HRA NRES Centre Manchester
Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

05 November 2015

Miss Zoe Kindynis
15A Chatsworth Road
Croydon
Surrey
CR0 1HE

Dear Miss Kindynis

Study title:	**Decisions and judgements in OCD: when both acting and not acting result in harm**
REC reference:	**15/LO/1150**
Protocol number:	**n/a**
Amendment number:	**One**
Amendment date:	**20 October 2015**
IRAS project ID:	**173528**

- The Substantial Amendment proposes to amend the Participant Information Sheet.
- The amendments do not change the information given to the participants, but are for clarity (for example, altered paragraph headings, and restructuring information given) and to ensure HRA guidelines on information sheets are clearly adhered to.
- Document (Version 3 Participant Information Sheet 30.09.2015) has been submitted with tracked changes and additions highlighted in yellow.

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

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

The Sub-Committee raised no issues with the amendment, other than a minor typographical error ('Queen's Square National Research Ethics Service' should be 'Queen Square Research Ethics Service').

Approved documents

The documents reviewed and approved at the meeting were:

A Research Ethics Committee established by the Health Research Authority

Document	*Version*	*Date*
Notice of Substantial Amendment (non-CTIMP)	One	20 October 2015
Participant information sheet (PIS)	3.0- Tracked	30 September 2015

Membership of the Committee

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

R&D approval

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

Statement of compliance

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

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

15/LO/1150:	**Please quote this number on all correspondence**

Yours sincerely

Signed on behalf of
Dr Eamonn Walsh
Chair

E-mail: nrescommittee.london-queensquare@nhs.net

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

Copy to:
Mrs Sharon Clutterbuck

A Research Ethics Committee established by the Health Research Authority

C. SLAM R&D approval

Institute of Psychiatry, Psychology & Neuroscience

Research and Development Office

Box P005
De Crespigny Park
Denmark Hill
London SE5 8AF
Tel +44 (0)2078480790
Fax +44(0)2078480147
http://www.kcl.ac.uk/ioppn/research/office/index.aspx

KING'S College LONDON

Miss Zoe Kindynis
Camden and Islington NHS Trust
Royal Holloway, University of London
Egham,
Surrey TW20 0EX

12th November 2015

Dear Miss Kindynis,

Trust Approval: R&D2015/095
Title: Decisions and judgements in OCD: when both acting and not acting result in harm
REC Reference: 15/LO/1150

I am writing to confirm that there is no objection to South London and Maudsley NHS Foundation Trust acting as a Participant Identification Centre (PIC) for the above study.

The role of South London and Maudsley NHS Foundation Trust will be restricted to identifying potential participants from the Mood, Anxiety and Personality (MAP) CAG and referring them to the research team based in another organisation, for assessment and possible recruitment into the study. No participant-related research procedures specified in the protocol, including recruitment and informed consent, should be conducted within the trust, and the trust does not take on the duty of care for patients in relation to the research. This responsibility will be retained by the external research site.

Approval is conditional on the understanding that the research will adhere to current and relevant statutory guidance and legislation.

If you wish to discuss any aspect of this approval with the R&D Office, please contact Jenny Liebscher jennifer.liebscher@kcl.ac.uk in the first instance.

I wish you every success with this study.

Yours sincerely

Adriana Fanigliulo
Research Governance Facilitator
SLaM/IoPPN R&D Office

Enc. R&D Approval Amendment Form

South London and Maudsley NHS
NHS Foundation Trust

D. C&I R&D approval

noclor
RESEARCH SUPPORT

Research Support
1st Floor, Bloomsbury Building
St Pancras Hospital
4 St Pancras Way
NW1 0PE

Tel: 020 3317 3045
Fax: 020 7685 5830/5788
www.noclor.nhs.uk

17 November 2015

Zoe Kindynis
Department of Psychology
Royal Holloway University of London
Egham
Surrey
TW20 0EX

Dear Zoe Kindynis,

This NHS PIC Permission is based on the REC favourable opinion given on **07 September 2015** and the most recent amendment submitted to REC on **05 November 2015**.

Study Title: Decisions and judgements in OCD: when both acting and not acting result in harm
R&D reference: 173528
REC reference: 15/LO/1150

Name of the trust	Name of current PI/LC at research site	Date of permission issue(d)
Camden & Islington NHS Foundation Trust	Zoe Kindynis	17 November 2015
If any information on this document is altered after the date of issue, this document will be deemed INVALID		

Specific Conditions of Permission (if applicable)
N/A
If any information on this document is altered after the date of issue, this document will be deemed INVALID

I am pleased to confirm that **the trusts identified above** can act as a PIC for the above study subject to the following conditions:

- The role of the relevant sites will be restricted to identifying potential patients. No research procedures will be conducted in these PICs and these sites **will not** take on the duty of care for patients in relation to the research study; this responsibility will be retained by the external research site.
- The ethically approved details and relevant guidelines, including data protection, are adhered to.
- The Trust accepts no responsibility, and provides no indemnity, for any patient-related research procedures, including recruitment and informed consent. Please ensure that all members of the research team are aware of their responsibilities as researchers. For more details on these responsibilities, please check the NoCLoR website: http://www.noclor.nhs.uk.

We would like to wish you every success with your project.

Yours sincerely,

Pushpesh Joshi
Research Operations Manager
Cc: Principle Investigator(s)/Local Collaborator(s), Sponsor Contact

NCLET019T - 4.0.0 - 29.07.15 - PIC Site NHS Permission Letter *IRAS R&D reference: 173528*

Page 1 of 1

E. RHUL departmental ethics approval

Ref: 2015/019R1 Ethics Form Approved

PS psychology.it.support@rhul.ac.uk

To: najt002@rhul.ac.uk; Wroe, Abigail; Cc: PSY-EthicsAdmin@rhul.ac.uk; Zagefka, Hanna; Locl

Reply all

Mon 23/11/2015 14:15

Inbox

You forwarded this message on 23/11/2015 15:02

Application Details:	View the form click here Revise the form click here
Applicant Name:	**Zoe Kindynis**
Application title:	**Decisions and judgements in everyday scenarios: when both acting and not acting result in harm**
Comments:	Approved.

F. Participant information sheet

Department of Psychology

Royal Holloway, University of London, Egham, Surrey TW20 0EX, UK

Information for Potential Participants
Decisions and Judgements in Everyday Scenarios: when both acting and not acting result in harm.

My name is Zoe Kindynis and I am a Trainee Clinical Psychologist at Royal Holloway, University of London. I am carrying out a study, supervised by Dr. Abigail Wroe, on Decisions and Judgements in Everyday Scenarios.

What Is The Purpose Of The Study?
Different people make different decisions. We are looking to find out more information about the decisions people make in everyday scenarios when there are potential risks of harm involved. We are particularly interested in decisions made by people with OCD, and how this may compare to decisions made by people without OCD.

Why Have I Been Asked To Take Part?
We are looking for people who are over 18. You may have been asked to take part because you identify yourself as someone with symptoms of OCD, or you may have been asked because you do not. We are also asking people without symptoms of OCD to complete the questionnaires.
Unfortunately, we cannot include you in the study if you:

- Are under 18
- Have a diagnosis of Schizophrenia
- Are unable to communicate in English

We wish to study around 50 people in total.

What Will The Study Involve?
If, once you have read this information sheet, you would like to take part, please complete the consent form. Once you have given your consent you will be taken to an online questionnaire. Alternatively, if you would rather complete the questionnaire on paper, I can send you a paper questionnaire with a Freepost return envelope. The questionnaire will ask some questions about you; it will then give you several scenarios and ask you questions about what decisions you would make, and how you would feel about them. This is expected to take about 30-40 minutes in total. This questionnaire will be anonymous, and you will be able to choose an anonymous code to identify yourself.

After you have completed the questionnaire, you will be asked to specify times and days when it would be convenient for me to call you. At this point you will be asked to give your telephone number, although this will only be paired to your chosen anonymous code (so as to maintain anonymity), and records of your telephone number will be destroyed as soon as the research is complete. I will call you at a convenient time for you.

During the telephone call, I will be asking you to complete a short questionnaire that will show me if your answers are consistent with what I would expect from someone who meets criteria for a disorder (such as anxiety or OCD). This will NOT mean that you are given a diagnosis, and this will not go on your medical records or be shared with anyone outside of the research team. At the beginning of the telephone call, I will ask you if you wish to know what this questionnaire shows. If you ask to be informed of the findings of the questionnaire, I will discuss this with you at the end of the telephone call, and I can advise you of where you can seek support, if this is appropriate. If you wish not to be told the findings of the questionnaire, your wishes will be respected.

This telephone call is expected to take about 15-20 minutes. At the end of the call, I will be able to give you a bit more information about the study, and you will have the opportunity to ask me any questions you have. I will also ask you if you are happy for me to keep your phone number or email address (again, stored separately from the questionnaire responses) for entry into the prize draw (see below).

As this telephone call is an essential part of the research, if you are unable to speak over the telephone for any reason (for example, if you have hearing difficulties, or do not own a telephone), please contact me using the details provided before starting the research and we will do our best to accommodate your needs.

If you have any questions or concerns you would like to discuss at any time, before, during, or after completing the questionnaire, please do not hesitate to contact me on 01784 414012 (and ask to speak to Zoe Kindynis), or on zoe.kindynis.2013@live.rhul.ac.uk. If answering the questionnaire makes you feel uncomfortable in any way, please get in touch.

Who is organising this study?
This study is being sponsored by Royal Holloway University of London.

What are the benefits to taking part in this study?
Taking part in this research will contribute to a greater understanding of how we make decisions, and particularly our understanding of the differences in decision and judgements between people with and without OCD. It is hoped that the results of this research will improve our understanding and treatment of those suffering from OCD.

Furthermore, everyone who participates in this research will be entered into a prize draw, which will be drawn once the research is complete (around March 2016). The winner will receive £50, and two runners up will receive £25 each. So that I can make

sure the winner receives their prize, when I speak to you on the telephone, I will ask if you are happy for me to keep a record of your telephone number or email address. If so, this will no longer be paired with your questionnaire responses, but will be stored securely only for the purpose of being entered into the prize draw when the research is complete. I will then contact the winner using their chosen contact method, to organize the delivery of their prize!

Any risks to taking part?
Taking part in this study will require your time. Furthermore, it may be that you find some questions difficult to answer, or feel uncomfortable about making decisions in certain scenarios. It is also possible that the answers you give me are in keeping with what would be expected from someone with a disorder such as anxiety or OCD. If you wish to be informed of this, we will have the opportunity to discuss this and consider possible routes of support.

What will happen with the results?
Your files/responses to questions will be seen only by the immediate study team, who will only know you as the anonymous code you have chosen, unless you wish for them to know you by first name. Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. We would discuss this with you before telling anyone else. You can decide not to answer some questions if you wish.

The study will be written up and published in a scientific journal; If you would like to receive a summary of the results when they have been collected, I will take your contact details so that I can make sure I send them to you. (These will be stored separately from the questionnaire responses). You will also be kept informed as to where and when this is published and how to access it. Your information will not be identifiable to you when published. Any data arising from the study will only be used for the purposes of the current study. Data from this study will be retained for 10 years and subsequently disposed of securely.

Do I Have To Take Part?
You do not have to take part in this study if you don't want to. If you decide to take part you may withdraw at any time without having to give a reason and your data will be destroyed. You can also decide to leave some questions out, if you would rather not answer them. Taking part, or choosing not to take part in this study, will not affect your access to services now or in the future.

What Should I Do If I Would Like To Find Out More?
Please call 01784 414012 (and ask to speak to Zoe Kindynis) or email zoe.kindynis.2013@live.rhul.ac.uk if you have any questions regarding this study. Alternatively, if you would like to participate, please complete the consent form on the following page. You will then be taken to the questionnaire.

