Intrusive thoughts and rumination in young people with depression, PTSD and a non-clinical control group.

Thesis Portfolio

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Acknowledgements

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Thesis Portfolio Abstract

Introduction: Intrusive thoughts (Ciesla & Roberts, 2007; Tanaka et al., 2006) and rumination (Nolen-Hoeksema, Parker & Larson, 1994; Papageorgiou & Wells, 2004) have been found to play a role in maintaining depression in adult samples, however little is known about the experience of these phenomena in young people. Models of post-traumatic stress disorder (PTSD) also propose a major role for evaluative thoughts in the maintenance of PTSD (Ehlers & Clark, 2000). **Aim:** This thesis portfolio focused on the relationship between depression and PTSD and both rumination and intrusive thoughts, and comprised two studies. **Method**: The first study was a meta-analysis (n=5) exploring levels of rumination in young people with depression and non-clinical young people to assess association between depression and rumination. The second study used a between-group, cross-sectional, quantitative design to investigate the experience of intrusive thoughts in 11-18 year olds with depression (n=11), PTSD (n=13) and a non-clinical control (n=28) group was investigated. Young people completed a structured telephone interview concerning the experience, frequency, duration, associated emotion, appraisal and coping style of intrusive thoughts. **Results:** The meta-analysis found that rumination is strongly related to depression in young people compared to non-clinical controls. In the second study, intrusive thoughts were found to be common in all three groups, but were found to be a more common experience in the depression group. Both of the clinical groups appraised their thought more negatively and experienced them as more affect-laden than the non-clinical group. All three groups rated rumination as being the least helpful coping style. **Discussion:** In the discussion the theoretical implications of the research findings for both the Response Styles theory and the PTSD models are explored. Clinical implications, including the potential for psychological interventions to consider teaching young people more helpful coping strategies to manage their intrusive thoughts, and limitations of the study are considered.

Introduction to Thesis portfolio

1.1 Overview

The thesis portfolio consists of two main papers: a meta-analysis exploring rumination in young people with and without depression, and an empirical paper exploring intrusive thoughts in young people with depression, PTSD and a non-clinical control group. An additional methodology chapter is provided to report further information that could not be included in the empirical paper due to the constraints of the word limit of the selected journal. A results chapter outlines the tests used on the data to determine whether the assumptions of parametric data analysis were met. A final discussion chapter integrates the findings from the meta-analysis and the empirical study, and discusses these in the context of current literature, clinical implications and outlines the strengths and weaknesses of the study.

The research within this thesis focused on rumination and intrusive thoughts, in young people with a clinical diagnosis (depression or PTSD) and a non-clinical control group. Intrusive thoughts, rumination and Negative Automatic Thoughts (NATs) are distinct cognitive phenomena, and as such it is important to distinguish between them. While relatively little is known about the experience of intrusive thoughts in depression, NATs are renowned to be an integral feature of depression (Beck, 1963), thus these terms must not be used interchangeably. This chapter will aim to describe the key clinical features of each of the cognitive phenomena, and explore any known relationships between them.

1.2 Intrusive Thoughts

For the purposes of this thesis portfolio, unwanted clinically relevant intrusive thought, impulses or urges are defined as “any distinct, identifiable cognitive event that is unwanted, unintended and recurrent. It interrupts the flow of thought, interferes in task performance, is associated with negative affect and is difficult to control” (Clark, 2005). In

his theoretical account of unwanted intrusions, Rachman (1981) further expanded on the nature of intrusive thoughts, images and impulses by outlining three features that are necessary and sufficient for defining a thought as intrusive; it must interrupt an ongoing activity; it must be attributed to an internal origin, and it must be difficult to control.

Rachman (1981) also noted the close link between the frequency and controllability of intrusive phenomena and the emotional state of an individual. He speculated that dysphoria contributes to the persistence of intrusions by impairing controllability and thus prolonging their duration, hence frequent and emotionally distressing intrusive thoughts are more likely to be associated with a negative mood (Clark & de Silva, 1985). However, subsequent research has found that depressed patients experience intrusive thoughts infrequently and that these are not associated with negative mood (Wahl et al., 2011). It must be noted that while using the same definition as for intrusive thoughts, Wahl et al. labelled the thoughts 'obsessive thoughts', and compared the experience of these in participants with obsessive-compulsive disorder (OCD) and depression.

1.3 Intrusive Thoughts vs Negative Automatic Thoughts

It is important to distinguish intrusive thoughts from NATs, as NATs are well known to be a common and key characteristic of depression (Beck, 1963). Beck (1967; 1976) first observed that people with depression experience a stream of negative thought that runs concurrently with more conscious focussed thought, which appear to intrude rapidly with little effort. Beck noted that these thoughts tended to be highly self-focussed and relate to negative thoughts about the self, their current world or future. Despite their similarities, especially in the experience of depression, NATs and intrusive thoughts can be clearly differentiated in terms of content and process characteristics (Salkovskis, 1985). He argued that intrusive thoughts are more likely to be perceived as irrational and ego-dystonic, whereas

NATs are more rational and ego-systonic (Clark & Purdon, 1993). Additionally, intrusive thoughts are more intrusive, disruptive and more easily accessed, whereas NATs are more likely to run parallel to conscious awareness, are harder to access and are less disruptive to task performance (Clark, 2005).

1.4 Rumination

Ruminative negative thinking is another type of cognition that has been linked to negative mood states, in particular depression. Nolen-Hoeksema's (1991) response styles theory conceptualised ruminative thinking as a key process which prolongs and intensifies the depressive episode. According to this theory, rumination involves ''*repetitively focusing on the fact that one is depressed; on one's symptoms of depression; and on the causes, meanings, and consequences of depressive symptoms''* (Nolen-Hoeksema, 1991, p. 569). Another key feature of rumination is that it tends to be past oriented, which distinguishes it from worry which tends to be future oriented (Papergeorgiou & Wells, 2003).

1.5 Intrusive Thoughts vs Rumination

Although there are no studies directly comparing rumination and intrusive thoughts, it is important that intrusive thoughts and rumination are distinguishable from each other, especially due to the high incidence of both in depressed states (Brewin, Christodoulides & Hutchinson, 1996). Ruminative thinking is hypothesised to involve chains of repetitive, recyclic, negative and self-focussed thinking that can be cued by an eternal event, but more often is triggered by a prior thought (Papageorgiuo & Wells, 2004), whereas intrusive thoughts are brief, sudden and unexpected thoughts or images, of relatively short duration, often ego-dystonic and undirected by the person experiencing them (Clark, 2005). A study by Wahl et al., (2011) exploring the experience of both in a depressed group found that intrusive

thoughts occur with greater visual quality, were rated as more irrational and were associated with a higher urge to act, whereas ruminative thoughts were more past oriented and more realistic. Interestingly, they also found that participants could clearly distinguish between the two types of thought. However, they may be linked in some ways; it is hypothesised that the repeated occurrence of an intrusive thought or image could trigger an episode of rumination (Clark, 2005). Research in post-traumatic stress disorder (PTSD) found that rumination is used both as a strategy to cope with intrusive memories, but that it also triggers such memories (Michael, Halligan, Clark & Ehlers, 2007).

1.6 The Present Studies

Due to the relative lack of knowledge and research base exploring the experience of intrusive thoughts, the following study was designed to assess the experience of intrusive thoughts in young people with depression. Young people were also asked about how they manage these thoughts (i.e. rumination, distraction etc.) and how helpful they find these techniques. Thus, the empirical study will address (in part) the relationship between these phenomena. The meta-analysis was conducted to investigate to what extent rumination is related to depression in young people with depression compared to non-clinical youth. The findings from these studies could contribute to the body of knowledge informing CBT practice with young people by highlighting possible new targets for therapeutic intervention.

Part 1 – Meta-analysis

Chapter 1: Meta-analysis

Rumination in young people with depression in comparison to non-clinical controls: a meta-analysis.

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This review has been written in accordance with the Journal of Affective Disorders (Appendix A).

Word count: 6952 (excluding abstract and references)

Abstract

Objective: Investigate to what extent rumination is related to depression in young people with depression compared to non-clinical youth.

Method: Systematic literature search and meta-analysis of cross-sectional studies exploring levels of rumination in young people with depression and non-clinical young people.

Results: Five papers met inclusion criteria (*N*=343). Rumination was found to be more strongly related to childhood depression compared to healthy children, showing a statistically significant pooled standardised mean difference of 1.521 (95% CI 0.958 – 2.084). The proportion of females in each study was not found to be related to effect size.

Conclusions: Childhood depression is associated with a significantly higher rate of rumination when compared to non-clinical young people. This is consistent with models proposing that rumination has a role to play in maintaining depression in children and adolescents.

Keywords: depression, rumination, meta-analysis, children, adolescents, young people

Introduction

Depression is common among young people. The prevalence of depression has been estimated to be approximately 2% in children aged between 6–12 years (Costello et al., 2003), and 4–5% in mid to late adolescence (Costello et al., 2006). The average duration of a depressive episode in children and adolescents is believed to be 9 months (Philip, 2002). However, it has been found that up to 70% of young people whose depression remits develop subsequent depressive episodes within the following 5 years (Philip, 2002). Compared with diagnoses of depression in adults, diagnoses of depression in children and adolescents are more often missed (Thapar et al., 2012) and have more frequent suicidal thoughts and attempts (Dodig-Curković et al., 2010). These numbers indicate that depression in youth is prevalent and requires efficacious and timely treatment.

Rumination

Rumination, defined as "persistent, recyclic, depressive thinking", is a common response to negative moods (Rippere, 1977) and is a salient feature of dysphoria and major depressive disorder (Papageorgiou and Wells, 2004). Examples of ruminative thoughts may include: "why can't I do anything right?", "why am I such a loser" and "why am I so lazy?". They can be distinguished from Negative Automatic Thoughts (NATs) where NATS are thought to be brief appraisals, whereas rumination is characterised by longer, repetitive and negative self-focussed thinking, which may occur in response to a NAT (Papageorgiou and Wells, 2001). Research has found that ruminative thinking predicts depression over and above its shared variance with other types of negative cognitions (Nolen-Hoeksema et al., 1994; Spasojevic and Alloy, 2001).

The response styles theory (RST)

Nolen-Hoeksema (1991) developed the Response Styles theory of depression, which conceptualizes that rumination involves "*repetitively focusing on the fact that one is depressed; on one's symptoms of depression; and on the causes, meanings and consequences of depressive symptoms*" (Nolen-Hoeksema, 1991, p. 569). There is evidence that rumination maintains and exacerbates a depressive mood in adults (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 2008). In a large-scale longitudinal study of adults, rumination was found to predict the onset of depressive episodes and depressive symptoms in non-depressed and currently depressed individuals (Michl et al., 2013; Nolen-Hoeksema, 2000; Spasojevic and Alloy, 2001). Furthermore, manipulation of rumination has been found to exacerbate existing negative affect and negative thoughts (Nolen-Hoeksema et al., 2008; Watkins, 2008). In addition, rumination is associated with slower treatment response and poorer rates of recovery when using antidepressant medication and CBT, indicating that it may interfere with therapeutic response (Jones et al., 2008; Schmaling et al., 2002).

Another prediction of the Response Style Theory relates to gender differences in the use of rumination; Nolen-Hoeksema (1987) argued that one reason why women have higher levels of depression than men is because women are more likely to ruminate when in a negative mood. This prediction has been evidenced by a number of studies in adult populations (Butler and Nolen-Hoeksema, 1994; Nolen-Hoeksema et al., 1999; Nolen-Hoeksema and Jackson, 2001; Sethi and Nolen-Hoeksema, 1997).

Efficacy of depression treatments

There is encouraging data from adult studies that suggests therapies which focus on rumination (rumination-focused cognitive behavior therapy [CBT] and mindfulness-based CBT) have large between-treatment group effect sizes with changes in rumination repeatedly

mediating symptom improvements (Watkins, 2015). However, these studies have relatively small sample sizes and data are only available in adult populations.

The most well-studied psychological intervention for young people with depression is CBT. However, a meta-analysis found that adding CBT to antidepressants in adolescents with major depression was beneficial for reducing impairment in the short term, but did not alleviate depressive symptoms, suicidality or gains in overall improvement (Dubicka et al., 2010). Two more meta-analyses of CBT in children and adolescents found that CBT was an effective treatment, however neither showed an effect size greater than 0.3, which is the lower limit for a moderately effective treatment (Klein et al., 2007; Thapar et al., 2012; Weisz et al., 2006). Moreover, a large randomized controlled trial of adolescents with moderate to severe depression found that there was a similar response rate in the CBT and placebo groups (43% vs 35% respectively; March et al., 2004). Overall the data indicates that CBT might be effective in adolescents with milder depression, but is not consistently more effective than waiting list treatments for young people with moderate or severe depression (Thapar et al., 2012). This indicates a pressing need for better treatments for children and adolescents with major depressive disorder.

Rumination in adolescent populations

A meta-analysis of the influence of rumination on depressive symptoms in non-clinical youth found that rumination was significantly associated with concurrent levels of depression, as well as the level of depressive symptoms over time (Rood et al., 2009) Furthermore, they found that when controlling for baseline levels of depression, rumination made a significant contribution to changes in depressive symptoms. Rood et al. also found significant gender differences in rumination, which were stable for adolescents, concluding that the finding that girls report more depressive symptoms than boys might be explained by

their stronger tendency to ruminate. Rood et al. conclude that the findings of their review provide good to moderate support for the predictions of the RST regarding the role of rumination in depression in youth.

The present review

There is an abundance of research showing that rumination is a strong candidate mechanism for intervention due to its robust implications in the onset and maintenance of depression, and there is positive data from adult studies using therapies which focus on rumination. However, the majority of studies examining the role of rumination in depression have been conducted in adult populations. A meta-analysis by Rood et al. (2009) found that rumination is significantly associated with symptoms of depression in non-clinical adolescents. This systematic review and meta-analysis aims to bring together the research investigating rumination in adolescents with clinical depression. The studies will be reviewed and the effect sizes from individual studies will be pooled into an overall weighted effect size. The purpose of this review was to answer the following questions:

i) To what extent is rumination related to depression in young people with major depressive disorder, when compared to young people without depression?

ii) To what extent do boys and girls with major depressive disorder differ with respect to levels of rumination?

Methodology

Aim

The aim of the meta-analysis is to investigate to what extent rumination is related to depression in young people. A secondary aim of the meta-analysis is to investigate whether boys and girls differ with respect to levels of rumination.

Materials and methods

This review was conducted according to the methods recommended by the Cochrane Collaboration Guidelines (Higgins and Green, 2011). The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA; Moher et al., 2009) were used to document the processes and results.

Information sources and search strategy

Studies were identified searching the electronic databases MEDLINE, Embase, PsycINFO, CINAHL and PsycARTICLES. The combined search strategy of free text terms were used as headings for the topics of rumination, depression and children, combined as following: depress* AND ruminat* AND (child* OR youth OR teen* OR young people). The strategy was first developed in MEDLINE and then adapted for use in the other databases. Studies published in English from 1996 through to July 1st, 2016 were included. In addition, further studies were retrieved from reference listings of relevant articles.

Inclusion criteria

Studies meeting the following criteria were included:

1. Children and adolescents aged up to 18 years
2. Between groups cross sectional design
3. Diagnosis of depression as confirmed either by diagnostic interview or clinically referred young people
4. Healthy control group comparison
5. Peer reviewed publication
6. Available in English

Exclusion Criteria

Studies were excluded where symptoms of depression were assessed through questionnaire; participants were deemed to be at "high risk" of depression or there was experimental manipulation prior to measurement of rumination.

Outcome

Primary outcomes were i) effect sizes calculated showing the difference in levels of rumination between clinically depressed young people and control groups and ii) the difference in levels of rumination between males and females. Neuroimaging papers that included levels of rumination as a secondary aim were also included.

Study selection and data extraction

A first screening was performed based on title and abstract while full texts were retrieved for the second screening. The second screening was independently reviewed for eligibility by two authors (AK, AP). Data were extracted by one researcher using an ad-hoc developed data extraction spreadsheet.

Meta-analysis

To allow analysis of effect sizes across different scales, the standardised mean difference (SMD) between the depressed group and the healthy control group was calculated for all scales. Due to anticipated heterogeneity, a random effects meta-analysis was employed. Mean scores and standard deviation on validated depression measures were used. The SMD expresses the size of the effect for the depressed group in comparison to the healthy control group, which allows different scales to be pooled into one outcome measure. OpenMeta[Analyst] (Wallace et al., 2012) was used to pool data. Cohen's *d* (Cohen, 1988)

effect sizes were transformed into Hedge's g to adjust for possible bias resulting from small samples (Borenstein et al., 2011). Data were interpreted according to the convention: small (0.2), medium (0.5) and large (0.8) (Cohen, 1992).

Exploration of heterogeneity. The I^2 statistic was used to explore statistical heterogeneity. This statistic expressed the percentage of variability in an effect size that can be attributed to study heterogeneity rather than to change (Higgins and Thompson, 2002). Low heterogeneity is expressed by I^2 of 25%, moderate of 50% and high of 75% (Higgins et al., 2003). Its associated test of significance provides evidence of heterogeneity of intervention effects (variation in effect estimates beyond chance).

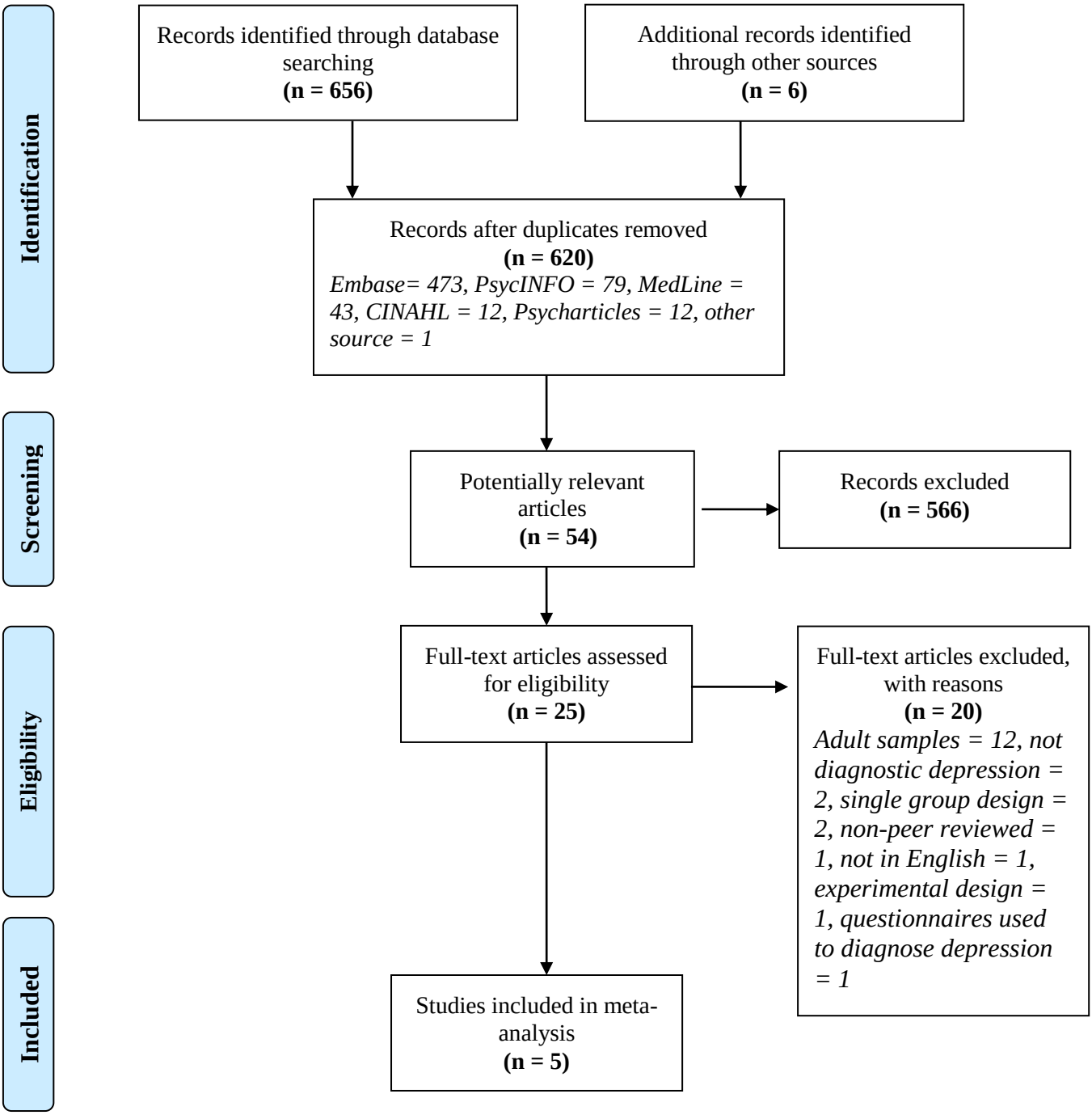
Results

Outcome of search process

Initial electronic searches yielded 656 articles and review of selected journals and the relevant authors on the topic added another six articles. After removing duplicates, 620 articles remained. Initial review of article titles and abstracts that did not mention rumination or depression excluded 566 articles. Of the 54 articles which remained, a further 29 were excluded as further review of the abstracts indicated that the population were not aged under 18 years, that the article did not measure/assess rumination or that the review of the abstract indicated the article was a book chapter or review. Twenty-five articles remained for full text review. Full text review lead to 20 further exclusions; 12 as they assessed adult populations, two as there was not a formal diagnosis of depression, two featured a single group design, one was not peer reviewed, one was not in English, one used questionnaire measures to diagnose depression and lastly, one featured an experimental design. Therefore, five articles remained for review. See Figure 1 for PRISMA diagram.

Figure 1

PRISMA flow chart of search strategy



Quality Assessment

The quality criteria checklist adapted from Guyatt et al. (1993) were applied to each of the studies. This checklist was used as it is a brief measure designed for use with medical cross-sectional studies. The total quality score that studies could receive was 11. The scores of the included studies on each quality checklist sub-scale and total score are described in Table 1.

Given the heterogeneous nature of the five studies, the quality ratings give a guide to the methodological strength of the studies but do not allow a comparative measure.

The results suggest that Schepman et al. (2014) and Stewart et al. (2013) studies provide the strongest methodological criteria, but overall all studies report relatively high quality criteria (Connolly et al., 2013; Waller et al., 2014; Wilkinson and Goodyer, 2006). Studies all showed high quality regarding the research question, methodology, accuracy of measures used, data analysis and presentation of results, however 60% of the studies scored poorly for applicability of results (Connolly et al., 2013; Waller et al., 2014; Wilkinson and Goodyer, 2006). Connolly et al. scored the poorest in terms of methodological quality, however the Connolly et al. study was primarily a neuroimaging study therefore the aims of the study were fundamentally different from the rest of the included studies.

All of the studies were rated by a second independent rater, producing exact agreement on 80% of the ratings. On the ratings where there were discrepancies between raters, 85% of these were due to differences in ratings between ‘can’t tell’ and ‘no’, however both of these outcome receive a quantities score of 0. Interestingly, the studies that revealed the most variation in ratings were the Connolly et al. (2013) and Wilkinson and Goodyer (2006) studies which reflected the poorest quality rating, where three out of 11 ratings were conflicting. All criteria with different ratings were reviewed and amended.

Table 1

Ratings of quality for included studies

Study	Research Question	Method-ology	Subject recruitment	Accurate measures	Data collection	Sample size	Results	Data analysis	Reported findings	Applicability of results	Value of research	Total
Connolly et al. (2013)	1	1	0*	1	1	0*	0	1	1	0	1	7/11
Schepman et al. (2014)	1	1	1	1	1	1	1	1	1	1	1	11/11
Stewart et al. (2013)	1	1	1	1	1	1	1	1	1	1	1	11/11
Waller et al. (2014)	1	1	1	1	1	1	1	1	1	0	1	10/11
Wilkinson and Goodyer (2006)	1	1	1	1	1	0	1	1	1	0	0	8/11

Note. 0* was awarded for the option ‘can’t tell’, whereas 0 was awarded for ‘no’.

Study characteristics. The main characteristics of the five included studies which collectively included 343 participants (159 with depression and 184 non-clinical) are detailed in Table 2. Four studies (Connolly et al., 2013; Schepman, et al., 2014; Stewart et al., 2013; Wilkinson and Goodyer, 2006;) investigated rumination as a lone behaviour, whereas Waller et al. (2014) investigated co-rumination, whereby a child discusses their rumination with another person. This study was included as it still included a non-experimentally manipulated measure of rumination.

Table 2

Study characteristics for included studies

Study	Participant characteristics Average age (% female)	Country of origin	N, clinical group	N, control group	Measure of depression	Measure of rumination
Connolly et al. (2013)	16 (62)	USA	30	45	K-SADS	Response Style Questionnaire
Schepman et al. (2014)	15 (63)	UK	29	37	Psychiatrists diagnosis using ICD-10	Response Style Questionnaire
Stewart et al. (2013)	15 (73)	Canada	31	33	K-SADS	Response Style Questionnaire
Waller et al. (2014)	14 (72)	USA	29	31	K-SADS	Co-rumination Questionnaire
Wilkinson and Goodyer (2006)	15 (73)	UK	40	38	K-SADS	Responses to Depression Questionnaire

Note. K-SADS = Kiddie – Schedule for Affective Disorders and Schizophrenia – Present and Lifetime Version (K-SADS-PL; Kaufman et al., 1996)

Depression. Table 2 shows shows that the majority of the studies used the Kiddie – Schedule for Affective Disorders and Schizophrenia – Present and Lifetime Version (K-SADS-PL; Kaufman et al., 1996) to assess childhood depression (Connolly et al., 2013; Stewart et al., 2013; Waller et al., 2014; Wilkinson and Goodyer, 2006). The K-SADS-PL is a semi-structured interview which provides DSM-IV diagnoses with proven reliability (Kaufman et al., 1996). Schepman et al. (2014) used psychiatric assessments based on the ICD-10 criteria. As this method of case identification does not have the benefit of psychiatric data as semi-structured interviews do, Schepman et al. collected self-completed rating scales to confirm validity of group membership and to assess for confounders.