What If There Is A Problem?

If you have a concern about any aspect of this study, you should ask to speak to Zoe Kindynis on 01784 414012 and I will do my best to answer your questions. If you remain unhappy and wish to speak to someone outside of the research team, please contact Carol Blackman at the Psychology Department, Royal Holloway, University of London on 01784 443528.

You can print this part of the sheet for your reference. Please feel free to ask any questions before you complete the consent form.

Who has reviewed the study?
This study has been reviewed and approved by the Psychology Department internal ethical procedure at Royal Holloway, University of London, and by Queen Square Research Ethics Service.

Please remember
If completing this research leads you to feel concerned or distressed in any way, please see below contact details for support and advice:
The researcher: Zoe Kindynis, 01784 414012, zoe.kindynis.2013@live.rhul.ac.uk
Online support forums: www.ocduk.org
www.ocdaction.org.uk
Out of hours telephone support: Samaritans (24hrs) 08457 90 90 90

G. Consent form

Consent form

ID code (please choose your anonymous ID code, and try to remember it for future reference- this could be a nickname, a favourite colour, or anything you choose- but please try to remember it!) : ……..…….

Decisions and Judgements in Everyday Scenarios: when both acting and not acting result in harm.

You have been asked to participate in a study about decision-making in everyday scenarios, which is being carried out by Zoe Kindynis.

Have you (please tick yes or no):

- Read and understood the information sheet about the study? yes no
- Had an opportunity to ask questions? yes no
- Got satisfactory answers to your questions? yes no n/a
- Understood that participation is voluntary and that you're free to withdraw from the study(at any time, without giving a reason and without it affecting your care)? yes no
- Understood that you are welcome to call the research team if at any point you have any concerns about the questionnaire, or the questionnaire makes you feel uncomfortable in any way? yes no

Do you consent to take part in the study?
Yes- I am over 18 and I consent to participate in the study described above
No- I do not consent to participate in the study described above

Would you rather complete the questionnaire online or on paper?

Online Paper

H. Disturbance rank

I am interested in how people would react in different situations. In this questionnaire several situations are described and I would like you to rate what you would do, and how you would feel under certain circumstances.

Before this however, please rank each of the situations below in the order of how much they worry or disturb you. There are no right or wrong answers.

Please rank how disturbed you are by the following situations. Please try to ensure that each item has a different rank:
1= most disturbing 5= least disturbing Rank the items below, using numeric values starting with 1.

Causing contamination through people eating food that you previously dropped on the floor	
Someone not getting the right change in a shop	
Accidentally causing someone to fall down the stairs and hurt themselves	
A burglary because you have not locked up properly	
Someone injuring themselves on some broke glass that you have seen in the street.	

I. Vignettes

1. You and several other people are preparing food for an office party. Peter and you have arrived a little early so begin the preparation. While putting the food out, you see out of the corner of your eye that Peter has dropped some crisps on the floor where he is standing. He picks up the crisps and puts them back. Suddenly the thought pops into your head, " What if the crisps are now contaminated and someone gets ill?" You could move the crisps away from the main party area.

How likely is it that you would move the crisps?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT move the crisps — I would definitely move the crisps

Imagine you chose NOT to move the crisps:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to move the crisps:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

You and several other people are preparing food for an office party. Peter and you have arrived a little early so begin the preparation. While putting the food out, you see out of the corner of your eye that Peter has dropped some crisps on the floor where he is standing. He picks up the crisps and puts them back. Suddenly the thought pops into your head, " What if the crisps are now contaminated and someone gets ill?" You could move the crisps away from the main party area.

You then realise that if you move the crisps, although <u>most people</u> at the party will not eat them and so will not be at risk of becoming ill, you would have to move the crisps to a quieter area of the party, and would therefore risk <u>fewer other people</u> eating them and becoming ill.

How likely is it that you would move the crisps?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT move the crisps — I would definitely move the crisps

Imagine you chose NOT to move the crisps:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to move the crisps:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

2. You are visiting your friend Sarah and have been helping her to sort out her garden. Just before the shops shut, you remember that you both urgently need to go to the shops. Sarah runs ahead so you are the last to leave the house. The shops will be closed if you do not hurry. You remember that earlier in the day the garage door was open, and that Sarah keeps lots of valuable items in her garage. Suddenly the thought pops into your head, "What if the garage door is unlocked and someone steals Sarah's valuable items?" You could lock the garage with a padlock.

How likely is it that you would lock the garage door with a padlock?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT lock the garage door with a padlock — I would definitely lock the garage with a padlock

Imagine you chose NOT to lock the garage door with a padlock:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to lock the door with a padlock:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

You are visiting your friend Sarah and have been helping her to sort out her garden. Just before the shops shut, you remember that you both urgently need to go to the shops. Sarah runs ahead so you are the last to leave the house. The shops will be closed if you do not hurry. You remember that earlier in the day the garage door was open, and that Sarah keeps lots of valuable items in her garage. Suddenly the thought pops into your head, "What if the garage door is unlocked and someone steals Sarah's valuable items?" You could lock the garage with a padlock.

You then realise that if you lock the garage door with a padlock, although <u>the valuable items in her garage</u> would not be at risk of being stolen, you would have to move the padlock from her shed door and would therefore risk <u>fewer other less-valuable</u> items being stolen.

How likely is it that you would lock the garage door with a padlock?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT lock the garage door with a padlock — I would definitely lock the garage door with a padlock

Imagine you chose NOT to lock the garage door with a padlock:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to lock the door with a padlock:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

3. As you are walking up some busy stairs at a train station, you are brushing past people who are running down the stairs to catch their train. You notice that you are walking up the left side of the stairs and there is a sign that says to 'keep right'. You see that you have a long way to go on the stairs. The thought pops into your head, "What if I cause someone to fall down the stairs and hurt themselves?" You could move over to the right side of the stairs.

How likely is it that you would move to the right side of the stairs?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT move to the right side of the stairs — I would definitely move to the right side of the stairs

Imagine you chose NOT to move to the right side of the stairs:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to move to the right side of the stairs:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

As you are walking up some busy stairs at a train station, you are brushing past people who are running down the stairs to catch their train. You notice that you are walking up the left side of the stairs and there is a sign which says to 'keep right'. You see that you have a long way to go on the stairs. The thought pops into your head, "What if I cause someone to fall down the stairs and hurt themselves?" You could move over to the right side of the stairs.

You then realise that if you move over to the right side of the stairs, although you will not brush past <u>many more people</u> and so will not risk them falling down the stairs and hurting themselves, you would have to cross the flow of people to get to the right hand side and therefore risk <u>fewer other people</u> falling and hurting themselves.

How likely is it that you would move to the right side of the stairs?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT move to the right side of the stairs — I would definitely move to the right side of the stairs

Imagine you chose NOT to move to the right side of the stairs:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to move to the right side of the stairs:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

4. As you hurry along a street, you see some broken glass in the middle of the pavement. You know that the local school closes in half an hour and most of the children walk along this pavement. Suddenly the thought pops into your head, "What if one of the children steps or falls on this glass and hurts themselves?" You could move the glass off the pavement.

How likely is it that you would move the broken glass?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT move the broken glass — I would definitely move the broken glass

Imagine you chose NOT to move the broken glass:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to move the broken glass.

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

As you hurry along a street, you see some broken glass in the middle of the pavement. You know that the local school closes in half an hour and most of the children walk along this pavement. Suddenly the thought pops into your head, "What if one of the children steps or falls on this glass and hurts themselves?" You could move the glass off the pavement.

You then realise that if you move the glass off the pavement, although <u>most of the children</u> will not risk stepping or falling on it and hurting themselves, you would have to move the glass onto the grass verge, and therefore risk <u>fewer other children</u> who walk along this verge stepping or falling on it and hurting themselves.

How likely is it that you would move the broken glass?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT move the broken glass — I would definitely move the broken glass

Imagine you chose NOT to move the broken glass:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to move the broken glass.

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

5. You are at the check out and see the person in front pay, you think with a £20 note. He is given £4.23 change from a bill of £5.77 (instead of £14.23 as he should have received). The customer announces that he gave the shopkeeper a £20 note and that he has not got enough change. The cashier doubts whose mistake it was. Suddenly the thought pops into your head, "What if the customer loses vital money?" You could say that you thought the customer paid with a £20 note.

How likely is it that you would say that you thought the customer paid with a £20?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT say I thought the customer paid with a £20 — I would definitely say I thought the customer paid with a £20

Imagine you chose NOT to say you thought the customer paid with a £20:

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to say you thought the customer paid with a £20.

How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

You are at the check out and see the person in front pay, you think with a £20 note. He is given £4.23 change from a bill of £5.77 (instead of £14.23 as he should have received). The customer announces that he gave the shopkeeper a £20 note and that he has not got enough change. The cashier doubts whose mistake it was. Suddenly the thought pops into your head, "What if the customer loses vital money?" You could say that you thought the customer paid with a £20 note.

You then realise that if you say you thought the customer paid with a £20 note, although <u>the customer</u> will not be at risk of losing vital money, this means the shopkeeper may have to give back more money than necessary, and therefore risks the shop losing money, although you believe that this may be <u>less of a loss</u> to a whole shop.

How likely is it that you would say that you thought the customer paid with a £20?

0 1 2 3 4 5 6 7 8 9 10

I would definitely NOT say I thought the Customer paid with a £20 — I would definitely say I thought the customer paid with a £20

Imagine you chose NOT to say you thought the customer paid with a £20:
How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

Imagine you chose to say you thought the customer paid with a £20.
How immoral would you feel?

0 1 2 3 4 5 6 7 8 9 10

---

not at all immoral — totally immoral

How responsible would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all responsible — totally responsible

How guilty would you feel for any harm that may occur?

0 1 2 3 4 5 6 7 8 9 10

---

not at all guilty — totally guilty

J. OCI-R

OCI-R

The following statements refer to experiences that many people have in their everyday lives. Circle the number that best describes **HOW MUCH** that experience has **DISTRESSED or BOTHERED you during the PAST MONTH.** The numbers refer to the following verbal labels:

0 Not at all	1 A little	2 Moderately	3 A lot	4 Extremely

1	I have saved up so many things that they get in the way.	0 1 2 3 4
2	I check things more often than necessary.	0 1 2 3 4
3	I get upset if objects are not arranged properly.	0 1 2 3 4
4	I feel compelled to count while I am doing things.	0 1 2 3 4
5	I find it difficult to touch an object when I know it has been touched by strangers or certain people.	0 1 2 3 4
6	I find it difficult to control my own thoughts.	0 1 2 3 4
7	I collect things I don't need.	0 1 2 3 4
8	I repeatedly check doors, windows, drawers etc.	0 1 2 3 4
9	I get upset if others change the way I have arranged things.	0 1 2 3 4
10	I feel I have to repeat certain numbers.	0 1 2 3 4
11	I sometimes have to wash or clean myself simply because I feel contaminated.	0 1 2 3 4
12	I am upset by unpleasant thoughts that come into my mind against my will.	0 1 2 3 4
13	I avoid throwing things away because I am afraid I might need them later	0 1 2 3 4
14	I repeatedly check gas and water taps and light switches after turning them off.	0 1 2 3 4
15	I need things to be arranged in a particular way.	0 1 2 3 4
16	I feel that there are good and bad numbers.	0 1 2 3 4
17	I wash my hands more often and longer than necessary.	0 1 2 3 4
18	I frequently get nasty thoughts and have difficulty getting rid of them.	0 1 2 3 4

K. RAS

RAS

This questionnaire lists different attitudes or beliefs which people sometimes hold. Read each statement carefully and decide how much you agree or disagree with it. For each of the attitudes, show your answer by putting a circle round the words which BEST DESCRIBE HOW YOU THINK. Be sure to choose only one answer for each attitude. Because people are different, there is no right answer or wrong answer to these statements.
To decide whether a given attitude is typical of your way of looking at things, simply keep in mind what you are like MOST OF THE TIME.