Rumination. Three studies (Connolly et al., 2013; Schepman et al., 2014; Stewart et al., 2013) used the Children's Response Styles Questionnaire (Abela et al., 2004) to measure rumination. The Children's Response Styles Questionnaire is based on the Response Styles Questionnaire (Nolen-Hoeksema and Morrow, 1991). It has a rumination subscale which includes 13 items describing ruminative responses (e.g. "when I am sad, I think: 'I am ruining everything'"). Items are rated on a 4-point scale from 1 (almost never) to 4 (almost always). The scale has been found to have good internal consistency (alpha coefficient 0.93; Schepman et al., 2014).

Wilkinson and Goodyer (2003) used the Responses to Depression Questionnaire (Nolen-Hoeksema and Morrow, 1991) rumination subscale, which is a 39-item measure asking participants what they think, do or feel when they feel low in mood; subscales indicate degree of rumination in response to low mood. The questionnaire has been found to have high internal consistency, discriminant validity and stability (Nolen-Hoeksema and Morrow, 1991) Waller et al. (2014) assessed co-rumination, a behaviour characterised by "frequently discussing problems, discussing the same problem repeatedly, mutual encouragement of

discussing problems, speculating about problems, and focusing on negative feelings" (Rose, 2002), using the Co-Rumination Questionnaire (CRQ; Rose, 2002). The CRQ is a 27-item measure which measures the degree to which individuals engage in co-rumination with friendships. Questions were designed to assess extreme forms of self-disclosure within peers, specifically for negative events. An example item is, "If one of us has a problem, we will spend our time together talking about it, no matter what else we could do instead". Young people indicate the degree to which each item applies to them on a five-point scale (1= not at all true; 5 = really true). The mean of all 27 items is used as a measure of co-rumination. The CRQ has reasonably high internal validity (alpha coefficient 0.96; Davidson et al., 2014).

Sampling and methodology. The majority of studies looked at depression and rumination as their primary aim (Schepman et al., 2014; Waller et al., 2014; Wilkinson and Goodyer, 2006), excluding the study by Connolly et al. (2013) which was primarily a neuroimaging study and Stewart et al. (2013) which focussed on cortisol recovery. Two studies used participants who were enrolled in another study (Stewart et al., 2013; Waller et al., 2014). All studies carried out the research in one country (Connolly et al., 2013; Schepman et al., 2014; Stewart et al., 2013; Waller et al, 2014; Wilkinson and Goodyer, 2006). Three studies recruited their clinical group from local Child and Adolescent Mental Health Teams (Schepman et al., 2014; Stewart et al., 2013; Wilkinson and Goodyer, 2006), whereas two studies did not cite how they recruited their participants (Connolly et al., 2013; Waller et al., 2014). All studies noted that they either used matched controls (Connolly et al., 2013; Schepman et al., 2014) or that their groups did not significantly differ in regards to demographics (Stewart et al., 2013; Waller et al, 2014; Wilkinson and Goodyer, 2006).

Gender. All studies had a larger percentage of female participants, with the proportion ranging from 62% to 71% of the study population being female (Connolly et al.,

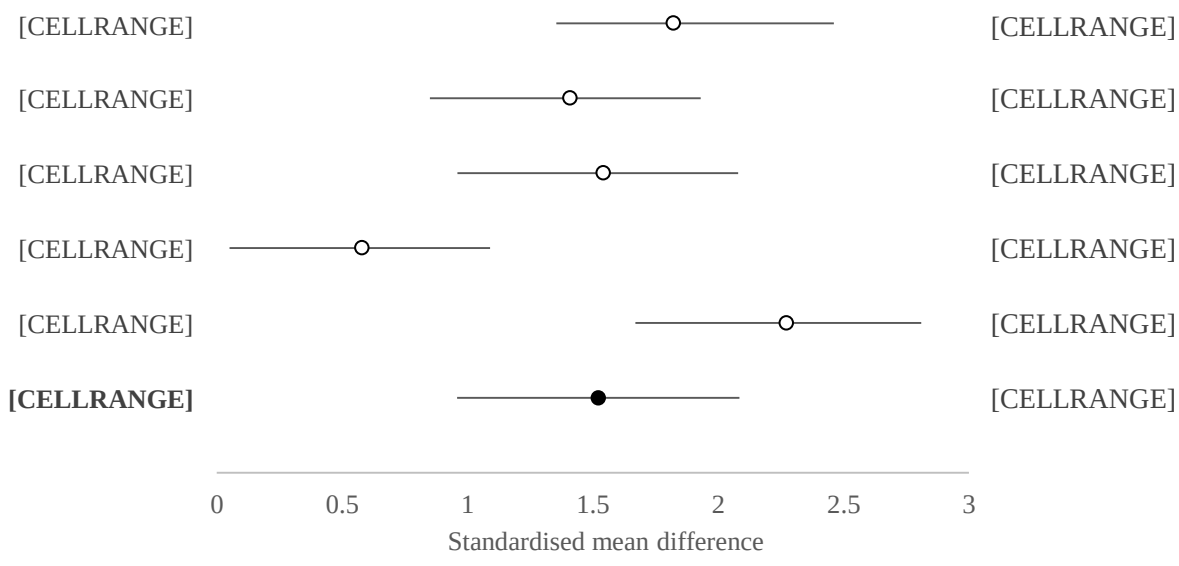
2013; Schepman et al., 2014; Stewart et al., 2013, Waller et al., 2014; Wilkinson and Goodyer, 2006). This may be indicative of the robust finding that depression is more prevalent in female adolescents than male, at a ratio of approximately 2:1 (Hyde et al., 2008). Studies did not report findings by gender, meaning it was not possible to derive effect sizes separately for males and females.

Rumination in children with depression compared with healthy children

Data were available for five studies. Figure 2 shows a large effect size showing higher levels of rumination in the depressed group compared to the healthy control group (pooled SMD = 1.521, 95% CI 0.958 – 2.084). There was significant heterogeneity (χ^2 = 81.16, df = 4, p<0.001), with the I^2 statistic indicating that between study heterogeneity accounted for 81% of the variance in the effect size.

Figure 2

Forest plot showing effect sizes of rumination for depressed children compared to healthy children



Sensitivity analyses

Co-rumination. As discussed above, Waller et al. (2014) investigated co-rumination amongst depressed young people and their peers. The analysis was re-run excluding data from Waller et al. to investigate the effect of rumination as a lone behaviour. The results show a large effect size showing higher levels of rumination in the depressed group compared to the healthy control group (pooled SMD = 1.761, 95% CI 1.383 – 2.138). There was non-significant heterogeneity (χ^2 = 46.16, df = 3, p=0.134), with the I^2 statistic indicating that between study heterogeneity accounted for 46% of the variance in the effect size.

Depression as diagnosed by KSADS vs other. All studies included except for Schepman et al. (2014) used the K-SADS to diagnose depression. The analysis was re-run excluding data from Schepman et al. to investigate whether the assessment used to diagnose depression affects the results. The results showed a large effect size (pooled SMD = 1.56, 95% CI 0.83 – 2.281). There was significant heterogeneity (χ^2 = 85.75, df = 3, p=<0.001), with the I^2 statistic indicating that between study heterogeneity accounted for 86% of the variance in the effect size.

Gender effects of rumination in children with depression compared to healthy children. It was not possible to calculate effect sizes for males and females separately. Meta-regression was therefore used to investigate whether the proportion of females investigated in the studies changes the results of the analysis. No effect of gender was found (regression coefficient= -0.023, 95% CI -0.097 to 0.051, p = 0.544), suggesting that proportion of females does not significantly change the results.

Publication bias. On the assumption that studies that are published are more likely to report statistically significant findings, this could lead to an overestimation of effect sizes (Lipsey and Wilson, 1993) and thus an overestimation of the pooled effect size found by this review. The fail-safe N calculated (Orwin, 1983) was found to be 51.42, which estimates that an additional 51 hypothetical studies would be needed to overturn the obtained mean effect size to an effect size of 0.2 (as recommended by Cohen, 1988). Potential publication bias was also tested with the visual inspection of a funnel plot (Higgins and Green, 2011; see supplementary material). The distribution of the funnel plot appears relatively symmetrical, suggesting there is no evidence of publication bias.

Discussion

Summary of main findings

This review examined 1) the extent to which rumination is related to depression in young people; and 2) the extent to which boys and girls differ with respect to levels of rumination. For this purpose, cross-sectional studies were identified in the literature and individual effect sizes were combined to compute an overall effect size weighted by sample size. This study found a large effect (SMD = 1.521), indicating that rumination is significantly associated with a clinical diagnosis of depression in young people. To date, there has not been a meta-analysis investigating levels of rumination in clinically depressed children compared with healthy control children. However, a previous meta-analysis by Rood et al. (2009) examining rumination and distraction in depressive symptomology in non-clinical youth found that rumination was significantly associated with concurrent levels of depression. They found that the pooled effect size showed that the strength of the association between rumination and depression was moderate to high (r = 0.44, 95% CI = 0.42 to 0.47). A SMD of 1.521 is approximate to an *r* of 0.609, allowing some comparisons between the

two reviews. Both report a large effect size, however a larger effect is seen when comparing clinically depressed young people to controls, as opposed to symptoms of depression in non-clinical groups compared to controls (Rood et al., 2009).

Although the inclusion and exclusion criteria used for the meta-analysis were designed to reduce heterogeneity and increase ability to compare papers, heterogeneity between studies was still found to be high. As the studies included all used similar patient groups, outcome measures and designs, it is not clear why this is. Heterogeneity was observed to drop from 81% to 46% following the exclusion of the Waller et al. (2014) paper exploring co-rumination. This could suggest that the Waller et al. study contributes to some of the heterogeneity as observed in the overall review. This may be to be expected as the focus of the paper is on co-rumination and therefore the methodology and participants may be more diverse than those used in the remaining review papers which focus on rumination as a lone behavior (Connelly et al., 2004; Schepman et al., 2014; Stewart et al., 2013; Wilkinson and Goodyer, 2003). When the Waller et al. paper is removed from the review, the pooled SMD is observed to be 1.761 which is still a considerably large effect size. Additionally, subsequent analysis exploring the effect of diagnosis of depression using K-SADS vs other found the pooled SMD to be 1.56, further suggesting that the main finding is fairly robust.

Gender Differences

A number of studies (Mezulis et al., 2011; Nolen-Hoeksema et al., 1999) have found that rumination mediates the relationship between gender and depressive symptoms, which suggests that the finding that girls report more symptoms of depression than boys might be due to their tendency to ruminate (Grant et al., 2004; Jose and Brown, 2008). This is inconsistent with the findings of this review, which found that the proportion of females included in the study does not change the results of the review. However, this finding must be interpreted with care. It may indicate that boys and girls do not differ with respect to their

levels of rumination. It is also possible that there were stronger effects for one sex than the other but that this effect is not related to the proportion of females in the study. Unfortunately, studies did not report separate findings for females and males to allow us to explore gender effects more conclusively.

However, both Grant et al. (2004) and Jose and Brown (2008) used non-clinical adolescent samples. This review investigated participants with a clinical diagnosis of depression and found that there the proportion of female participants does not affect the outcome of the analysis. This finding may suggest that rumination mediates the relationship between gender and symptoms of depression in non-clinical groups, however when the depression is a diagnosed major depressive disorder, this mediator is not present. Due to the absence of effect sizes for boys and girls in the present review, it was not possible to establish causality between rumination and major depressive disorder, but this is an interesting question to be answered by future research.

Limitations and risk of bias

Publication bias. Alongside the finding of the fail-safe N concluding that 51 hypothetical studies would be required to overturn the mean effect size to 0.2. The symmetry of the funnel plot suggests there is no evidence of publication bias. However, with only five studies as is being used by this review, the evidence gained from the funnel plot will be limited.