1. I often feel responsible for things which go wrong.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

2. If I don't act when I can foresee danger, then I am to blame for any consequences if it happens.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

3. I am too sensitive to feeling responsible for things going wrong.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

4. If I think bad things, this is as bad as doing bad things.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

5. I worry a great deal about the effects of things which I do or don't do.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

6. To me, not acting to prevent danger is as bad as making disaster happen.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

7. If I know that harm is possible, I should always try to prevent it, however unlikely it seems.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

8. I must always think through the consequences of even the smallest actions.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

9. I often take responsibility for things which other people don't think are my fault.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

10. Everything I do can cause serious problems.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

11. I am often close to causing harm.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

12. I must protect others from harm.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

13. I should never cause even the slightest harm to others.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

14. I will be condemned for my actions.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY	AGREE	AGREE	NEUTRAL	DISAGREE	DISAGREE	TOTALLY

AGREE	VERY MUCH	SLIGHTLY		SLIGHTLY	VERY MUCH	DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

23. Other people should not rely on my judgement.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

24. If I cannot be <u>certain</u> I am blameless, I feel that I am to blame.

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

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

TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE

L. Sociodemographics

Before we finish, it would be really helpful to get to know a little bit about you.

How old are you?_____

How would you describe your gender?
Male
Female

How would you describe your ethnicity?
White British
White Irish
White Other
Indian
Pakistani
Bangladeshi
Chinese
Asian Other
Black African
Black Caribbean
Black Other
Mixed White and Black African
Mixed White and Black Caribbean
Mixed White and Asian
Mixed Other
Other, please specify_____

What is your current highest obtained educational level?
GCSES (or equivalent)
A Level (or equivalent)
Undergraduate Degree (or equivalent)
Postgraduate Degree (or equivalent)
Postdoctoral Degree (or equivalent)
None of the above
Other, please specify_____

Are you currently seeing a therapist/counsellor/psychologist/psychotherapist (you can choose not to answer this question)?
Yes
No

Do you consider yourself to be someone who suffers from symptoms of OCD (again, you do not have to answer this question)?
Yes
No

M. Arrangements for telephone call

Thank you very much for completing this questionnaire!

To complete your participation in this study, we will now have a short telephone conversation which should last a maximum of 20 minutes. During this call, I will ask you to complete a very short questionnaire that will show me if your answers are consistent with what I would expect from someone who meets criteria for a disorder (such as anxiety or OCD). This will NOT mean that you are given a diagnosis, and this will not go on your medical records or be shared with anyone outside of the research team. At the beginning of the telephone call, I will ask you if you wish to know what this questionnaire shows. If you ask to be informed of the findings of the questionnaire, I will discuss this with you at the end of the telephone call, and I can advise you of where you can seek support, if this is appropriate. If you wish not to be told the findings of the questionnaire, your wishes will be respected.

At the end of the call, I will be able to give you a bit more information about the study, and you will have the opportunity to ask me any questions you have. I will also ask you if you are happy for me to keep your phone number or email address (stored separately from the questionnaire responses) for entry into the prize draw.

What telephone number would you prefer to be called on?Please note: this telephone number will only be paired to your chosen anonymous code (so as to maintain anonymity), and records of your telephone number will be destroyed as soon as the research is complete.

_____

Please state below the dates and times when you would be available to take this telephone call.I will try my best to ensure that you are called at your preferred times, but this will be easier if you are able to specify a few times.

_____

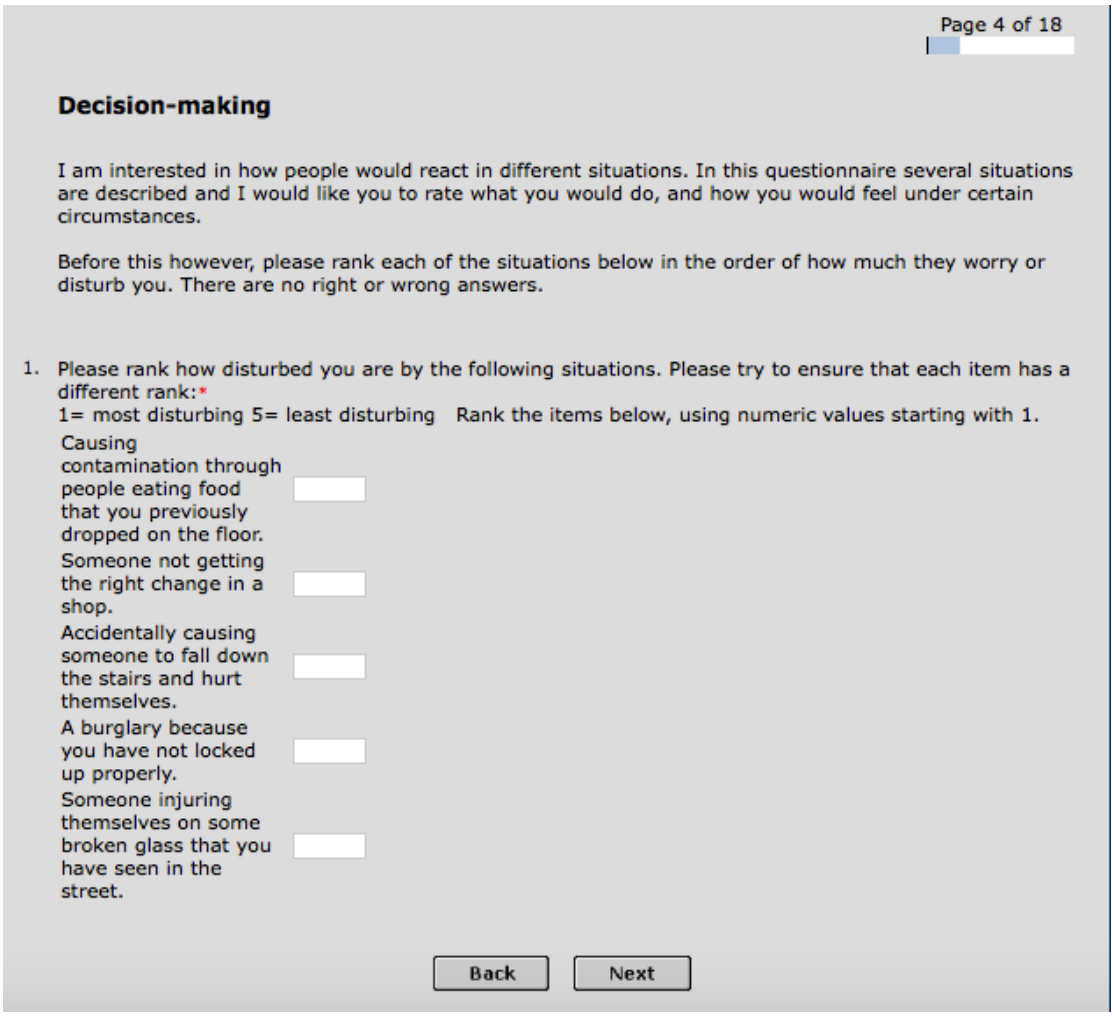
Are you happy to be contacted by text to arrange/confirm your telephone call date/time?
Yes
No

Are you happy for answer phone messages to be left on your chosen number?
Yes
No

Please also note: During this telephone call I will refer to you as the anonymous code that you specified at the beginning of this questionnaire. If you would rather me address you differently, please let me know below what you would prefer to be called. If you are happy for me to use your anonymous ID code, please leave this box blank. To maintain anonymity, please do NOT give your first name AND surname.

_____

N. Screenshots of first three pages of online questionnaire



Page 4 of 18

Decision-making

I am interested in how people would react in different situations. In this questionnaire several situations are described and I would like you to rate what you would do, and how you would feel under certain circumstances.

Before this however, please rank each of the situations below in the order of how much they worry or disturb you. There are no right or wrong answers.

1. Please rank how disturbed you are by the following situations. Please try to ensure that each item has a different rank:*
1= most disturbing 5= least disturbing Rank the items below, using numeric values starting with 1.

Causing contamination through people eating food that you previously dropped on the floor.

Someone not getting the right change in a shop.

Accidentally causing someone to fall down the stairs and hurt themselves.

A burglary because you have not locked up properly.

Someone injuring themselves on some broken glass that you have seen in the street.

Back Next

Crisps

You and several other people are preparing food for an office party. Peter and you have arrived a little early so begin the preparation. While putting the food out, you see out of the corner of your eye that Peter has dropped some crisps on the floor where he is standing. He picks up the crisps and puts them back. Suddenly the thought pops into your head, " What if the crisps are now contaminated and someone gets ill?" You could move the crisps away from the main party area.

1. How likely is it that you would move the crisps?
   0= I would definitely NOT move the crisps 10= I definitely would move the crisps
   Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

Imagine you chose NOT to move the crisps:

2. How immoral would you feel?
   0= not at all immoral 10= extremely immoral Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

3. How responsible would you feel for any harm that may occur?
   0= not at all responsible 10= extremely responsible Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

4. How guilty would you feel for any harm that may occur?
   0= not at all guilty 10= extremely guilty Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

Imagine you chose TO move the crisps:

5. How immoral would you feel?
   0= not at all immoral 10= extremely immoral Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

6. How responsible would you feel for any harm that may occur?
   0= not at all responsible 10= extremely responsible Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

7. How guilty would you feel for any harm that may occur?
   0= not at all guilty 10= extremely guilty Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

Back Next

Crisps + risk

You and several other people are preparing food for an office party. Peter and you have arrived a little early so begin the preparation. While putting the food out, you see out of the corner of your eye that Peter has dropped some crisps on the floor where he is standing. He picks up the crisps and puts them back. Suddenly the thought pops into your head, " What if the crisps are now contaminated and someone gets ill?" You could move the crisps away from the main party area.

You then realise that if you move the crisps, although most people at the party will not eat them and so will not be at risk of becoming ill, you would have to move the crisps to a quieter area of the party, and would therefore risk fewer other people eating them and becoming ill.

1. How likely is it that you would move the crisps?
   0= I would definitely NOT move the crisps 10= I definitely would move the crisps
   Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

Imagine you chose NOT to move the crisps:

2. How immoral would you feel?
   0= not at all immoral 10= extremely immoral Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

3. How responsible would you feel for any harm that may occur?
   0= not at all responsible 10= extremely responsible Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

4. How guilty would you feel for any harm that may occur?
   0= not at all guilty 10= extremely guilty Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

Imagine you chose TO move the crisps:

5. How immoral would you feel?
   0= not at all immoral 10= extremely immoral Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

6. How responsible would you feel for any harm that may occur?
   0= not at all responsible 10= extremely responsible Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

7. How guilty would you feel for any harm that may occur?
   0= not at all guilty 10= extremely guilty Select no more than 1 response.
   0 1 2 3 4 5 6 7 8 9 10

Back Next

Q. SCID

SCID-I (for DSM-IV-TR) Obsessive-Compulsive (NOV 2011) Anxiety Disorders F. 20

OBSESSIVE COMPULSIVE DISORDER

OBSESSIVE COMPULSIVE DISORDER CRITERIA

SCREEN Q# 9 YES | | NO — F84a

IF NO: GO TO ***COMPULSIONS*** F. 21

IF SCREENING QUESTION #9 ANSWERED "NO", SKIP TO ***COMPULSIONS,*** F. 21. (NOTE: BECAUSE SOME SUBJECTS WITH OCD MAY BE RELUCTANT TO CONFIDE THEIR OBSESSIONS DURING THE SCREENING, CONSIDER RE-ASKING SCREENING QUESTION BELOW AT THIS POINT IN THE SCID.)