Heterogeneity. The 95% confidence interval is relatively wide (0.958 - 2.084) and the I^2 statistic (81.16) is high, suggesting there was some heterogeneity amongst the studies. All five studies used one of two measures of rumination, and had relatively similar numbers of participants with respect to group sample size and age, but there were some discrepancies in methodology. While three studies looked at depression and rumination as their primary focus

(Schepman et al., 2014; Waller et al., 2014; Wilkinson and Goodyer, 2006), two studies explored rumination as a secondary aim following MRI imaging (Connolly et al., 2013) and cortisol recovery (Stewart et al., 2013). This discrepancy between study methodology may have accounted for some of the variation in outcomes between studies. It is also possible that the heterogeneity is biased due to having a small number of included studies (von Hippel, 2015). Despite the uncertainty over this estimate of the difference between depressed and non-depressed youth with respect to rumination, this study suggests that there is, at a minimum, a large effect.

Clinical implications

The findings from the present review may have a number of clinical implications. A meta-analysis by Nel (2014) reviewing the effects of CBT for depression in young people found that the empirical evidence for the effectiveness of individual CBT for young people with depression is weak and inconclusive, and for children under the age of nine it is non-existent. This suggests that there is a need to improve treatments for children and adolescents with depression. The findings of this study may suggest that rumination could be a potential target for therapies. Rumination-focused CBT is an approach grounded in standard CBT for depression with the addition of several novel elements that address rumination (Watkins et al., 2007). This approach incorporates Behavioural Activation and includes rumination, where rumination is conceptualised as a form of avoidance which was developed through negative reinforcement. Using functional analysis, clients are guided to formulate the function of their rumination and make plans to reduce or replace it. A randomised controlled trial (RCT) in an adult population found that treatment as usual plus rumination-focused CBT significantly reduced rumination compared to treatment as usual alone (Watkins et al., 2011). However, although this data must be interpreted with caution due to small sample sizes and

its lack of direct comparison to active treatments such as CBT, it is still promising in reducing rumination in adults with depression and it may be worth testing this technique in young people who ruminate.

Another treatment hypothesized to reduce rumination is mindfulness-based CBT. This is a psychosocial relapse prevention programme which incorporates mindfulness techniques alongside CBT principles. Mindfulness-based CBT has been found to reduce rumination in trials for patients with a history of recurrent depression relative to waiting list controls (Geschwind et al., 2011) and treatment-as-usual (van Alderaan et al., 2014). Approaches which work on relapse prevention could be invaluable for young people with depression, where relapse rates have been found to be as high as 70% in this population (Philips, 2002). The reduction of depressive symptoms was found to be mediated by participants' decreased levels of rumination (van Alderaan et al., 2014). A study exploring the outcome of mindfulness-based CBT in adolescents with depression found that mindfulness-based CBT is feasible and is associated with reduction in symptoms and an increase in measures of quality of life (Ames et al., 2014). The conclusions drawn by Ames et al. indicates that mindfulness-based techniques are feasible and may be helpful for young people with depression who ruminate.

Recent studies exploring the effects of behavioural activation as a primary intervention for depression have found that behavioural activation produced higher rates of remission in adults with depression than cognitive therapy or antidepressants (Dimidjian et al., 2006). Furthermore, behavioural activation has recently been found to be more cost effective than CBT for the treatment of adults with depression as they are able to be administered by lower banded mental health workers, when compared to the CBT administered by more experienced therapists (Richards et al., 2016). Given the concerns about the effectiveness of cognitive therapy in young people (Nel, 2014), and the cost

effectiveness of using more behavioural techniques, it may be of interest to test behavioural activation for children and adolescents with depression who ruminate.

It is noteworthy that all of the studies included in the review used reliable measures for assessing rumination in children. These questionnaires are widely available and so may prove to be a useful tool in every day clinical practice to assess for presence of ruminative thoughts and aid with formulation and clinical judgement. Integrating ruminative thoughts into formulation driven therapeutic interventions early on in treatment will give clinicians the option of focussing on reducing rumination.

Conclusions

The findings of this meta-analytic review provide good support for the hypothesis that rumination is significantly associated with clinical depression in children and adolescents. Regarding gender differences in levels of rumination, the only conclusion which can be drawn within the parameters of this review is that the proportion of females included in the study does not change the results of the review. Further research could be done to explore the gender difference in adolescence with depression with respect to their levels of rumination.

Recent studies have found that interventions that specifically target rumination are effective at reducing rumination in adults with depression (Watkins et al., 2011), however to date there has not been research conducted to explore such techniques in adolescent populations. Reviews and RCTs of psychological interventions in adolescents with depression have found that CBT might be effective for young people with mild depression, but is not consistently effective for more severe depression (Thapar et al., 2012) which indicates that better treatments are needed for young people with depression. Further research could be done to replicate the rumination-focussed techniques as used in the adult studies

(Geschwind et al., 2011; van Alderaan et al., 2014; Watkins et al., 2007) in child and adolescent populations.

References

References marked with an asterisk indicate studies included in the meta-analysis.

Abela, J. R. Z., Vanderbilt, E., & Rochon, A. (2004). A test of the integration of the response styles and social support theories of depression in third and seventh grade children. *Journal of Social and Clinical Psychology, 23,* 653–674.

Ames, C. S., Richardson, J., Payne, S., Smith, P., & Leigh, E. (2014). Mindfulness-based cognitive therapy for depression in adolescents. *Child and Adolescent Mental Health*, *19*(1), 74-78.

Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2011). *Introduction to Meta-Analysis*. Hoboken, NJ: Wiley

Butler, L. D., & Nolen-Hoeksema, S. (1994). Gender differences in responses to depressed mood in a college sample. *Sex Roles, 30,* 331–46.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.).* New York: Academic Press.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

*Connolly, C. G., Wu, J., Ho, T. C., Hoeft, F., Wolkowitz, O., Eisendrath, S., ... & Tapert, S. F. (2013). Resting-state functional connectivity of subgenual anterior cingulate cortex in depressed adolescents. *Biological Psychiatry*, *74*(12), 898-907.

Costello, E. J., Erkanli, A., & Angold, A. (2006). Is there an epidemic of child or adolescent depression? *Journal of Child Psychology & Psychiatry, 47,* 1263–71.

Costello, E. J., Mustillo, S., Erkanli, A., et al (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60,* 837–44.

Davidson, C. L., Grant, M. G., Byrd-Crave, J., Mills, A. C., Judah, M. R., & Lechner, W. V. (2014). Psychometric properties of the Co-Rumination Questionnaire. Personality and Individual Differences, 70, 171-175.

Dimidjian, S., Hollon, S. D., Dobson, K. S., Schmaling, K. B., Kohlenberg, R. J., Addis, M. E., ... & Atkins, D. C. (2006). Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the acute treatment of adults with major depression. *Journal of Consulting and Clinical Psychology*, *74*(4), 658-670.

Dodig-Curkovic, K., Curkovic, M., Radic, J., Degmecic, D., & Filakovic, P. (2010). Suicidal Behavior and Suicide among Children and Adolescents-Risk Factors and Epidemiological Characteristics. *Collegium Antropologicum, 63,* 771-777.

Dubicka, B., Elvins, R., Roberts, C., Chick, G., Wilkinson, P. & Goodyer, I. M. (2010). Combined treatment with cognitive-behaviour therapy in adolescent depression: meta-analysis. *The British Journal of Psychiatry, 197,* 433-440.

Geschwind, N., Peeters, F., Drukker, M., van Os, J., & Wichers, M. (2011).: Mindfulness training increases momentary positive emotions and reward experience in adults vulnerable to depression: a randomized controlled trial. *Journal of Consulting and Clinical Psychology, 79,* 618-628.

Grant, K., Lyons, A., Finkelstein, J. A., Conway, K., Reynolds, L . . . O'Koon, J. (2004). Gender differences in rates of depressive symptoms among low-income, urban, African American youth: A test of two mediational hypotheses. *Journal of Youth and Adolescence, 33,* 523-533.

Guyatt, G. H., Sackett, D. L., & Cook, D. J. (1993). Users' guides to the medical literature. II. How to use an article about therapy or prevention. *JAMA, 270.* Retrieved from https://reache.files.wordpress.com/2010/03/cross-sectional-appraisal-tool.pdf

Higgins, J. P., & Green, S. (2011). *Cochrane handbook for systematic reviews of interventions* (Vol. 4). John Wiley & Sons: New Jersey

Higgins, J., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine, 21*(11), 1539-1558.

Higgins, J., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *British Medical Journal, 327,* 557-560.

Hyde, J. S., Mezuzas, A. H., & Abrasion, L. Y. (2008). The ABCs of depression: Intergrating affective, biological and cognitive models to explain the emergence of the gender difference in depression. *Psychological Review, 115,* 291-313.

Jones, N. P., Siegle, G. J., & Thase, M. E. (2008) Effects of rumination and initial severity on remission to cognitive therapy for depression. *Cognitive Therapies Research, 32,* 591-604.

Jose, P., & Brown, I. (2008). When does the gender difference in rumination begin? Gender and age differences in the use of rumination by adolescents. *Behaviour Therapy, 37,* 269-280.

Kaufman, J., Birmaher, B., Brent, D., Rao, U., & Ryan, N. (1996). *The Schedule for Affective Disorders and Schizophrenia for School-Age Children*. Pittsburgh: University of Pittsburgh Medical Center

Klein, J. B., Jacobs, R. H., & Reinecke, M. A. (2007). Cognitive-behavioural therapy for adolescent depression: a meta-analyic investigation of changes in effect-size estimates. *Journal of the American Academy of Child and Adolescent Psychiatry, 46,* 1403-13.

Lipsey, M. W., & Wilson, D. B. (1993). The efficacy of psychological, educational and behavioural treatment: confirmation from meta-analysis. *American Psychologist, 48(2*), 1181.

March, J., Silva, S., Petrycki, S, et al. (2004). Fluoxetine, cognitive-behavioural therapy, and their combination for adolescents with depression: randomized controlled trial. *JAMA, 292*, 807-20.

Mezulis, A. H., Priess, H. A., & Hyde, J. S. (2011). Ruminationn mediates the relationship between infant temperament and adolescent depressive symptoms. *Depression Research and Treatment*, 487873. doi: http://dx.doi.org/10.1155/2011/487873

Michl, L, C., McLaughlin, K. M., Shephard, K., & Nolen-Hoeksema, S. (2013) Rumination as a mechanism linking stressful life events to symptoms of depression and anxiety: longitudinal evidence in early adolescents and adults. *Journal of Abnormal Psychology, 122*, 339-352.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G., (2009). *Preferred Reporting Items for Systematic Reviews and Meta-Analyses:* The PRISMA Statement. *PLoS Med, 6(7*): e1000097. doi:10.1371/journal.pmed1000097

Nel, P. W. (2014). The NICE guideline on the treatment of child and adolescent depression: a meta-review of the evidence for individual CBT. *European Journal of Psychotherapy and Counselling*, 16(3). doi: http://dx.doi.org/10.1080/13642537.2014.929595

Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin, 101(2),* 259−282.

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100(4),* 569−582.

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology, 109*, 504-511.

Nolen-Hoeksema, S., Larson, J., & Grayson, C. (1999). Explaining the gender difference in depressive symptoms. *Journal of Personality and Social Psychology, 77,* 1061–72.

Nolen-Hoeksema, S., & Jackson, B. (2001). Mediators of the gender difference in rumination. *Psychology of Women Quarterly, 25,* 37–47.

Nolen-Hoeksema, S., Parker, L. E., & Larson, J. (1994). Ruminative coping with depressed mood following loss. *Journal of Personality and Social Psychology, 67,* 92-104.

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3,* 400-424.

Orwin, R. G. (1983). A fail-safe N for effect size. *Journal of Educational Statistics, 8,* 157 – 159

Papageorgiou, C. & Wells, A. (2001). Metacognitive beliefs about rumination in recurrent major depression. *Cognitive and Behaviour Practice, 8,* 160-164.

Papageorgiou, C. & Wells, A. (2004). *Nature, Functions, and Beliefs about Depressive Rumination. In Depressive Rumination: Nature, Theory and Treatment*. John Wiley & Sons, Ltd: Chichester, England.

Philip, H. (2002). Depression in children may go unnoticed and untreated. *British Medical Journal, 325,* 229-230.

Richards, D. A., Ekers, D., McMillan, D., Taylor, R. S., Byford, S., Warren, F. C., . . . Finning, K. (2016). Cost and Outcome of Behavioural Activation versus Cognitive Behavioural Therapy for Depression (COBRA): a randomized, controlled, non-inferiority trial. *Lancet, 388,* 871-880.

Rippere, V. (1977). Common sense beliefs bout depression and anti-depressive behaviour: a study of social consensus. *Behaviour, Research and Therapy, 15,* 465-473.

Rood, L., Roelofs, J., Bogels, S. M., Nolen-Hoeksema, S., & Schouten, E. (2009). The influence of emotion-focussed rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review. *Clinical Psychology Review, 29,* 607-616.

Rose, A. J. (2002). Co-rumination in the friendship of girls and boys. *Child Development. 73,* 1830-1843.

*Schepman, K., Fombonne, E., Collishaw, S., & Taylor, E. (2014). Cognitive styles in depressed children with and without comorbid conduct disorder. *Journal of Adolescence, 37(5),* 622-631.

Schmaling, K. B., Dimidjian, S., Katon, W., & Sullivan, M. (2002) Response styles among patients with minor depression and dysthymia in primary care. *Journal of Abnormal Psychology, 111*, 350-356.

Sethi, S., & Nolen-Hoeksema, S. (1997). Gender differences in internal and external focusing among adolescents. *Sex Roles, 37,* 687–700.

Spasojevic, J., & Alloy, L. B. (2001). Rumination as a common mechanism relating depressive risk factors to depression, *Emotion, 1,* 25-37.

*Stewart, J. G., Mazurka, R., Bond, L., Wynne-Edwards, K. E., & Harkness, K. L. (2013). Rumination and impaired cortisol recovery following a social stressor in adolescent depression. *Journal of Abnormal Child Psychology*, *41*(7), 1015-1026.

Thapar, A., Collishaw, S., Pine, D. S., Thapar, A. K. (2012). Depression in adolescence. *Lancet, 379,* 1056-67.

Van Alderaan, J. R., Donders, A. R. T., Giommi, F., Spinhoven, P., Barendregt, P.H., & Speckens, A. E. M. (2014): The efficacy of mindfulness- based cognitive therapy in recurrent depressed patients with and without a current depressive episode: a randomized controlled trial. *Psychological Medicine, 42,* 989-1001.

Von Hippel, P. T. (2015). The heterogeneity statistic I^2 can be biased in small meta-analyses. *BMC Medical Research Methodology, 15,* 35. http://doi.org/10.1186/s12874-015-0024-z

Wallace, B. C., Dahabreh, I. J., Trikalinos, T. A., Lau, J., Trow, P., & Schmid, C. H. (2012). Closing the Gap between Methodologists and End-Users: R as a Computational Back-End. *Journal of Statistical Software*, *49*, 5.

*Waller, J. M., Silk, J. S., Stone, L. B., & Dahl, R. E. (2014). Co-rumination and co-problem solving in the daily lives of adolescents with major depressive disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, *53(8)*, 869-878.

Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychology Bulletin*, *134*, 163-206.

Watkins, E. R. (2015). Psychological Treatment of Depressive Rumination. *Current Opinion in Psychology, 4*, 32-36.

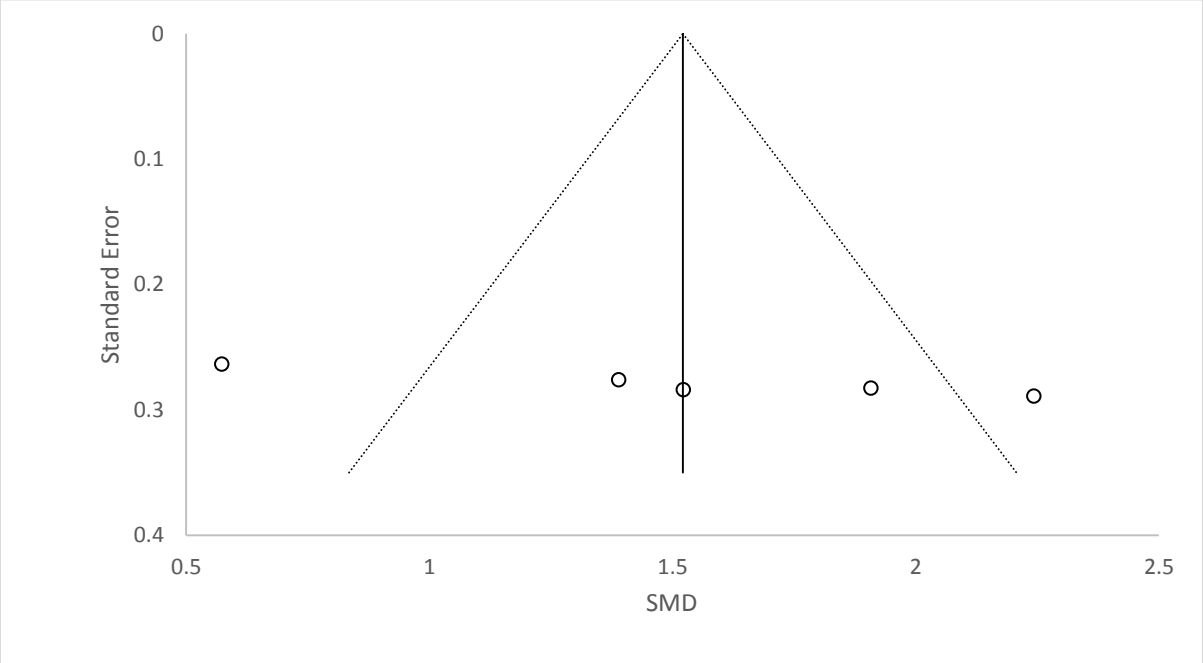
Watkins, E. R., Mullan, E., Wingrove, J., Rimes, K., Steiner, H., Bathurst, N., ... & Scott, J. (2011). Rumination-focused cognitive-behavioural therapy for residual depression: phase II randomised controlled trial. *The British Journal of Psychiatry*, *199*(4), 317-322.

Watkins, E., Scott, J., Wingrove, J., Rimes, K., Bathurst, N., Steiner, H., ... & Malliaris, Y. (2007). Rumination-focused cognitive behaviour therapy for residual depression: A case series. *Behaviour research and therapy*, *45*(9), 2144-2154.

Weisz, J. R., McCarty, C. A. & Valeri, S. M. (2006). Effects of psychotherapy for depression in children and adolescents: a meta-analysis. *Psychological Bulletin, 132*, 132-49.

*Wilkinson, P. O., & Goodyer, I. M. (2006). Attention difficulties and mood-related ruminative response style in adolescents with unipolar depression. *Journal of Child Psychology and Psychiatry*, *47*(12), 1284-1291.

Supplementary material: Funnel plot



Part 2: Empirical Research Study

Chapter 3: Extended Methodology

3.1 Overview

This chapter presents an extended outline of the methodology, including the design, the participants, ethical considerations, the measures used and an overview of the statistical analyses used in this study. The following section is minimally changed from my research proposal (Kralj, 2015).

The study was designed to provide information towards two theses, one looking at intrusive thoughts and the other at intrusive memories. The intrusive memories part of the study has been written up to form another thesis; please see Appendix B for full details.

3.2 Design

This study used a between groups design in order to explore the experience of intrusive thoughts in young people with PTSD and/or depression. Structured interviews investigating experience of intrusive thoughts and memories were administered over the telephone. Between-subject's analyses were carried out to investigate the experience between the two clinical groups and the control group.

3.2.1 Telephone interviewing. Interviewing participants over the telephone was chosen for a number of reasons. Firstly, researchers were mindful of physical space for which to conduct the interviews in; there would be limited space in schools and clinical services to allow the interviews to be completed face to face and may inconvenience clinical teams who need the space. Furthermore, it would not be possible to interview participants during school time, which in addition to Trust lone working policies, would leave only a very narrow timeframe of 3:30pm until 5pm in weekday term-times in which to conduct the interviews. It

was decided that telephone interviews would allow young people to be contacted as a convenient time for them, whilst ensuring researcher safety and removing the limiting factor of physical space. Telephone interviewing has been found to be effective in children age 11 and over (Reich & Earls, 1990) and has been shown to have excellent agreement of diagnosis when using structured interviews when compared to face to face interviews (Lyneman & Rapee, 2005). Furthermore, a number of studies have used telephone interviews to assess post traumatic symptoms or symptoms of depression in children and adolescents aged between 11 and 18 (Adams et al., 2014; Kilpatrick et al., 2003).

3.3 Participants

The study comprised three groups of participants. Two clinical groups; a clinically depressed group, a group with PTSD with or without a comorbid diagnosis of depression, and a control group.

Participants were grouped based on their diagnosis as confirmed by the Anxiety Disorders Interview Schedule (ADIS-C; see below for details of the assessment). Participants who reached clinical cut-off for the depression interview were assigned to the depression group; participants who reached clinical cut-off for the PTSD interview were assigned to the PTSD group. If participants reached clinical threshold for both the depression interview and the PTSD interview, they were assigned to the PTSD group.

Young people were placed in the control group if they did not reach clinical threshold for depression or PTSD on the ADIS.

3.3.1 Clinical groups. Inclusion criteria were: aged between 11 and 18 years, a diagnosis of depression or PTSD as confirmed by the ADIS. Participants were also receiving care from a child and adolescent mental health team. Exclusion criteria were: a diagnosis of

obsessive compulsive disorder, substance dependence, current or previous psychotic disorder, a neurodevelopmental disorder or a learning disability.

Participants were recruited through clinicians working in children and adolescent mental health services including: Clinical Psychologists, Assistant Psychologists, Community Psychiatric Nurses, Occupational Therapists, Social Workers and Psychiatrists. Clinicians were initially contacted by email (Appendix C) identified participants who met the inclusion criteria then briefly described the study to the young person and their parent/carer and gave them each an information sheet (Appendix D). Potential participants were advised to read the information sheet if they were interested in taking part. At their subsequent meeting with the young person, clinicians enquired whether they would be interested in taking part in the research and sought verbal consent from both the young person and their parent/carer to pass their contact details to the researcher. Once they had this verbal consent, the clinicians emailed the researchers the contact details of the young person and their parent.

3.3.2 Control group. Participants were recruited through a local school. All young people aged between 11 and 16 were sent an email to their internal school email (Appendix E) which included a brief description of the study, the information sheet and a link which they could follow to register their interest. The link led the young people to an e-survey asking them to input their contact details and the contact details of their parent/carer. Once received, the researchers contacted the parent/carers to send them a parent/carer information sheet.

Both clinical and control participant groups were recruited through online and offline advertising. Initially, two posters (Appendix F) were displayed in waiting rooms of child and adolescent clinical services, GP services and local schools. The poster was also displayed online on websites such as MumsNet, Twitter and Facebook. The poster advertised for young

people aged 11-16 to register their interest. After the second amendment which allowed us to recruit 11-18 year olds, a new poster was made to reflect this change. Young people were asked to register their interest by either signing up with their name, date of birth and phone number using the online survey system, or by emailing the researcher. Once this was received, researchers sent the young person the information sheet and parent/carer information sheet and arranged a time to call them to briefly discuss the study.

3.4 Procedure

See Appendix G for procedure flow chart.

3.4.1 Consenting procedure. Once participant's consented to clinicians' passing their details on, researchers emailed the family to arrange a convenient time to schedule an initial call. Participants and parent/carer's were then called at the pre-arranged time to go through the information sheet and to have the chance to answer any questions they may have had about the research. Once the participant and parent/carer have verbally agreed to take part in the study, a mutually convenient date and time was set for the phone interview to take place. Researchers ensured that the parent/carer would be available and at home with the child for the duration of the telephone interview. Once the phone call was complete, parent/carers were sent consent forms via an e-Survey link in an email to record their informed consent for their child to participate. The young person was then sent an email which contained an assent form via an-Survey link and another e-Survey link to the questionnaires hosted online assessing trauma history (CATS) and symptoms of depression and anxiety (RCADS).

3.4.2 Telephone interview. A researcher telephoned the family at the pre-arranged time to conduct a structured interview. The interview always took place a minimum of 24 hours after consent was received. The researchers spoke to the parent/carer first to ensure

they would be available to the child throughout the interview, before confirming with the child that they were happy to proceed. The interview started with assessments of PTSD and MDD, using the ADIS-C PTSD and depression scales, and then explored intrusive memories and intrusive thoughts, with the order of intrusions sections counterbalanced across participants. The interview was roughly 30 minutes in length.

3.4.2.1 Intrusive thoughts interview. See Appendix H for full interview schedule. Participants were read the following definition of intrusive thoughts, adapted from that provided by Brewin, Christodoulides and Hutchinson (1996): "*Intrusive thoughts are repetitive thoughts that pop into your head without you choosing to think about them. They may be nice or unpleasant thoughts, pictures or ideas that get in the way of your day-to-day activities and can feel difficult to control. Today, we are interested only in unpleasant intrusive thoughts. In this section we're not going to talk about memories of things that have happened to you in the past. Some of these thoughts, pictures or ideas might be hard to talk about or embarrassing but its important that you're as honest as possible.*" For those able to describe an intrusive thought, all interview questions were answered with respect to this. If the participant was unable to identify an intrusive thought, the interview was terminated.

3.4.2.2 Intrusive memories interview. See Appendix I for full interview schedule. Participants were read the following definition of intrusive memories, adapted from that provided by Brewin et al. (1996). For those able to describe an intrusive memory, all interview questions were answered with respect to this. If the participant was unable to identify an intrusive memory, the interview was terminated.