IF QUESTION #9 ANSWERED "YES": You've said that you have had thoughts that didn't make any sense and kept coming back to you even when you tried not to have them...

IF SCREENER NOT USED: Now I would like to ask you if you have ever been bothered by thoughts that didn't make any sense and kept coming back to you even when you tried not to have them?

(What were they?)

IF SUBJECT NOT SURE WHAT IS MEANT: . . . Thoughts like hurting someone, even though you really didn't want to or being contaminated by germs or dirt?

When you had these thoughts, did you try hard to get them out of your head? (What would you try to do?)

IF UNCLEAR: Where did you think these thoughts were coming from?

A. Either obsessions or compulsions:

Obsessions as defined by (1), (2), (3) and (4).

(1) recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate, and that cause marked anxiety or distress — ? 1 2 3 — F85

(2) the thoughts, impulses, or images are not simply excessive worries about real-life problems — ? 1 2 3 — F86

(3) the person attempts to ignore or suppress such thoughts, impulses, or images, or to neutralize them with some other thought or action — ? 1 2 3 — F87

(4) the person recognizes that the obsessional thoughts, impulses, or images are a product of his or her own mind (not imposed from without as in thought insertion) — ? 1 2 3 — F88

OBSES-SIONS

NO OBSESSIONS CONTINUE ON NEXT PAGE

DESCRIBE CONTENT OF OBSESSION(S):

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

SCID-I (for DSM-IV-TR) Obsessive-Compulsive (NOV 2011) Anxiety Disorders F. 21

COMPULSIONS

SCREEN Q# 10 YES | | NO — F88a

IF NO: GO TO ***CHECK FOR OBSESSIONS / COMPULSIONS*** F. 22

IF SCREENING QUESTION #10 ANSWERED "NO," SKIP TO ***CHECK FOR OBSESSIONS/COMPULSIONS,*** F. 22. (NOTE: BECAUSE SOME SUBJECTS WITH OCD MAY BE RELUCTANT TO CONFIDE THEIR COMPULSIONS DURING THE SCREENING, CONSIDER RE-ASKING SCREENING QUESTION BELOW AT THIS POINT IN THE SCID.)

IF QUESTION #10 ANSWERED "YES": You've said that there were things that you had to do over and over again and couldn't resist doing, like washing your hands again and again, counting up to a certain number or checking something several times to make sure that you had done it right . . .

IF SCREENER NOT USED: Was there ever anything that you had to do over and over again and couldn't resist doing, like washing your hands again and again, counting up to a certain number, or checking something several times to make sure that you 'd done it right?

(What did you have to do?)

IF UNCLEAR: Why did you have to do (COMPULSIVE ACT?) What would happen if you didn't do it?

IF UNCLEAR: How many times would you do (COMPULSIVE ACT)? How much time a day would you spend doing it?

Compulsions as defined by (1) and (2):

(1) repetitive behaviors (e. g., handwashing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly — ? 1 2 3 — F89

(2) the behaviors or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; however these behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent, or are clearly excessive — ? 1 2 3 — F90

COMPULSIONS

GO TO ***CHECK FOR OBSESSIONS/ COMPULSIONS,*** F. 22 (TOP OF NEXT PAGE)

DESCRIBE CONTENT OF COMPULSION(S):

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

CHECK FOR OBSESSIONS / COMPULSIONS

IF: EITHER OBSESSIONS, COMPULSIONS, OR BOTH, CONTINUE BELOW.

IF: NEITHER OBSESSIONS NOR **COMPULSIONS**, CHECK HERE ___ AND GO TO ***POSTTRAUMATIC STRESS DISORDER,*** F 25. F91

Have you (thought about [OBSESSIVE THOUGHTS]/done [COMPULSIVE ACTS]) more than you should have (or than made sense)?

IF NO: How about when you first started having this problem?

B. At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable. Note: this does not apply to children. ? 1 2 3 F92

1 → GO TO ***PTSD*** F. 25

Check here ___ if **With Poor Insight:** i.e., for most of the time during the current episode, the person does not recognize that the obsessions and compulsions are excessive or unreasonable. F93

What effect did this (OBSESSION OR COMPULSION) have on your life? (Did [OBSESSION OR COMPULSION] bother you a lot?)

(How much time do you spend [OBSESSION OR COMPULSION])?

C. The obsessions or compulsions cause marked distress, are time-consuming (take more than an hour a day), or significantly interfere with the person's normal routine, occupational functioning, or usual social activities or relationships. ? 1 2 3 F94

1 → GO TO ***PTSD*** F. 25

IF NOT ALREADY CLEAR: RETURN TO THIS ITEM AFTER COMPLETING INTERVIEW

D. If another Axis I disorder is present, the content of the obsessions or compulsions is not restricted to it (e.g., preoccupation with food in the presence of an Eating Disorder; hair pulling in the presence of Trichotillomania; concern with appearance in the presence of Body Dysmorphic Disorder; preoccupation with drugs in the presence of a Substance Use Disorder; preoccupation with having a serious illness in the presence of Hypochondriasis; preoccupation with sexual urges or fantasies in the presence of a Paraphilia, or guilty ruminations in the presence of Major Depressive Disorder). ? 1 3 F95

1 → GO TO ***PTSD*** F. 25

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Just before you began having (OBSESSIONS OR COMPULSIONS) were you taking any drugs or medicines?

Just before the (OBSESSIONS OR COMPULSIONS) started, were you physically ill? (What did the doctor say?)

E. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or to a general medical condition. ? 1 3 F96

1 → DUE TO SUBSTANCE USE OR A GMC GO TO ***PTSD*** F. 25

IF THERE IS ANY INDICATION THAT THE OBSESSIONS OR COMPULSIONS MAY BE SECONDARY (I.E., A DIRECT PHYSIOLOGICAL CONSEQUENCE OF A GMC OR SUBSTANCE, GO TO ***GMC / SUBSTANCE,*** F. 36, AND RETURN HERE TO MAKE A RATING OF "1" OR "3."

3 → PRIMARY ANXIETY DISORDER

Etiological general medical conditions include: certain CNS neoplasms.

Etiological substances include: intoxication with central nervous system stimulants (e.g., cocaine, amphetamines)

3 → CONTINUE

OBSESSIVE COMPULSIVE DISORDER CRITERIA A, B, C, D, AND E ARE CODED "3." 1 3 F97

1 → GO TO ***PTSD*** F. 25

3 → OBSESSIVE COMPULSIVE DISORDER

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

OBSESSIVE COMPULSIVE DISORDER CHRONOLOGY

IF UNCLEAR: During the past month, did the (OBSESSIONS OR COMPULSIONS) have any effect on your life or bother you a lot?

Has met criteria for Obsessive Compulsive Disorder during the past month. ? 1 3 F98

INDICATE CURRENT SEVERITY: F99
1 - **Mild:** Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.
2 - **Moderate:** Symptoms or functional impairment between "mild" and "severe" are present.
3 - **Severe:** Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

CONTINUE WITH ***AGE AT ONSET,*** BELOW.

IF CURRENT CRITERIA NOT FULLY MET (OR NOT AT ALL): F100
4 – **In Partial Remission:** The full criteria for the disorder were previously met, but currently only some of the symptoms or signs of the disorder remain.
5 – **In Full Remission:** There are no longer any symptoms or signs of the disorder but it is still clinically relevant to note the disorder—for example, in an individual with previous episodes of OCD who has been symptom free of an SSRI for the past 3 years.
6 – **Prior History:** There is a history of the criteria having been met for the disorder but the individual is considered to have recovered from it.

When did you last have (ANY OBSESSIONS OR COMPULSIONS)? Number of months prior to interview when last had a symptom of Obsessive Compulsive Disorder ___ ___ ___ F101

AGE AT ONSET

IF UNKNOWN: How old were you when you first started having (OBSESSIONS OR COMPULSIONS)? Age at onset of Obsessive Compulsive Disorder (CODE 99 IF UNKNOWN). ___ ___ F102

GO TO ***PTSD,*** F. 25

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

***GENERALIZED ANXIETY DISORDER* (CURRENT ONLY)** **GENERALIZED ANXIETY DISORDER CRITERIA**

SCREEN Q# 11 YES | NO F134a

IF: IN RESIDUAL PHASE OF SCHIZOPHRENIA, CHECK HERE ___ AND GO TO ***ANXIETY DISORDER NOS,*** F. 40 F134b

IF NO: GO TO ***ANXIETY DISORDER NOS*** F. 40

IF SCREENING QUESTION #11 ANSWERED "NO," SKIP TO ***ANXIETY DISORDER NOS,*** F. 40

IF QUESTION #11 ANSWERED "YES": You've said that in the last 6 months you've been particularly nervous or anxious . . .

IF SCREENER NOT USED: In the last 6 months, have you been particularly nervous or anxious?

Do you also worry a lot about bad things that might happen?

IF YES: What do you worry about? (How much do you worry about [EVENTS OR ACTIVITIES]?)

During the last 6 months, would you say that you have been worrying more days than not?

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance). ? 1 2 3 F135

GO TO ***ANXIETY DISORDER NOS*** F. 40

When you're worrying this way, do you find that it's hard to stop yourself?

B. The person finds it difficult to control the worry. ? 1 2 3 F136

GO TO ***ANXIETY DISORDER NOS*** F. 40

When did this anxiety start? COMPARE ANSWER WITH ONSET OF MOOD OR PSYCHOTIC DISORDER.

F(2). Does not occur exclusively during the course of a Mood Disorder, Psychotic Disorder, or a Pervasive Developmental Disorder. ? 1 3 F137

GO TO ***ANXIETY DISORDER NOS*** F. 40

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Now I am going to ask you some questions about symptoms that often go along with being nervous.

Thinking about those periods in the past 6 months when you're feeling nervous or anxious . . .

C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms present for more days than not for the past 6 months):

Note: only one item is required in children.

. . . do you often feel physically restless--can't sit still? . . . do you often feel keyed up or on edge?	(1) restlessness or feeling keyed up or on edge	?	1	2	3	F138
. . . do you often tire easily?	(2) being easily fatigued	?	1	2	3	F139
. . . do you have trouble concentrating or does your mind go blank?	(3) difficulty concentrating or mind going blank	?	1	2	3	F140
. . . are you often irritable?	(4) irritability	?	1	2	3	F141
. . . are your muscles often tense?	(5) muscle tension	?	1	2	3	F142
. . . do you often have trouble falling or staying asleep?	(6) sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep)	?	1	2	3	F143
	AT LEAST THREE "C" SXS ARE CODED "3."	?	1	2	3	F144

GO TO *ANXIETY DISORDER NOS* F. 40

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

CODE BASED ON PREVIOUS INFORMATION	D. The focus of the anxiety and worry is not confined to the features of another Axis I Disorder, e.g., the anxiety or worry is not about having a panic attack (as in Panic Disorder), being embarrassed in public (as in Social Phobia), being contaminated (as in Obsessive Compulsive Disorder), being away from home or close relatives (as in Separation Anxiety Disorder), gaining weight (as in Anorexia Nervosa), having multiple physical complaints (as in Somatization Disorder), or having a serious illness (as in Hypochondriasis), and the anxiety or worry do not occur exclusively during Posttraumatic Stress Disorder.	?	1		3	F145
IF UNCLEAR: What effect has the anxiety, worry, or (PHYSICAL SYMPTOMS) had on your life? (Has it made it hard for you to do your work or be with your friends?)	E. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.	?	1	2	3	F146

GO TO *ANXIETY DISORDER NOS* F. 40

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Just before you began having this anxiety, were you taking any drugs, caffeine, diet pills, or other medicines?

(How much coffee, tea, or caffeinated soda do you drink a day?)

Just before these problems began, were you physically ill?

IF YES: What did the doctor say?

F. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or to a general medical condition. ? 1 3 F147

IF THERE IS ANY INDICATION THAT THE ANXIETY MAY BE SECONDARY (I.E., A DIRECT PHYSIOLOGICAL CONSEQUENCE OF A GMC OR SUBSTANCE, GO TO ***GMC/ SUBSTANCE*** F.36, AND RETURN HERE TO MAKE A RATING OF "1" OR "3."

1: DUE TO SUBSTANCE USE OR A GMC — GO TO ***ANXIETY DISORDER NOS*** F. 40

3: PRIMARY ANXIETY DISORDER

Etiological general medical conditions include: hyper- and hypo-thyroidism, hypoglycemia, hyper-parathyroidism, pheochromocytoma, congestive heart failure, arrhythmias, pulmonary embolism, chronic obstructive pulmonary disease, pneumonia, hyperventilation, B-12 deficiency, porphyria, CNS neoplasms, vestibular dysfunction, encephalitis.

Etiological substances include: intoxication with central nervous stimulants (e.g., cocaine, amphetamines, caffeine) or cannabis, hallucinogens, PCP, or alcohol or withdrawal from central nervous system depressants (e.g., alcohol, sedatives, hypnotics) or from cocaine.

CONTINUE

GENERALIZED ANXIETY CRITERIA A, B, C, D, E, AND F ARE CODED "3."

1 3 F148

1: GO TO ***ANXIETY DISORDER NOS*** F. 40

3: GENERALIZED ANXIETY DISORDER

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

CHRONOLOGY OF GENERALIZED ANXIETY DISORDER F148a

INDICATE CURRENT SEVERITY:

1 - **Mild:** Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.
2 - **Moderate:** Symptoms or functional impairment between "mild" and "severe" are present.
3 - **Severe:** Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe are present, or the symptoms result in marked impairment in social or occupational functioning.

AGE AT ONSET

IF UNKNOWN: How old were you when you first started having (SXS OF GAD)? Age at onset of Generalized Anxiety Disorder (CODE 99 IF UNKNOWN) ___ ___ F149

GO TO NEXT MODULE

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

F. ANXIETY DISORDERS

PANIC DISORDER **PANIC DISORDER CRITERIA**

SCREEN Q# 4 YES | NO F1a

IF SCREENING QUESTION #4 ANSWERED "NO," SKIP TO ***AWOPD,*** F. 7.

GO TO *AWOPD* F. 7

IF QUESTION #4 ANSWERED "YES": You've said that you have had a panic attack, when you suddenly felt frightened, or anxious or suddenly developed a lot of physical symptoms . . .

IF SCREENER NOT USED: Have you ever had a panic attack, when you suddenly felt frightened, or anxious or suddenly developed a lot of physical symptoms?

IF YES: Have these attacks ever come on completely out of the blue--in situations where you didn't expect to be nervous or uncomfortable?

IF UNCLEAR: How many of these kinds of attacks have you had? (At least two?)

A. (1) recurrent unexpected panic attacks ? 1 2 3 F1

GO TO *AWOPD* F. 7

After any of these attacks...

(2) at least one of the attacks has been followed by 1 month (or more) of one of the following: ? 1 2 3 F2

GO TO *AWOPD* F. 7

Did you worry that there might be something terribly wrong with you, like you were having a heart attack or were going crazy? (How long did you worry?) (At least a month?)

(b) worry about the implications of the attack or its consequences (e.g., losing control, having a heart attack, "going crazy");

IF NO: Did you worry a lot about having another one? (How long did you worry?) (At least a month?)

(a) persistent concern about having additional attacks;

IF NO: Did you do anything differently because of the attacks (like avoiding certain places or not going out alone?) (What about things like always making sure you're near a bathroom or exit?)

(c) a significant change in behavior related to the attacks;

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

NOW CHECK TO SEE IF CRITERIA ARE MET FOR A PANIC ATTACK.

When was the last bad one? What was the first thing you noticed? Then what?

IF UNKNOWN: Did the symptoms come on all of a sudden?

The panic attack symptoms developed abruptly and reached a peak within 10 minutes. ? 1 2 3 F3

GO TO *AWOPD* F. 7

IF YES: How long did it take from when it began to when it got really bad? (Less than 10 minutes?)

During that attack...

...did your heart race, pound or skip?	(1) palpitations, pounding heart, or accelerated heart rate	?	1	2	3	F4
...did you sweat?	(2) sweating	?	1	2	3	F5
...did you tremble or shake?	(3) trembling or shaking	?	1	2	3	F6
...were you short of breath? (Have trouble catching your breath?)	(4) sensations of shortness of breath or smothering	?	1	2	3	F7
...did you feel as if you were choking?	(5) feeling of choking	?	1	2	3	F8
...did you have chest pain or pressure?	(6) chest pain or discomfort	?	1	2	3	F9
...did you have nausea or upset stomach or the feeling that you were going to have diarrhea?	(7) nausea or abdominal distress	?	1	2	3	F10
...did you feel dizzy, unsteady, or like you might faint?	(8) feeling dizzy, unsteady, light-headed or faint	?	1	2	3	F11
...did things around you seem unreal or did you feel detached from things around you or detached from part of your body?	(9) derealization (feelings of un-reality) or depersonalization (being detached from oneself)	?	1	2	3	F12
...were you afraid you were going crazy or might lose control?	(10) fear of losing control or going crazy	?	1	2	3	F13
...were you afraid that you might die?	(11) fear of dying	?	1	2	3	F14

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

...did you have tingling or numbness in parts of your body?	(12) paresthesias (numbness or tingling sensations)	? 1 2 3	F15
...did you have flushes (hot flashes) or chills?	(13) chills or hot flushes	? 1 2 3	F16
	AT LEAST FOUR ITEMS CODED "3" AND REACHED PEAK WITHIN 10 MINUTES (I.E., F3 CODED "3")	1 3 — GO TO *AWOPD* F. 7	F17
Just before you began having panic attacks, were you taking any drugs, caffeine, diet pills, or other medicines? (How much coffee, tea, or caffeinated soda do you drink a day?) Just before the attacks, were you physically ill? IF YES: What did the doctor say?	C. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or to a general medical condition. IF THERE IS ANY INDICATION THAT PANIC ATTACKS MAY BE SECONDARY (I.E., A DIRECT PHYSIOLOGICAL CONSEQUENCE OF A GMC OR SUBSTANCE, GO TO ***GMC / SUBSTANCE,*** F. 36, AND RETURN HERE TO MAKE A RATING OF "1" OR "3." Etiological general medical conditions include: hyperthyroidism, hyperparathyroidism, pheochromocytoma, vestibular dysfunctions, seizure disorders, and cardiac conditions (e.g., arrhythmias, supraventricular tachycardia). Etiological substances include: intoxication with central nervous stimulants (e.g., cocaine, amphetamines, caffeine) or cannabis or withdrawal from central nervous system depressants (e.g., alcohol, barbiturates) or from cocaine.	? 1 3 1: DUE TO SUBSTANCE USE OR GMC — GO TO *AWOPD* F. 7 3: PRIMARY ANXIETY DISORDER CONTINUE	F18
	D. The panic attacks are not better accounted for by another mental disorder, such as Social Phobia (e.g., occurring on exposure to feared social situations), Specific Phobia, Obsessive-Compulsive Disorder (e.g., on exposure to dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder, or Separation Anxiety Disorder.	? 1 3 1: GO TO *AWOPD* F. 7	F19
	A, B, C, AND D CODED "3."	? 1 3 1: GO TO *AWOPD* F. 7 3: PANIC DISORDER	F19a

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

PANIC DISORDER WITH AGORAPHOBIA

IF NOT OBVIOUS FROM OVERVIEW: Are there situations that make you nervous because you are afraid that you might have a panic attack? Tell me about that. IF CANNOT GIVE SPECIFICS: What about . . . ...being uncomfortable if you're more than a certain distance from home? ...being in a crowded place like a busy store, movie theatre, or restaurant? ...standing in a line? ...being on a bridge? ...using public transportation--like a bus, train, or subway--or driving a car?	B. The presence of Agoraphobia: (1) anxiety about being in places or situations from which escape might be difficult (or embarrassing) or in which help may not be available in the event of having an unexpected or situationally predisposed Panic Attack or panic-like symptoms. Agoraphobic fears typically involve characteristic clusters of situations that include being outside the home alone; being in a crowd or standing in a line; being on a bridge; and traveling in a bus, train or automobile	? 1 2 3 1: PANIC DISORDER WITHOUT AGORA-PHOBIA GO TO *CHRON-OLOGY* F. 6	F20
Do you avoid these situations? IF NO: When you are in one of these situations, do you feel very uncomfortable or like you might have a panic attack? (Can you go into one of these situations only if you are with someone you know?)	(2) agoraphobic situations are avoided (e.g., travel is restricted), or else endured with marked distress or with anxiety about having a panic attack or panic-like symptoms, or require the presence of a companion	? 1 2 3 1: PANIC DISORDER WITHOUT AGORA-PHOBIA GO TO *CHRON-OLOGY* F. 6	F21

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

(3) the anxiety or phobic avoidance is not better accounted for by another mental disorder, such as Social Phobia (e.g., avoidance limited to social situations because of fear of embarrassment), Specific Phobia (e.g., avoidance limited to a single situation like elevators), Obsessive-Compulsive Disorder (e.g., avoidance of dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder (e.g., avoidance of stimuli associated with a severe stressor), or Separation Anxiety Disorder (e.g., avoidance of leaving home or relatives)

? 1 3 F22

1 → PANIC DISORDER WITHOUT AGORA-PHOBIA

GO TO *CHRON-OLOGY* F. 6

NOTE: CONSIDER SPECIFIC PHOBIA IF FEAR IS LIMITED TO ONE OR ONLY A FEW SPECIFIC SITUATIONS OR SOCIAL PHOBIA IF FEAR IS LIMITED TO SOCIAL SITUATIONS

B(1), B(2), B(3) ALL CODED "3." 1 3 F23

1 → PANIC DISORDER WITHOUT AGORA-PHOBIA

3 → PANIC DISORDER WITH AGORA-PHOBIA

PANIC DISORDER CHRONOLOGY

IF UNCLEAR: During the past month how many panic attacks have you had? (Are there any situations you have avoided because of the panic attacks?)

Has met symptomatic criteria for Panic Disorder during the past month, i.e., recurrent unexpected panic attacks or agoraphobic avoidance

? 1 3 F24

INDICATE CURRENT SEVERITY:
1 - **Mild**: Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairment in social or occupational functioning.
2 - **Moderate**: Symptoms or functional impairment between "mild" and "severe" are present.
3 - **Severe**: Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

CONTINUE WITH ***AGE AT ONSET***, BELOW. F25

IF CURRENT CRITERIA NOT FULLY MET (OR NOT AT ALL): F26
4 - **In Partial Remission**: The full criteria for the disorder were previously met but currently only some of the symptoms or signs of the disorder remain.
5 - **In Full Remission**: There are no longer any symptoms or signs of the disorder, but it Is still clinically relevant to note the disorder--for example, in an individual with previous episodes of Panic Disorder who has been symptom free on antidepressants for the past 3 years.
6 - **Prior History**: There is a history of the criteria having been met for the disorder but the individual is considered to have recovered from it.