3.4.3 Feedback and follow-up. The young person was debriefed at the end of the interview. Participants in the clinical groups were given the option for material discussed to be passed to their clinical team. All young people were offered a follow-up telephone call to discuss any issues that may have arose during the interview. Once the researchers had

finished talking to the young person, they spoke to the parent/carer over the telephone to debrief them and to ensure that they were available to the child should they need them. A standardised debrief by email was then sent (Appendix J), along with an Amazon email gift voucher for £5.00. All participants were enrolled in the study for a minimum of three days and a maximum of two weeks, depending on family and researcher availability.

3.4.4 Understanding of intrusive thoughts. It was important to distinguish intrusive thoughts from negative automatic thoughts (NATs). Intrusive thoughts are more disruptive, irrational, ego-dystonic and are more easily accessed, whereas NATs are harder to access, less disruptive and more likely to run parallel to conscious awareness (Clark, 2005). If young people identified an intrusive thought, they were asked to briefly described the content of this thought so that a researcher can determine whether the thought was an intrusive thought or NAT. Researchers would ask follow-up questions about the nature of the intrusive thought if deemed necessary to determine if it fitted the description of an intrusive thought. For example, if a young person reported an intrusive thought of "I'm stupid", the researcher might ask when this thought happens and if it happens at random. If the thought "I'm stupid" was found to occur only at school and when they got a question wrong, this would have been classed as a NAT. Where one researcher could not determine if it was an intrusive thought or NAT, the content and features of the thought was recorded and discussed with the second researcher to confirm agreement.

3.4.5 Recruitment and amendments. Due to the slow recruitment for participation to the study, it was necessary to apply for two amendments both of which received a favourable opinion from the REC. The first amendment allowed the advertisement of the study through online and offline mediums; namely social media and posters placed in waiting

rooms of clinical teams. Although this dramatically improved recruitment rates, due to the time pressure of the study, a second amendment was applied for. This second amendment allowed the recruitment of participants aged 11-18 for the study. It also allowed the change the consenting procedure for 16, 17 and 18 year olds after feedback from participants of those ages who did not want their parents to be involved. Participants aged 16-18 were now able to consent themselves to the study with no involvement from their parents, however it was still requested that somebody be at home with them during the interview in case of any distress. Despite these two changes, the study was still largely under target for the two clinical groups. Please see Appendix K for diagrammatic representation of the recruitment procedure.

Ethics

3.5 Ethical Approval

Ethical approval was granted by the Solihull NHS Research Ethics Committee (Appendix L). Approval was also granted by the Research and Development Departments in Cambridge and Peterborough NHS Foundation Trust and Norfolk and Suffolk NHS Foundation Trust (Appendices M and N respectively). The study received a favourable opinion for two amendments. The first allowed recruitment through online and offline advertising, and the second amendment extended the age range up to 18 years of age. In addition to this, following the second amendment, young people aged 16-18 were not required to have parental consent.

3.6 Ethical Considerations

3.6.1 Consent and assent. As children below the age of 16 are considered to be a vulnerable group (BPS, 2010) parental informed consent was obtained, in addition to child informed assent (Appendix O). Parents/guardians were informed that the study would ask

about potentially distressing events and informed consent will be sought for them before approaching the child. Participants were informed of the nature of the study (i.e., telephone interviews about potentially sensitive thoughts) at the information sheet, start of online questionnaires and start of telephone call.

3.6.2 Confidentiality. Confidentiality was maintained by assigning each participant a participant number. Data collected electronically were stored on an encrypted memory stick and data collected from telephone interviews were recorded on Excel spreadsheets; both were identifiable only by the participant number. Data are being stored according to the UEA confidentiality code of practice as well as the Data Protection Act (HM Government, 1998). Participants were made aware of the procedures taken to ensure their confidentiality prior to giving consent.

3.6.3 Coercion. Participants were made aware that their participation in the study was entirely voluntary, that their decision would not affect the clinical care they receive in any way and that they were able to withdraw from the study at any point without giving a reason. A £5 Amazon voucher was sent to the children upon completion of the telephone interview to thank them for their participation; it was believed that £5 was appropriate for the amount of their time children volunteered.

3.6.4 Distress. It is acknowledged that some of the participants may have found some of the interview questions or questionnaires distressing as they were asking about potentially sensitive thoughts and memories. Participants were aware that they did not have to answer all of the questions and they were able to stop at any time. Researchers ensured they spoke to the parent/guardians at the start and end of the telephone interview to ensure they will be

available to their child during and after the interview. Participants were offered a follow-up call within a week following the interview. All participants who had a clinician in the mental health team were encouraged to contact them if they were to be become distressed.

3.7 Measures

3.7.1 Demographic information. Information was collected by means of self-report at the start of the interview. Participants age, gender and school year was collected.

3.7.2 The Revised Child Anxiety and Depression Scale (RCADS: Chorpita, Yim, Moffitt, Umemoto & Francis, 2005). The RCADS is a 47-item, self-report questionnaire that measures the frequency of anxiety and depressive symptoms in young people between the ages of eight and 18 (Appendix P). The items are rated on a four-point Likert scale from 0 ("never") to 3 ("always").

The RCADS is made up of subscales which include: separation anxiety disorder, social phobia, generalized anxiety disorder, panic disorder, obsessive compulsive disorder and major depressive disorder. The RCADS produces a Total Anxiety Scale (sum of the five anxiety subscales) and Total Internalizing Score (sum of all the subscales).

The RCADS has been found to have good internal consistency (alpha coefficient 0.70 – 0.96; Kosters et al., 2015) and showed convergent and divergent validity (Chorpita, Moffitt & Gray, 2005).

3.7.3 The Child and Adolescent Trauma Screen (CATS; Berliner & Goldbeck, 2015).

The CATS is a self-report measure of PTSD symptoms, life events and stressors (Appendix Q). It is the only trauma questionnaire based on DSM-5 criteria of PTSD. The CATS includes a trauma exposure list, consisting of 15 potential traumatic events with a simple yes or no answer format, and a PTSD inventory, which asks how often a number of statements have bothered them in the past two weeks. The PTSD inventory consists of 20 questions assessing each DSM-V criteria for PTSD; intrusion symptoms; avoidance; negative cognitions and arousal and reactivity. The CATS is an emerging measure which is currently being validated internationally. The CATS was primarily used by the study to record whether participants in the control and depressed group also had experienced any traumas.

Although still a relatively new measure, the CATS has been found to have excellent reliability (alpha 0.88 – 0.94) and excellent convergent-divergent validity with measures of depression (r = 0.62 – 0.82) and anxiety (0.40 – 0.77; Sachser et al., 2017).

3.7.4 The Anxiety Disorders Interview Schedule child version (ADIS-C: Silverman & Albano, 1996)

The ADIS-C is a clinician administered, structured interview used to assess the presence and severity of anxiety disorders and major depressive disorder (MDD) in children and adolescents age seven to 17 based on the criteria set by the DSM-IV-TR (APA, 2000). The depression and PTSD interview schedules will be administered to check for diagnosis of depression and PTSD. The ADIS has been found to have excellent test-retest reliability (Silverman, Saavedra & Pina, 2001), excellent inter-rater reliability (Lyneham, Abbott & Rapee, 2007) and good concurrent validity (Wood, Piacentini, Bergman, McCracken & Barrios, 2002).

3.8 Structured Interview of Intrusive Thoughts

3.8.1 Measures of intrusive thoughts characteristics.

3.8.1.1 Frequency. Participants were asked to rate how often the thought 'pops into' their mind. They were asked to choose from*: less than once a week, several times a week, every day* or *more than once a day.*

***3.8.1.2 Duration*.** Participants were asked how long the thought stays in their mind for. They were asked to choose from: *seconds, a few minutes, up to an hour* or *more than an hour*.

3.8.2 Measures of associated emotions and distress.

3.8.2.1 Associated emotions. Participants were asked to rate on a scale from 0 (*not at all*) to 100 (*very much*), how strongly they associate each emotion (anger, sadness, fear, guilt, shame and anxiety) with their thought. These emotions were identified by Reynolds and Brewin (1999) in relation to intrusive memories. They were also asked to name any other emotions associated with their thought and to rate these using the same scale.

3.8.2.2 Distress. Participants were asked to rate how distressing they find their intrusive thought on a scale from 0 (*not at all*) to 100 (*very much*).

3.8.3 Measures of appraisal of thought.

Participants were asked to rate on a scale from 0 (*I don't believe this at all*) to 100 (*I am convinced this is true*), how much a particular statement applies to them in reference to how they appraise the thought. The statements have been adapted from Newby and Moulds (2010) appraisals measure for intrusive memories.

3.8.4 Measures of thought control.

Participants were asked how often (*often, sometimes* or *never*) they use rumination, suppression, distraction and replacement as defined by a list of statements. They were then asked to rate how useful they find each strategy on a scale from 0 (*'I don't feel at all better'*) to 100 (*'I feel completely better'*).

The intrusive thoughts interview and intrusive memories interview were administered in a counter-balanced order.

3.9 Analyses, statistical power and sample size calculation

Assuming a large effect size (Cohen's d > 0.75) at power 80% and alpha 0.05, a sample size of 26 participants per group was required in order to carry out the analyses. Unfortunately, due to difficulties recruiting into the clinical groups it was not possible to reach these figures. The study closed with 28 participants in the control group, 13 in the PTSD group and 11 in the depression group. With these numbers in the clinical groups, a very large effect size (Cohen's d > 1.12) at power 80% and alpha 0.05 could be detected.

Four research questions were tested in this study and the analyses for each is presented. SPSS version 22.0 was used to conduct the analyses. All four research questions were analysed using between group testing. The dataset comprised of information regarding diagnostic group (PTSD, depression or controls) as the independent variable and presence and frequency of intrusive thoughts, associated emotions and distress, appraisal of intrusive thought and thought control strategies as dependent variables. As research is looking for between group differences in each of the sections, the data were analysed using one-way analysis of variance (ANOVA), Kruskal-Wallis, Chi squared tests and post-hoc comparisons. The alpha level was set at 0.05, with Bonferoni corrections made for multiplicity where required. Effect sizes (Cohen's *d*) were calculated and reported for any significant results.

Chapter 4: Empirical research study

Intrusive thoughts in young people with depression, PTSD and non-clinical controls

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This review has been written in accordance with the Journal of Affective Disorders (Appendix A).

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Abstract

Background*:* Research in adults suggests that intrusive thoughts are common in members of the general population and are often seen in clinical disorders such as depression, however little is known about the experience of intrusive thoughts in young people. The present study investigated the experience, associated emotions, appraisal and coping style in response to intrusive thoughts in young people with depression, PTSD and a non-clinical control group. **Methods***:* Young people age 11-18 with depression (n=11), PTSD (n=13) and a non-clinical control group (n=28) completed a structured interview concerning the experience, frequency, duration, associated emotion, appraisal and coping style of intrusive thoughts. **Results:** Intrusive thoughts were common in all three groups, but were more common in the depression group. Both of the clinical groups reported more negative emotions in response to their thought and appraised their thought more negatively than the non-clinical group. There was no between groups difference in coping strategies used. **Limitations:** Small sample sizes limit the conclusions that can be drawn. Replication is needed with larger numbers of clinical participants. **Conclusion:** Intrusive thoughts are a common experience in young people, but are associated with more negative emotion and negative appraisals in young people with depression and PTSD. These emotions and appraisals may have a role in maintaining such psychopathology, and so may be a target for psychological intervention in young people.

Keywords: intrusive thoughts, depression, young people, adolescents, PTSD

Background

Intrusive thoughts are defined as *"unwanted, unintended and recurrent. It interrupts the flow of thoughts, interferes in task performance, is associated with negative affect and is difficult to control*" (Clark, 2005, p. 4). Intrusive thoughts have been found to occur in depression, post-traumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD) and anxiety disorders (Purdon and Clark, 1993). Intrusive thoughts are also known to be experienced by the majority of the general population, although they are rarely bothersome for them (Purdon and Clark, 1993). Cognitive theories suggest that it is the *appraisal* or *interpretation* of the thought that plays a fundamental role in whether the intrusive thought is distressing or not (Rachman, 1997). There is a breadth of research supporting this concept in the field of OCD (Rowa and Purdon, 2003), but less is known about the role of appraisal of intrusive thoughts in depression and PTSD in young people.

Depression in young people

Childhood depression is frequently understood using the same models that are used when treating adults with depression. Arguably the most widely known theory of depression is Beck's (1976) cognitive theory of depression. This model proposes that individuals have latent depressive schema that result in vulnerability to depression. In this account, this is believed to be because the depressive schema tends to be dysfunctional beliefs and attitudes, which once activated trigger a pattern of negative automatic thoughts (NATs) and lead to depressive symptomology.