When did you last have (ANY SXS OF PANIC DISORDER)? Number of months prior to interview when last had a symptom of Panic Disorder ___ ___ ___ F27

AGE AT ONSET

IF UNKNOWN: How old were you when you first started having panic attacks?

Age at onset of Panic Disorder (CODE 99 IF UNKNOWN). ___ ___ F28

GO TO *SOCIAL PHOBIA* F. 11

AGORAPHOBIA WITHOUT HISTORY OF PANIC DISORDER (AWOPD)

AGORAPHOBIA WITHOUT HISTORY OF PANIC DISORDER (AWOPD) CRITERIA

F26a

IF: EVER MET CRITERIA FOR PANIC DISORDER, CHECK HERE ___ AND SKIP TO ***SOCIAL PHOBIA,*** F. 11.

SCREEN Q# 5 YES | | NO F26b

IF NO: GO TO ***SOCIAL PHOBIA*** F. 11

→ IF SCREENING QUESTION #5 ANSWERED "NO," SKIP TO ***SOCIAL PHOBIA,*** F. 11.

→ IF QUESTION #5 ANSWERED "YES": You've said that you have been afraid of going out of the house alone, being in crowds, standing in a line, or traveling on buses or trains . . .

→ IF SCREENER NOT USED: Were you ever afraid of going out of the house alone, being alone, being in a crowd, standing in a line, or traveling on buses or trains?

What were you afraid could happen?

A. The presence of Agoraphobia: ? 1 2 3 F29

GO TO ***SOCIAL PHOBIA*** F. 11

(1) anxiety about being in places or situations from which escape might be difficult (or embarrassing) or in which help may not be available in the event of having panic-like symptoms (e.g., dizziness or diarrhea). Agoraphobic fears typically involve characteristic clusters of situations that include being outside the home alone; being in a crowd or standing in a line; being on a bridge; and traveling in a bus, train, or car

INDICATE FEARED SYMPTOM:

___ having a limited symptom attack (a panic-like attack with less than four symptoms) F30

___ becoming dizzy or falling F31

___ depersonalization or derealization F32

___ loss of bladder or bowel control F33

___ vomiting F34

___ fear of cardiac distress F35

___ other (Specify:_____) F36

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Do you avoid these situations?

IF NO: When you are in one of these situations, do you feel very uncomfortable or like you might have a panic attack?

(Can you go into one of these situations only if you are with someone you know?)

(2) agoraphobic situations are avoided (e.g., travel is restricted), or else endured with marked distress or with anxiety about having panic-like symptoms, or require the presence of a companion ? 1 2 3 F37

GO TO ***SOCIAL PHOBIA*** F. 11

(3) the anxiety or phobic avoidance is not better accounted for by another mental disorder, such as Social Phobia (e.g., avoidance limited to social situations because of fear of embarrassment), Specific Phobia (e.g., avoidance limited to single situations like elevators), Obsessive-Compulsive Disorder (e.g., avoidance of dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder (e.g., avoidance of stimuli associated with a severe stressor), Separation Anxiety Disorder (e.g., avoidance of leaving home or relatives) ? 1 3 F38

GO TO ***SOCIAL PHOBIA*** F. 11

NOTE: CONSIDER SPECIFIC PHOBIA IF FEAR IS LIMITED TO ONE OR ONLY A FEW SPECIFIC SITUATIONS, OR SOCIAL PHOBIA IF FEAR IS LIMITED TO SOCIAL SITUATIONS.

A(1), A(2), A(3) ALL CODED "3." 1 3 F39

GO TO ***SOCIAL PHOBIA*** F. 11

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Just before you began having these fears, were you taking any drugs, caffeine, diet pills, or other medicines?

(How much coffee, tea, or caffeinated soda do you drink a day?)

Just before the fears began, were you physically ill?

IF YES: What did the doctor say?

C. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or to a general medical condition. ? 1 3 F40

DUE TO SUBSTANCE USE OR GMC

GO TO ***SOCIAL PHOBIA*** F. 11

IF THERE IS ANY INDICATION THAT THE ANXIETY MAY BE SECONDARY (I.E., A DIRECT PHYSIOLOGICAL CONSEQUENCE OF A GMC OR SUBSTANCE, GO TO ***GMC/ SUBSTANCE,*** F. 36, AND RETURN HERE TO MAKE A RATING OF "1" OR "3."

PRIMARY ANXIETY DISORDER

Etiological general medical conditions include hyper- and hypothyroidism, hypoglycemia, hyperparathyroidism, pheochromocytoma, congestive heart failure, arrhythmias, pulmonary embolism, chronic obstructive pulmonary disease, pneumania, hyperventilation, B-12 deficiency, porphyria, CNS neoplasms, vestibular dysfunction, encephalitis.

Etiological substances include intoxication with central nervous stimulants (e.g., cocaine, amphetamines, caffeine) or cannabis, hallucinogens, PCP, or alcohol, or withdrawal from central nervous system depressants (e.g., alcohol, sedatives, hypnotics) or from cocaine.

CONTINUE

D. If an associated general medical condition is present, the fear described in criterion A is clearly in excess of that usually associated with the condition. 1 3 F41

GO TO ***SOCIAL PHOBIA*** F. 11

AWOPD

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

AGORAPHOBIA WITHOUT PANIC CHRONOLOGY

IF UNCLEAR: During the past month, have you avoided (PHOBIC SITUATIONS)?

Has met criteria for Agoraphobia without History of Panic Disorder during past month ? 1 3 F42

INDICATE CURRENT SEVERITY: F43

1 - **Mild:** Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.

2 - **Moderate:** Symptoms or functional impairment between "mild" and "severe" are present.

3 - **Severe:** Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

CONTINUE WITH ***AGE AT ONSET*** BELOW.

IF CURRENT CRITERIA NOT FULLY MET (OR NOT AT ALL): F44

4 - **In Partial Remission:** The full criteria for the disorder were previously met, but currently only some of the symptoms or signs of the disorder remain.

5 - **In Full Remission:** There are no longer any symptoms or signs of the disorder, but it is still clinically relevant to note the disorder--for example, in an individual with previous episodes of AWOPD who has been symptom free on an antianxiety agent for the past 3 years.

6 - **Prior History:** There is a history of the criteria having been met for the disorder, but the individual is considered to have recovered from it.

When did you last have (ANY SX OF AGORAPHOBIA)?

Number of months prior to interview when last had a symptom of Agoraphobia Without Panic Disorder ___ ___ ___ F45

AGE AT ONSET

IF UNKNOWN: How old were you when you first started having (SXS OF AGORAPHOBIA)?

Age at onset of Agoraphobia Without Panic Disorder (CODE 99 IF UNKNOWN) ___ ___ F46

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

S

SOCIAL PHOBIA

SOCIAL PHOBIA CRITERIA

→ IF SCREENING QUESTIONS #6 AND #7 ARE BOTH ANSWERED "NO," SKIP TO ***SPECIFIC PHOBIA,*** F. 16.

→ IF QUESTION #6 ANSWERED "YES": You've said that there are things that you have been afraid to do in front of other people, like speaking, eating, or writing . . .

SCREEN Q# 6 YES | NO F46a

→ IF QUESTION #7 ANSWERED "YES": You've [also] said that you have been especially nervous or anxious in social situations that involve people that you don't know very well...

SCREEN Q# 7 YES | NO F46b

IF NO: GO TO *SPECIFIC PHOBIA* F. 16

→ IF SCREENER NOT USED: Has there been anything that you have been afraid to do or felt uncomfortable doing in front of other people, like speaking, eating, or writing?

IF NO: Have you been especially nervous or anxious in social situations that involve people that you don't know very well?

IF YES TO EITHER OF ABOVE: Tell me about that. Give me some examples of when this has happened..

What were you afraid would happen When you are in (SOCIAL OR PERFORMANCE SITUATION)?

IF PUBLIC SPEAKING FEARS ONLY: (Do you think that you are more uncomfortable than most people are in that situation?)

A. A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing.

? 1 2 3 F47

GO TO *SPECIFIC PHOBIA* F. 16

PHOBIC SITUATION(S) Check:

___ public speaking F48
___ eating in front of others F49
___ writing in front of others F50
___ generalized (most social situations) F51

___ other (Specify:_____) F52

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Note: In adolescents, there must be evidence of capacity for age-appropriate relationships with familiar people and the anxiety must occur in peer settings, not just in interactions with adults.

Have you always felt anxious when you (CONFRONTED PHOBIC STIMULUS)?

B. Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed Panic Attack.

Note: In children, the anxiety may be expressed by crying, tantrums, freezing, or shrinking from social situations with unfamiliar people.

? 1 2 3 F53

GO TO *SPECIFIC PHOBIA* F. 16

Did you think that you were more afraid of (PHOBIC ACTIVITY) than you should have been (or than made sense)?

C. The person recognizes that the fear is excessive or unreasonable. Note: In children, this feature may be absent.

? 1 2 3 F54

GO TO *SPECIFIC PHOBIA* F. 16

IF NOT OBVIOUS: Did you go out of your way to avoid _____?

IF NO: How hard was it for you to _____?

D. The feared social or performance situations are avoided, or else endured with intense anxiety or distress.

? 1 2 3 F55

GO TO *SPECIFIC PHOBIA* F. 16

IF UNCLEAR WHETHER FEAR WAS CLINICALLY SIGNIFICANT: How much did _____ interfere with your life?

IF DOES NOT INTERFERE WITH LIFE: How much has the fact that you have this fear bothered you?

E. The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.

? 1 2 3 F56

GO TO *SPECIFIC PHOBIA* F. 16

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

IF UNDER AGE 18: (For how long have you had these fears?)

F. In individuals under age 18 years, the duration is at least 6 months. ? 1 2 3 F57

1 → GO TO *SPECIFIC PHOBIA* F. 16

Just before you began having these fears, were you taking any drugs, caffeine, diet pills, or other medicines?

(How much coffee, tea, or caffeinated soda did you drink a day?)

Just before the fears began, were you physically ill?

IF YES: What did the doctor say?

G. The fear or avoidance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition. ? 1 3 F58

? → DUE TO SUBSTANCE USE OR GMC

1 → GO TO *SPECIFIC PHOBIA* F. 16

3 → PRIMARY ANXIETY DISORDER

IF THERE IS ANY INDICATION THAT THE ANXIETY MAY BE SECONDARY (I.E., A DIRECT PHYSIOLOGICAL CONSEQUENCE OF THE GMC OR SUBSTANCE, GO TO ***GMC/ SUBSTANCE,*** F. 36, AND RETURN HERE TO MAKE A RATING OF "1" OR "3."

Etiological general medical conditions include: hyper- and hypothyroidism, hypoglycemia, hyperparathyroidism, pheochromocytoma, congestive heart failure, arrhythmias, pulmonary embolism, chronic obstructive pulmonary disease, pneumonia, hyperventilation, B-12 deficiency, porphyria, CNS neoplasms, vestibular dysfunction, encephalitis.

Etiological substances include: intoxication with central nervous stimulants (e.g., cocaine, amphetamines, caffeine) or cannabis, hallucinogens, PCP, or alcohol, or withdrawal from central nervous system depressants (e.g., alcohol, sedatives, hypnotics) or from cocaine.

CONTINUE

...and is not better accounted for by another mental disorder (e.g., Panic Disorder Without Agoraphobia, Separation Anxiety Disorder, Body Dysmorphic Disorder, a Pervasive Developmental Disorder, or Schizoid Personality Disorder). ? 1 2 3 F59

1 → GO TO *SPECIFIC PHOBIA* F. 16

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

IF NOT ALREADY CLEAR: RETURN TO THIS ITEM AFTER COMPLETING INTERVIEW.

H. If a general medical condition or other mental disorder is present, the fear in A is unrelated to it, e.g., the fear is not of stuttering, trembling (in Parkinson's disease) or exhibiting abnormal eating behavior (in Anorexia Nervosa or Bulimia Nervosa). ? 1 2 3 F60

1 → GO TO *SPECIFIC PHOBIA* F. 16

NOTE: Social anxiety related to a general medical condition or other mental disorder may be indicated as Anxiety Disorder NOS (page F. 40)

SOCIAL PHOBIA CRITERIA A, B, C, D, E, F, G, AND H ARE CODED "3." 1 3 F61

1 → GO TO *SPECIFIC PHOBIA* F. 16

3 → SOCIAL PHOBIA

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

SCID-I (for DSM-IV-TR) Social Phobia (NOV 2011) Anxiety Disorders F. 15

SOCIAL PHOBIA CHRONOLOGY

IF UNCLEAR: During the past month, have you been bothered by (SOCIAL PHOBIA SITUATION)?	Criteria have been met for Social Phobia during past month.	?	1	3	F62

INDICATE CURRENT SEVERITY: F63
1 - **Mild:** Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.
2 - **Moderate:** Symptoms or functional impairment between "mild" and "severe" are present.
3 - **Severe:** Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe are present, or the symptoms result in marked impairment in social or occupational functioning.

CONTINUE WITH ***AGE AT ONSET,*** BELOW.

IF CURRENT CRITERIA NOT FULLY MET (OR NOT AT ALL): F64
4 - **In Partial Remission:** The full criteria for the disorder were previously met, but currently only some of the symptoms or signs of the disorder remain.
5 - **In Full Remission:** There are no longer any symptoms or signs of the disorder, but it is still clinically relevant to note the disorder--for example, in an individual with previous episodes of Social Phobia who has been symptom free on an antianxiety agent for the past 3 years.
6 - **Prior History:** There is a history of the criteria having been met for the disorder, but the individual is considered to have recovered from it.

When did you last have (ANY SX OF SOCIAL PHOBIA)? — Number of months prior to interview when last had a symptom of Social Phobia ___ ___ ___ F65

AGE AT ONSET

IF UNKNOWN: How old were you when you first started having (SXS OF SOCIAL PHOBIA)? — Age at onset of Social Phobia (CODE 99 IF UNKNOWN) ___ ___ F66

GO TO ***SPECIFIC PHOBIA*** F. 16

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

SCID-I (for DSM-IV-TR) Specific Phobia (NOV 2011) Anxiety Disorders F. 16

SPECIFIC PHOBIA **SPECIFIC PHOBIA CRITERIA**

SCREEN Q# 8 YES | NO F66a

IF SCREENING QUESTION #8 ANSWERED "NO," SKIP TO ***OBSESSIVE COMPULSIVE DISORDER,*** F. 20.

IF NO: GO TO ***OBSESSIVE COMPULSIVE DISORDER*** F. 20

IF QUESTION #8 ANSWERED "YES": You've said that there are other things that you've been especially afraid of, like flying, seeing blood, getting a shot, heights, closed places, or certain kinds of animals or insects . . .

IF SCREENER NOT USED: Are there any other things that you've been especially afraid of, like flying, seeing blood, getting a shot, heights, closed places, or certain kinds of animals or insects?	A. Marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation (e.g., flying, heights, animals, receiving an injection, seeing blood).	?	1	2	3	F67
Tell me about that. What were you afraid would happen when (CONFRONTED WITH PHOBIC STIMULUS)?						
Did you always feel frightened when you (CONFRONTED PHOBIC STIMULUS)?	B. Exposure to the phobic stimulus almost invariably provokes an immediate anxiety response, which may take the form of a situationally bound or situationally predisposed Panic Attack. Note: In children, the anxiety may be expressed by crying, tantrums, freezing, or clinging.	?	1	2	3	F68
Did you think that you were more afraid of (PHOBIC STIMULUS) than you should have been (or than made sense)?	C. The person recognizes that the fear is excessive or unreasonable. Note: In children, this feature may be absent.	?	1	2	3	F69

GO TO ***OBSESSIVE COMPULSIVE DISORDER*** F. 20

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

Did you go out of your way to avoid (PHOBIC STIMULUS)? (Are there things you didn't do because of this fear that you would otherwise have done?) IF NO: How hard was it for you to (CONFRONT PHOBIC STIMULUS)?	D. The phobic situation(s) is avoided, or else endured with intense anxiety or distress.	? 1 2 3 1 → GO TO *OBSESSIVE COMPULSVE DISORDER* F. 20	F70
IF UNCLEAR WHETHER FEAR WAS CLINICALLY SIGNIFICANT: How much did (PHOBIA) interfere with your life? (Is there anything you've avoided because of being afraid of [PHOBIC STIMULUS])? IF DOES NOT INTERFERE WITH LIFE: How much has the fact that you were afraid of (PHOBIC STIMULUS) bothered you?	E. The avoidance, anxious anticipation, or distress in the feared situation(s) interferes significantly with the person's normal routine, occupational (or academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.	? 1 2 3 1 → GO TO *OBSESSIVE COMPULSVE DISORDER* F. 20	F71
IF YOUNGER THAN AGE 18: How long have you had these fears?	F. For individuals under age 18 years, the duration is at least 6 months.	? 1 2 3 1 → GO TO *OBSESSIVE COMPULSVE DISORDER* F. 20	F72

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

IF NOT ALREADY CLEAR: RETURN TO THIS ITEM AFTER COMPLETING SECTION ON PTSD AND OBSESSIVE-COMPULSIVE DISORDER.	G. The anxiety, panic attacks, or phobic avoidance associated with the specific object or situation are not better accounted for by another mental disorder, such as Obsessive-Compulsive Disorder (e.g., fear of dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder (e.g. avoidance of stimuli associated with a severe stressor), Separation Anxiety Disorder (e. g., avoidance of school), Social Phobia (e.g., avoidance of social situations because of fear of embarrassment), Panic Disorder With Agoraphobia, or Agoraphobia Without History of Panic Disorder.	? 1 3 1 → GO TO *OBSESSIVE COMPULSIVE DISORDER* F. 20	F73
	SPECIFIC PHOBIA CRITERIA A, B, C, D, E, F, AND G ARE CODED "3."	1 → GO TO *OBSESSIVE COMPULSIVE DISORDER* F. 20 3 → SPECIFIC PHOBIA	F74
	INDICATE TYPE: (Check all that apply)		
	___ **Animal type** (includes insects)		F75
	___ **Natural Environment Type** (includes storms, heights, water)		F76
	___ **Blood-Injection-Injury Type** (includes seeing blood or injury, receiving an injection or other invasive procedure)		F77
	___ **Situational Type** (includes public transportation, tunnels, bridges, elevators, flying, driving, or enclosed places)		F78
	___ **Other Type** (e.g., fear of situations that might lead to choking, vomiting, or contracting an illness; in children, avoidance of loud sounds or costumed characters) Specify:_____		F79

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

SPECIFIC PHOBIA CHRONOLOGY

IF UNCLEAR: During the past month, have you been bothered by (SPECIFIC PHOBIA)? — Has met criteria for Specific Phobia during past month ? 1 3 F80

INDICATE CURRENT SEVERITY: F81
1 - **Mild:** Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.
2 - **Moderate:** Symptoms or functional impairment between "mild" and "severe" are present.
3 - **Severe:** Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

CONTINUE WITH ***AGE AT ONSET,*** BELOW.

IF CURRENT CRITERIA NOT FULLY MET (OR NOT AT ALL): F82
4 - **In Partial Remission:** The full criteria for the disorder were previously met, but currently only some of the symptoms or signs of the disorder remain.
5 - **In Full Remission:** There are no longer any symptoms or signs of the disorder, but it is still clinically relevant to note the disorder--for example, in an individual with previous episodes of Specific Phobia who has been symptom free on an antianxiety agent for the past 3 years.
6 - **Prior History:** There is a history of the criteria having been met for the disorder, but the individual is considered to have recovered from it.

When did you last have (ANY SX OF SPECIFIC PHOBIA)? — Number of months prior to interview when last had a symptom of Specific Phobia ___ ___ ___ F83

AGE AT ONSET

IF UNKNOWN: How old were you when you first started having (SXS OF SPECIFIC PHOBIA)? — Age at onset of Specific Phobia (CODE 99 IF UNKNOWN). ___ ___ F84

GO TO ***OBSESSIVE COMPULSIVE DISORDER*** F. 20

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

B/C PSYCHOTIC SCREENING MODULE (FOR SCID-I/NP OR P W/PSYCHOTIC SCREEN)

THIS MODULE IS FOR CODING PSYCHOTIC AND ASSOCIATED SXS THAT HAVE BEEN PRESENT AT ANY POINT IN THE PERSON'S LIFETIME. IT CAN BE USED FOR CLINICAL AND RESEARCH SETTINGS WHERE THOSE WITH A HISTORY OF PSYCHOTIC SXS THAT ARE NOT DUE TO SUBSTANCE USE OR A GENERAL MEDICAL CONDITION OR THAT OCCUR OUTSIDE THE CONTEXT OF A MOOD DISORDER ARE TO BE EXCLUDED.

FOR EACH PSYCHOTIC SYMPTOM CODED "3," DESCRIBE THE ACTUAL CONTENT AND INDICATE THE PERIOD OF TIME DURING WHICH THE SYMPTOM WAS PRESENT.

FOR ANY PSYCHOTIC AND ASSOCIATED SYMPTOMS CODED "3," DETERMINE WHETHER THE SYMPTOM IS DEFINITELY "PRIMARY" OR WHETHER THERE IS A POSSIBLE OR DEFINITE ETIOLOGIC SUBSTANCE (INCLUDING MEDICATIONS) OR GENERAL MEDICAL CONDITION. THE FOLLOWING QUESTIONS MAY BE USEFUL IF THE OVERVIEW HAS NOT ALREADY PROVIDED THE INFORMATION:

Just before (PSYCHOTIC SXS) began, were you using drugs? ...on any medications? ...did you drink much more than usual or stop drinking after you had been drinking a lot for a while? ...were you physically ill?

IF YES TO ANY: Has there been a time when you had (PSYCHOTIC SXS) and were not (USING DRUGS/TAKING MEDICATION/CHANGING YOUR DRINKING HABITS/ILL)?

Now I am going to ask you about unusual experiences that people sometimes have.

DELUSIONS
False personal beliefs based on incorrect inference about external reality and firmly sustained in spite of what almost everyone else believes and in spite of what constitutes incontrovertible and obvious proof or evidence to the contrary. The belief is not one ordinarily accepted by other members of the person's culture or subculture. Code overvalued ideas (unreasonable and sustained beliefs that are maintained with less than delusional intensity) as "2."

Has it ever seemed like people were talking about you or taking special notice of you?

IF YES: Were you convinced they were talking about you or did you think it might have been your imagination?

What about receiving special messages from the TV, radio, or newspaper, or from the way things were arranged around you?