A study by Clark (1992) concluded that one can distinguish a type of intrusive, obsessive-like negative thought in depression, that is distinct from the NATs typically associated with depression, due to their ego-dystonic (i.e. inconsistent with one's

fundamental beliefs) and obsessive-like nature (Clark, 1992). The literature on intrusive thoughts suggests they are associated with depression (Ciesla and Roberts, 2007; Tanaka et al., 2006) and are a significant predictor of depression scores (Ito et al., 2006; Starr and Moulds, 2006). Unfortunately, this is currently a largely under-researched area, especially in young people.

Childhood depression has been found to be predictive of a range of mental health problems (Aronen and Soininen, 2000), physical health problems (Bardone et al., 1998) and suicidal behaviour (Ferguson et al., 2005) in adulthood, which makes it of paramount importance to gain a good understanding of childhood depression and find effective treatments for this condition. National Institute for Health and Care Excellence (NICE) guidelines recommend the use of cognitive behaviour therapy (CBT), interpersonal therapy, family therapy or psychotherapy for the psychological treatment of depression in children and adolescents (NICE, 2013). As proposed by Beck's (1976) cognitive model, young people with depression tend to have negative views of themselves, others and the future; they may see themselves as unlovable, others as critical and the future to be hopeless (Reinecke and Ginsburg, 2008). CBT attempts to address these cognitive distortions, whilst working to make behavioural changes to address symptoms such as low motivation. Evidence shows that the effectiveness of such techniques is variable. A large randomized controlled trial of adolescents with depression found that there was a similar response rate in the CBT and placebo tablet groups (43% vs 35% respectively; March et al., 2004). In addition, two meta-analyses in young people found that while CBT was an effective treatment, it did not produce an effect size greater than 0.3 in either review, which is the lower limit for a moderately effective treatment (Klein et al., 2007; Thapar, 2012; Weisz et al., 2006). This evidence could suggest that cognitive techniques addressed using the standard CBT treatment model

are currently missing important aspects of childhood depression and may benefit from further refinement.

Post-traumatic distress disorder in young people

PTSD is typically viewed as being characterised by intrusive memories (American Psychological Association [APA], 2013); however recent theoretical models propose a major role for evaluative thoughts (also known as appraisals) in the maintenance of PTSD. Ehlers and Clark's (2000) cognitive model proposes that PTSD becomes persistent when the trauma is processed in a way that leads individuals to feel a sense of current, serious threat. Several types of negative thoughts are believed to occur relating to feeling unsafe, PTSD symptoms themselves (e.g. emotional numbing, flashbacks), the consequences of the trauma and other people's reactions. Ehlers and Clark (2000) hypothesise that these appraisals maintain PTSD by producing negative emotions and encouraging individuals to engage in maladaptive coping strategies. NICE guidelines (2013) recommend a course of trauma-focussed CBT for children and adolescents with PTSD. Trauma-focussed CBT has been adapted to target maintaining factors by working on developing a narrative of the trauma, challenging unhelpful appraisals and changing maladaptive coping strategies (Ehlers et al, 2003; Smith et al., 2007).

While the notion that autobiographic memories are a core feature of PTSD is strongly supported (Brewin, 1999; Ehlers and Steil, 1995; Hackman et al., 2004), less is known about how negative appraisals are experienced. There is evidence to suggest that adults with PTSD experience these negative thoughts *intrusively*, particularly in regard to evaluative thoughts such as self-blame and responsibility (Reynolds and Brewin, 1998). Further knowledge about the experience of these appraisals could highlight these as an area in need of greater clinical consideration in therapies such as CBT with young people with PTSD.

Aims of the study

Multiple aspects of the experience of intrusive thoughts remain poorly understood, especially in young people. It is of clinical interest to understand the emotions that accompany the intrusive thoughts in people with depression and PTSD. In a study with adults it was found that participants with depression and PTSD reported high levels of depression, anxiety, guilt and distress in response to their intrusive thoughts (Reynolds and Brewin, 1998). Research in an adult population found that those experiencing intrusive thoughts often report the fear that they are "going crazy" (Shipherd et al., 2000).

It is important to understand how individuals cope with their intrusive thoughts, as certain coping strategies have been hypothesised to maintain the experiences of intrusive thoughts. Reynolds and Brewin (1998) found that distraction and suppression are the most commonly used coping strategies in adults with depression and PTSD in response to intrusive thoughts. Distraction was rated as the most effective way to cope with intrusions (Reynolds and Brewin, 1998; Salkovskis and Campbell, 1994), whereas suppression was found to produce the very thoughts that were intended to be suppressed (Marcks and Woods, 2004).

The present study aimed to investigate the experience of intrusive thoughts in children and adolescents with depression or PTSD with the aim of evaluating the potential of intrusive thoughts as a target for treatment. The study addressed the following questions: (1) Do young people with depression and young people with PTSD report more intrusive thoughts than a non-clinical control group?; (2) Do intrusive thoughts experienced by young people with depression or PTSD differ with respect to associated emotions from those experienced by a non-clinical control group?; (3) Do clinical groups appraise their intrusive thoughts more negatively than a non-clinical control group?; (4) Do young people with depression, PTSD and a non-clinical control group differ in the thought control strategies they use to manage their intrusive thoughts?

Method

Participants

Fifty-two young people aged between 11 and 18 years participated in the study. Eleven young people had a diagnosis of depression (11 girls, mean age = 15.5), 13 had a diagnosis of PTSD (3 boys and 10 girls, mean age = 15), and 28 non-clinical young people were recruited for a control group (10 boys and 18 girls, mean age = 14.5). Participants in clinical groups were recruited over a one-year period from Child and Adolescent Mental Health Services (CAMHS) within two NHS Trusts in East Anglia (n = 8), and through the use of online and offline advertising (e.g. Facebook, Twitter, posters placed in waiting rooms of CAMHS services; n=15). One child initially recruited into the control group scored above the clinical cut-off for PTSD and was subsequently reassigned to the PTSD group.

Young people completed a measure for anxiety disorders including OCD, depression and previous traumas using an online questionnaire to collect information on any between groups differences. Participants were allocated to each group on the basis of structured interviews conducted by graduate psychologists according to DSM-IV (APA, 2000) criteria with the young people as informants (see below for details of assessments). Participants were assigned to the depression group if they reached clinical threshold for the depression interview or to the PTSD group if they achieved clinical threshold for the PTSD interview. The PTSD group included young people who had a comorbid diagnosis of depression (n = 7).

Participants were assigned to the control group if they did not reach clinical threshold for either depression or PTSD. The control group were recruited through a school in East Anglia (n = 17) and through online and offline adverts (n = 11).

Young people were excluded from the study if they presented with a psychotic disorder, a neurodevelopmental disorder, OCD or an intellectual disability.

Measures

The structured interviews and an interview assessing intrusive thoughts and intrusive memories were completed by telephone. Data pertaining to intrusive memories will be reported separately.

Structured interview assessment of PTSD/depression. The Anxiety Disorders Interview Schedule child version (ADIS-C: Silverman & Albano, 1996) is a clinician administered, structured interview used to assess the presence and severity of anxiety disorders and major depressive disorder (MDD) in children and adolescents age seven to 17 based on the criteria set by the DSM-IV-TR (APA, 2000). The depression and PTSD interview schedules were administered at the start of a telephone interview. The ADIS has been found to have excellent test-retest reliability (Silverman et al., 2001), excellent inter-rater reliability (Lyneham et al., 2007) and good concurrent validity (Wood et al., 2002).

Self-completed questionnaires administered online.

Anxiety disorders and depression. The Revised Child Anxiety and Depression Scale (RCADS: Chorpita et al., 2005) is a 47-item, self-report questionnaire that measures the frequency of anxiety and depressive symptoms in young people between the ages of eight and 18 years. It produces a Total Anxiety Scale and Total Internalizing Score. The RCADS has been found to have good internal consistency and showed convergent and divergent validity (Chorpita et al., 2005). The OCD subscale was used to screen out any participants with OCD.

Trauma history. The Child and Adolescent Trauma Screen (CATS; Berliner & Goldbeck, 2015) is a self-report measure of PTSD symptoms, life events and stressors. It includes a trauma exposure list (comprising 15 potential traumatic events) and a PTSD symptom inventory. The CATS has been found to have excellent reliability (alpha 0.88 – 0.94) and excellent convergent-divergent validity with measures of depression ($r = 0.62$ –

0.82) and anxiety (0.40 – 0.77; Sachser et al., 2017). The CATS was used to check for trauma history in all groups and to determine posttraumatic symptom severity in the PTSD group.

Participants completed the RCADS and the CATS online prior to completing the phone interview.

Measures of intrusive thoughts characteristics. Understanding of intrusive thoughts was confirmed at the beginning of the intrusive thoughts interview. Participants were first read the following definition of intrusive thoughts, adapted from the definition used by Brewin et al. (1996): "*Intrusive thoughts are repetitive thoughts that pop into your head without you choosing to think about them. They may be nice or unpleasant thoughts, pictures or ideas that get in the way of your day-to-day activities and can feel difficult to control. Today, we are interested only in unpleasant intrusive thoughts. In this section we're not going to talk about memories of things that have happened to you in the past. Some of these thoughts, pictures or ideas might be hard to talk about or embarrassing but its important that you're as honest as possible.*" Follow up questions were used to ascertain that the thought was an intrusive thought and not a NAT (e.g. "*does the thought pop into your mind totally randomly or is it usually after something has happened?"*). The interview was terminated if the participant was unable to identify an intrusive thought. If participants identified more than one intrusive thought, they were asked to answer the subsequent questions on the thought that occurs most frequently.

Frequency. Participants were asked to rate how often the intrusive thought 'pops into' their mind. They were asked to choose from*: less than once a week, several times a week, every day,* or *more than once a day.*

***Duration*.** Participants were asked how long the intrusive thought stays in their mind for. They were asked to choose from: *a few seconds, a few minutes, up to an hour,* or *more than an hour.*

Measures of associated emotions and distress.

Associated emotions. Participants were asked to rate on a scale from 0 (*not at all*) to 100 (*very much*), how strongly they associate each emotion (anger, sadness, fear, guilt, shame and anxiety) with their intrusive thought. These emotions were identified by Reynolds and Brewin (1999) in relation to intrusive memories. They were asked to name any other emotions associated with their thought and to rate these using the same scale.

Distress. Participants were asked to rate how distressing they find their intrusive thought on a scale from 0 (*not at all*) to 100 (*very much*).

Measures of appraisal of intrusive thought. Participants were asked to rate on a scale from 0 (*I don't believe this at all*) to 100 (*I am convinced this is true*), how much a particular statement applies to them in reference to how they appraise the intrusive thought. The statements were adapted from Newby and Moulds (2010) appraisals measure for intrusive memories, and related to the importance of controlling such thoughts (e.g. "I must gain control of this thought", n=3, Cronbach's alpha = 0.808), the sense that having such thoughts is a sign of a significant mental health problem (e.g. "Having this thought means I'm going crazy", n=4, Cronbach's alpha = 0.787) or other negative appraisal (e.g. "Having this thought means that I'm not good enough", n=3, Cronbach's alpha = 0.902).

Measures of thought control. Participants were asked how often (*often, sometimes* or *never*) they used rumination ("I keep going over the thought in my mind over and over again"), suppression ("I try to stop the thought or push it out of my mind"), distraction ("I try to do other things or think about other things to stop myself from thinking about the thought") and replacement ("I try to think about something nice instead") to manage their intrusive thoughts. They were then also asked to rate how useful they find each strategy on a scale from 0 (*'I don't feel at all better'*) to 100 (*'I feel completely better'*).

Statistical analyses

Differences between the three groups were assessed for each measure using Analyses of Variance (ANOVA). In each case diagnostic status (depression, PTSD and control) was treated as the independent variable in the analysis. A conventional p-value of .05 was retained as level of statistical significance. Where data were found to violate assumptions of parametric tests, differences were assessed using non-parametric tests. Bonferroni correction for multiple testing was applied, employing a p-value of .017 as the level of statistical significance. Cohen's *d* effect sizes were calculated for significant results where possible to explore the size of the effect.

Ethical statement

Ethical approval was obtained from Solihull NHS Research Ethics Committee (15/WM/0468). Participants and their parents provided informed consent prior to participating in the study and upon completion were offered a debrief call. Participants from clinical groups were asked if they would like the information from their interview to be fed back to their clinicians. Upon exiting the study, the young person was emailed a £5 Amazon voucher accompanied by a standardized debrief.

Results

Sample characteristics

Sample characteristics – including gender, age, anxious and mood symptoms, trauma history and number reporting any intrusive thoughts – are reported according to group in Table 1. The control group were selected to provide an overall broadly comparable profile with respect to gender and age. Groups did not differ in terms of gender ($\chi^2(2) = 5.407$, $p = .06$) or age ($F_{2, 49} = 1.503$, $p = .2$).