Delusion of reference, i.e., events, objects, or other people in the individual's immediate environment have a particular or unusual significance. ? 1 2 3 BC1

1 3 BC2
POSS/DEF SUBST/ GMC — PRI-MARY

DESCRIBE:

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

What about anyone going out of their way to give you a hard time, or trying to hurt you?	Persecutory delusion, i.e., the individual (or his or her group) is being attacked, harassed, cheated, persecuted, or conspired against. DESCRIBE:	? 1 2 3 1 3 POSS/DEF SUBST/ GMC PRI-MARY	BC3 BC4
Have you ever felt that you were especially important in some way, or that you had special powers to do things that other people couldn't do?	Grandiose delusion, i.e., content involves exaggerated power, knowledge or importance, or a special relationship to a deity or famous person. DESCRIBE:	? 1 2 3 1 3 POSS/DEF SUBST/ GMC PRI-MARY	BC5 BC6
Have you ever felt that something was very wrong with you physically even though your doctor said nothing was wrong...like you had cancer or some other terrible disease? Have you ever been convinced that something was very wrong with the way a part or parts of your body looked? Have you ever felt that something strange was happening to parts of your body?	Somatic delusion, i.e., content involves change or disturbance in body appearance or functioning. DESCRIBE:	? 1 2 3 1 3 POSS/DEF SUBST/ GMC PRI-MARY	BC7 BC8
Have you ever had any unusual religious experiences? Have you ever felt that you had committed a crime or done something terrible for which you should be punished? Have you ever been convinced that your spouse or partner was being unfaithful to you? IF YES: How did you know they were being unfaithful? Did you ever feel you had a special, secret relationship with someone famous, or someone you didn't know very well?	Other delusions Check if: ___ religious delusions ___ delusions of guilt ___ jealous delusions ___ erotomanic delusions DESCRIBE:	? 1 2 3 1 3 POSS/DEF SUBST/ GMC PRI-MARY	BC9 BC10 BC11 BC12 BC13 BC14

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

	HALLUCINATIONS (PSYCHOTIC) A sensory perception that has the compelling sense of reality of a true perception but occurs without external stimulation of the relevant sensory organ. (CODE "2" FOR HALLUCINATIONS THAT ARE SO TRANSIENT AS TO BE WITHOUT DIAGNOSTIC SIGNIFICANCE)		
Did you ever hear things that other people couldn't hear, such as noises, or the voices of people whispering or talking? (Were you awake at the time?) IF YES: What did you hear? How often did you hear it?	Auditory hallucinations when fully awake, heard either inside or outside of head DESCRIBE:	? 1 2 3 1 3 POSS/DEF SUBST/ GMC PRI-MARY	BC15 BC16
IF VOICES: Did they comment on what you were doing or thinking?	A voice keeping up a running commentary on the individual's behavior or thoughts as they occur	? 1 2 3	BC17
How many voices did you hear? Were they talking to each other?	Two or more voices conversing with each other	? 1 2 3	BC18
Did you ever have visions or see things that other people couldn't see? (Were you awake at the time?) NOTE: DISTINGUISH FROM AN ILLUSION, I.E., A MISPERCEPTION OF A REAL EXTERNAL STIMULUS.	Visual hallucinations DESCRIBE:	? 1 2 3 1 3 POSS/DEF SUBST/ GMC PRI-MARY	BC19 BC20

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

SCID-I/NP or P W/PSY SCREEN (for DSM-IV-TR) Psychotic Symptoms (JAN 2010) B/C. 4

What about strange sensations in your body or on your skin?

Tactile hallucinations, e.g., electricity ? 1 2 3 BC21

DESCRIBE: 1 3 BC22

POSS/DEF SUBST/ GMC — PRI-MARY

(What about smelling or tasting things that other people couldn't smell or taste?)

Other hallucinations, e.g., gustatory, olfactory ? 1 2 3 BC23

Check if:
___ gustatory
___ olfactory

1 3 BC24 BC25 BC26

POSS/DEF SUBST/ GMC — PRI-MARY

DESCRIBE:

ANY ITEM CODED "3" IN "PRIMARY" SECTION ? 1 3 BC27

GO TO NEXT MODULE

A PRI-MARY PSYCHO-TIC SX HAS BEEN PRESENT

IF A MAJOR DEPRESSIVE OR MANIC EPISODE HAS EVER BEEN PRESENT: Has there ever been a time when you had (PSYCHOTIC SXS) and you were not (DEPRESSED/MANIC)?

Psychotic symptoms occur at times other than during mood syndromes ? 1 3 BC28

NOTE: CODE "3" IF NO MOOD SYNDROMES OR PSYCHOTIC SXS W/O MOOD EPISODES. CODE "1" ONLY IF PSYCHOTIC SYMPTOMS OCCUR EXCLUSIVELY DURING UNEQUIVOCAL MOOD SYNDROMES.

PSYCHO-TIC MOOD DISOR-DER.

GO TO NEXT MODULE

PSYCHO-TIC DIS-ORDER LIKELY

EXPLORE DETAILS AND DESCRIBE DIAGNOSTIC SIGNIFICANCE:

?=inadequate information 1=absent or false 2=subthreshold 3=threshold or true

P. Debrief information

Department of Psychology

Royal Holloway, University of London, Egham, Surrey TW20 0EX, UK

Debriefing Information
Decisions and Judgements in Everyday Scenarios: when both acting and not acting result in harm.

Thank you very much for completing my study on decisions and judgements in everyday scenarios.

I can now tell you a little more information about what the study is about…

Previous research has found that people with Obsessive-Compulsive Disorder (OCD) are more likely to decide to prevent potential harm than people without OCD in situations relevant to their OCD. For example, some people with OCD may be more likely to remove broken glass from the street if they think there may be potential harm to others; others may be more likely to wash their hands if they are worried about germs.

However, what we don't know yet is what people decide to do when they are told that their act to try and prevent harm will result in other harm (for example, if you move the broken glass, some other people will hurt themselves on the glass). We are particularly interested in whether people with and without OCD make different decisions in these scenarios.

We hope that the results of the study will help us to find out how some thinking styles might be related to decisions to act to try and prevent harm (the compulsion part of OCD). It is hoped that by understanding this, we will be able to improve the treatment offered to those with OCD.

A written copy of this 'Debriefing Information' can be sent to you (by email or post); if you would like this, please let me know.

What Next?
You have now finished your participation in the study. Thank you! As a token of my appreciation, you will be entered into a prize draw, which will be drawn once the research is complete (around April 2016). The winner will receive £50, and two runners up will receive £25 each. Are you happy for me to keep a record of your telephone number or email address? If so, this will no longer be paired with your questionnaire responses and will be securely stored only for the purpose of being entered into the prize draw when the research is complete. I will contact the winner using their chosen contact method, to organize the delivery of their prize!

Would you like to receive a summary of the results when they have been collected? If so, please may I take your contact details so that I can make sure I send them to you?

(These will again be stored separately from the questionnaire responses, and will only be used for this purpose).

What Should I Do If I Would Like To Find Out More?
Please call 01784 414012 (and ask to speak to Zoe Kindynis) or email zoe.kindynis.2013@live.rhul.ac.uk if you have any questions regarding this study or would like any further information.

What If There Is A Problem?
If you have a concern about any aspect of this study, you should ask to speak to the Zoe Kindynis on 01784 414012 and I will do my best to answer your questions. If you remain unhappy and wish to speak to someone outside of the research team, please contact Carol Blackman at the Psychology Department, Royal Holloway, University of London on 01784 443528.

Q. Research summary

Summary of Research Study

Thank you for taking part in my research study on Decisions and Judgements in OCD! You are being contacted because you noted that you would like to be informed of the main results of the study. These are presented below.

What the literature tells us so far:

1. Individuals with OCD, compared to individuals without OCD, are more likely to act to prevent potential harm, but only in everyday situations (Foa et al., 2003) that are relevant to their obsessional concerns (Wroe and Salkovskis, 2000).

2. Moral reasoning is often researched using scenarios where there is potential harm and where there are 2 options: option 1, to do nothing (not to act to prevent harm); or option 2, to act to prevent that potential harm, but by doing so causing other, albeit less, harm. For example, a commonly used scenario to explore moral reasoning is the runaway train dilemma. This dilemma says that there is a runaway train headed towards 5 people on a track. The reader has the option to pull a lever that will change the train's path towards 1 person on another track.
Research suggests that individuals with OCD are *less* likely to try and prevent harm in these scenarios when compared to individuals without OCD (Mancini & Gangemi, 2015; Whitton, Henry & Grisham, 2014) i.e. participants with OCD would be less likely to pull the lever to change the train's track.
Whilst interesting, these studies are criticised because they used non-everyday, non-OCD relevant situations, which is unsupported by the above research in which decision differences between those with and without OCD are specific to everyday, OCD-relevant situations.

3. Many factors have been suggested to explain decision differences between those with and without OCD. These include: responsibility (Franklin et al, 2009; Wroe & Salkovskis, 2000); guilt (Mancini & Gangemi, 2015); and moral sensitivity (Harrison et al., 2012). However, little is known about these factors and about their relative contributions to decision differences.

Therefore this study aimed to:

1. Provide support for the notion that individuals with and without OCD only make different decisions in everyday scenarios that are relevant to OCD; in these situations where there is potential harm it was expected that individuals with OCD would be more likely to say that they would act to try and prevent that harm.

2. Explore what happened to the decisions made by people with and without OCD when the scenarios are described such that acting to prevent some harm, may result in other, albeit less, potential harm. We wanted to test whether the previous findings on moral judgement also apply when scenarios describe everyday situations that are more relevant to OCD.

3. Explore whether beliefs and judgements around responsibility, guilt and immorality, contributed to decision differences between individuals with and without OCD.

What we did:

1. We asked individuals with and without OCD to complete a questionnaire about decisions and judgements in different hypothetical scenarios. We also asked everyone to

rank the scenarios beforehand in terms of how distressing they were so that we could compare individuals' responses when considering scenarios that were most- and least-distressing to them. It was hoped that this would mean we could explore individuals' most distressing (and hence, likely to be OCD relevant) scenarios to their least distressing.

2. All scenarios were presented twice. In the first presentation, the potential risk of acting was not stated. In the second presentation, a potential risk of acting was also presented. This second presentation therefore mirrored the train dilemma (where acting would result in other, lesser harm). However, as this study used low-risk, everyday scenarios, and identified individuals most-distressing scenarios, this addressed the criticisms of previous studies.

3. All participants were also asked to rate their general beliefs about responsibility and their feelings of responsibility, immorality and guilt if they did and didn't act in scenarios.

What we found:
1. When risks of acting were not presented, individuals with OCD were found to be more likely to say that they would try and act to prevent harm than individuals without OCD. However, this was only found to be the case in their most-distressing scenarios. Therefore, people with OCD do not generally make different decisions to people without OCD; this is only found to be the case in scenarios related to their individual obsessional concerns. This supports the findings of Wroe and Salkovskis (2000).

2. When risks of acting were presented, individuals with OCD were still more likely than individuals without OCD to act to try and prevent harm only in their obsession-relevant scenarios. This contradicts the findings of Mancini and Gangemi (2015) and Whitton, Henry and Grisham (2014) who suggested individuals with OCD are less likely than individuals without OCD to act to prevent harm when this harm causes other, less harm. Therefore, when presented with everyday scenarios that are more relevant to their OCD, individuals with OCD are still likely to act in a way that reduces overall harm, when risks of acting are presented.

3. From this study, it seemed that the reason individuals with OCD were more likely to act to prevent harm in their most-distressing scenarios was because they felt generally more responsible, and they would have felt more immoral if they didn't act in the specific situation. However, this was only for scenarios when risks of acting were not presented. When risks of acting were presented, general responsibility and feelings of immorality, responsibility and guilt, did not explain differences in decisions, suggesting that when risks of acting were presented, some other factor may have been at play.

These findings are important in improving our understanding of OCD, and developing psychological work that may help people with OCD. However, more research is required to improve our understanding of factors that influence such decisions.

I hope you have found these results interesting. Please do get in touch if you have any questions! Thank you again for taking part in this research.

Zoe Kindynis