There was a statistically significant difference between group as determined a Kruskal-Wallis K tests for depression scores ($\chi^2(2) = 28.482$, p = <.001) and for anxiety scores ($\chi^2(2) = 21.772$, p < .001). Mann Whiteney U post-hoc tests for depression revealed that the control group reported lower scores on depression (p<.0001), than depression group (U = 12, z = -4.448, p = <.001, Cohen's *d* = 2.83) and PTSD group (U = 36.5, z = -4.096, p = <.001, *d* = 1.86), who did not differ from one another. Post-hoc tests for anxiety revealed that the depression (U = 7.7, z = 4.574, p < .001, *d* = 2.64) and the PTSD group (U= 82.5, z = 2.789, p <.01, d = 1.15) scored significantly higher scores of anxiety than the control group.

The PTSD group had a higher number of reported trauma types ($F_{(2, 49)} = 21.41$, p <.001), than the depression (p<.01, *d* = 1.94) and control groups (p<.01, *d* = 1.73), who did not differ from one another (p=.928, *d* = 0.17).

Table 1

Sample characteristics

	Depression (n=11) M (SD)	PTSD (n=13) M (SD)	Control (n=28) M (SD)	Test
Demographic characteristics				
Age	15.55 (1.266)	15.07 (1.754)	14.55 (1.762)	F = 1.503, p=.232
Sex (n, % female)	N = 11 (100%)	N = 10 (77%)	N = 18 (64%)	$\chi^2 = 5.407$, p=.067
Psychopathology				
RCADS Depression	20.73[a] (4.789)	18.15[a] (6.656)	7.64[b] (4.441)	$\chi^2(2) = 28.482$, p = .000
RCADS Anxiety	71.45[a] (12.324)	59.08[a] (30.145)	30.36[b] (18.25)	$\chi^2 = 21.772$, p=.00
Trauma exposure				
Number of traumas reported	0.73[a] (1.009)	4.08[b] (2.216)	0.93[a] (1.303)	F = 21.414, p=.00
Intrusive Thoughts				
Experience intrusive	11[a] (100%)	10[a,b] (77%)	14[b] (50%)	$\chi^2 = 9.701$,

thoughts p=.008

Note: RCADS = The Revised Child Anxiety and Depression Scale.

Values not sharing the same superscript letters are significantly different (p<.01), as indicated by post-hoc comparison tests.

Intrusive thoughts

The percentage of participants experiencing intrusive thoughts (differentiated by group) are presented in Table 1. Statistically significant between groups differences were found ($\chi^2(2) = 9.701$, $p < .01$), with post-hoc tests indicating that the depressed group reported more intrusive thoughts than the control group ($p < .001$). All subsequent analyses were conducted on the 35 young people (depression, n = 11; PTSD, n = 10; control, n = 14) who reported at least one intrusive thought in the previous month. With a sample size of 35, the study is powered at 80% to detect a very large effect size (i.e. Cohen's $d > 1.12$)

There was a significant difference regarding frequency of intrusive thought ($\chi^2(6) = 14.09$, $p < .05$). Post-hoc analyses reveal that the control group were significantly more likely to experience intrusive thoughts 'once a week or less' (p<.017), and significantly less likely to experience them 'more than once a day' (p<.05). However, the latter result becomes non-significant when accounting for multiple comparisons.

Post-hoc analyses of duration of intrusive thought reveal that the control group were significantly more likely to experience their intrusive thought for "only a few seconds" (p<.01) and the PTSD group were significantly more likely to experience it for "more than an hour" (p<.05).

Figure 1

Frequency of intrusive thought ratings by group

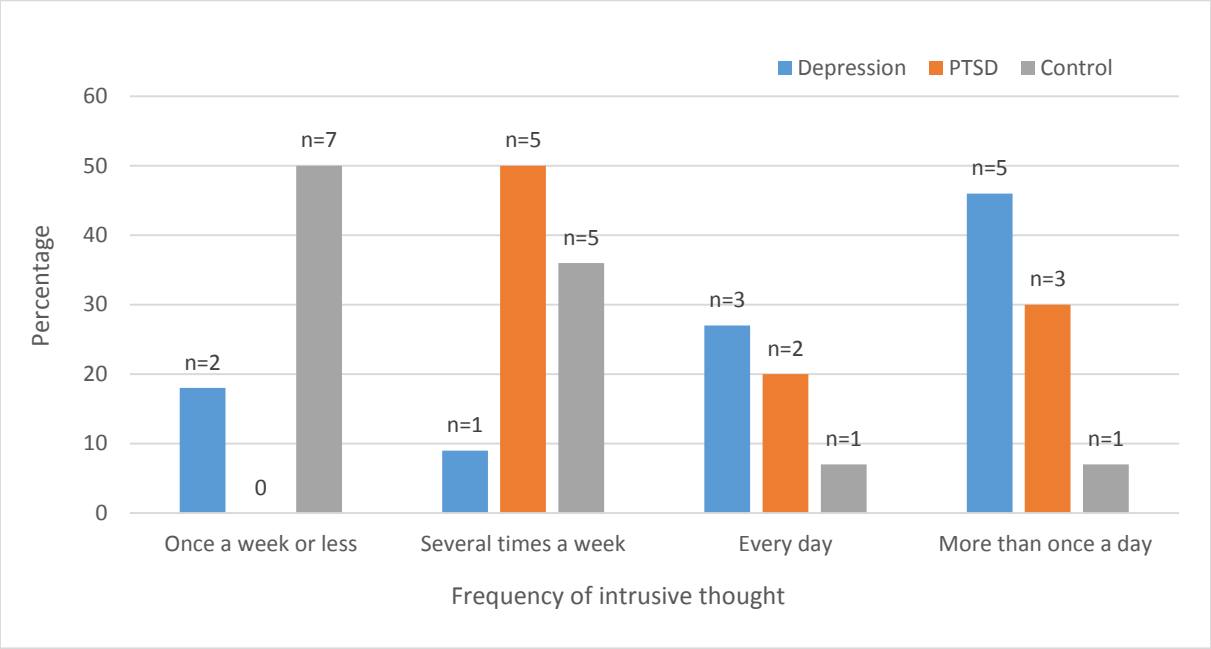
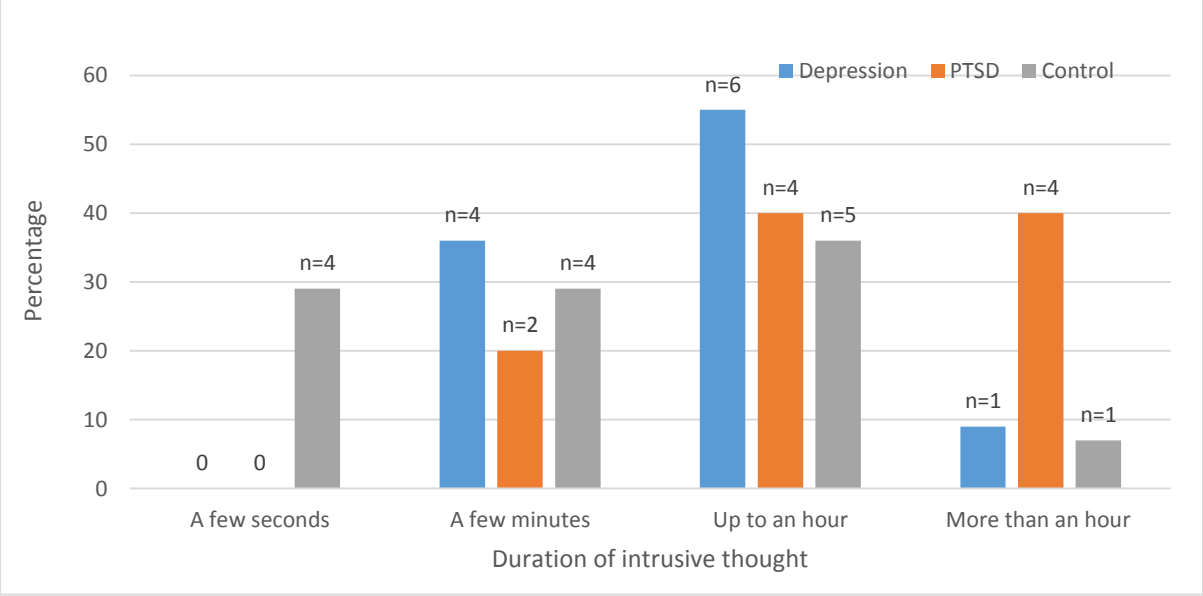


Figure 2

Duration of intrusive thought ratings by group



Emotions and distress

See Table 2 for results of the Kruskal-Wallis test.

Post-hoc analyses using Mann Whitney tests were used to explore differences between groups. Results revealed that the depression group reported significantly more sadness (U=20, z= 3.139, p<.01), guilt (U= 24.5, z= 2.911, p<.01), and shame (U= 30, z = 2.587, p<.01) than the control group. They also reported more anger (U = 34.5, z = 2.367, p<.02), fear (U = 40.5, z = 2.007, p<.05) and helplessness (U=41, z=1.986, p<.05), however these became non-significant when taking into account the Bonferroni correction. The PTSD group reported significantly more guilt (U = 27, z = 2.555, p<.012) and helplessness (U = 29, z = 2.418, p < .0167) when compared to the control group. The PTSD group had a trend for reporting more anger (U = 34.5, z = 2.122, p < 0.05) than the control group, which became non-significant when accounting for Bonferroni corrections. There were no statistically significant differences between the depression group and the PTSD group.

Appraisal

A one-way ANOVA found significant group differences for the appraisal of the intrusive thought, please refer to Table 2.

Tukey's post-hoc tests revealed that the control group had a lower appraisal total than the PTSD group (p<.01, *d* = 1.28) and the depressed group (p<.005, *d* = 1.65), lower scores on the psychological problem total than the depression group (p<.005, d = 1.59) and PTSD group (p<.001, *d* = 1.42) and lower scores on negative self evaluation than the depression group (p<.005, *d* = 1.5) and the PTSD group (p<.005, *d* = 1.48). There were no differences between the depression and PTSD groups.

Coping strategies

See Table 2 for results of the Kruskal-Wallis test. Post-hoc analyses showed that the control group rated replacement as more helpful than the depression group (U = 22.5,

z = -2.668, p<.01) and the PTSD group (U = 25, z = -2.264, p <.05). However, the difference between the control group and the PTSD group became non-significant when accounting for Bonferroni corrections.

The three groups were collapsed to investigate overall helpfulness of coping styles. A within-subjects ANOVA found that there was a significant difference between coping styles for helpfulness ratings ($F_{(2.565, 56.42)}$ = 28.59 p = <.001). Post-hoc paired t-tests showed that rumination was significantly less helpful than suppression (t(23) = -5.674, p<.001 *d* = 1.47), replacement (t(23) = -6.427, p<.001, *d* = 1.84), and distraction (t(25) = - 7.878, p<.001, *d* = 1.95), and that distraction was significantly more helpful than suppression (t(32) = 4.17, p<.001 *d* = 0.44).

Table 2

Means scores of emotions, distress, appraisals and coping strategies by group

	Depression (n=11) M (SD)	PTSD (n=10) M (SD)	Controls (n=14) M (SD)	Test
Affect (0-100)				
Sadness	83.18[a] (15.85)	58.8[a,b] (34.45)	48.93[b] (26.62)	$\chi^2(2) = 10.078$, p=.006
Guilt	72.73[a] (32.89)	64.47[a] (31.99)	24.29[b] (32.51)	$\chi^2(2) = 10.859$, p=.004
Fear	64.09 (29.23)	60.7 (41.53)	37.93 (35.26)	$\chi^2(2) = 4.264$, p=.119
Anger	44.09 (25.18)	43.8 (30.07)	19.29 (29.72)	$\chi^2(2) = 7.052$, p=.029*
Helplessness	70[a,b] (32.48)	75.9[a] (29.39)	40.71[b] (32.22)	$\chi^2(2) = 6.876$, p=.032*
Shame	73.64[a] (30.83)	55.9[a,b] (35.64)	34.36[b] (36.93)	$\chi^2(2) = 6.963$, p=.031
Anxiety	74.09 (20.1)	80.3 (28.48)	63.14 (32.57)	$\chi^2(2) = 2.658$, p=.265
Distress (0-100)	70.91 (22.45)	84.6 (14.6)	52.07 (38.71)	$\chi^2(2) = 4.565$, p=.102

Appraisal				
"Control" (0-300)	194.55 (84.42)	174.1 (102.64)	166.79 (95.27)	F = 0.277, p=.76
"Psychological problem" (0-400)	237.18[a] (67.43)	258[b] (115.67)	110.43[c] (89.87)	F = 9.401, p=.001
"Negative self-evaluation" (0-300)	189.55[a] (85.86)	194.8[b] (95.19)	70[c] (72.48)	F = 8.965, p=.001
Total (0-1000)	621.27[a] (162.26)	626.9[b] (259.5)	344.36[c] (173.53)	F = 8.335, p=.001
Use of coping strategies				
Rumination used	8 (73%)	8 (80%)	10 (71%)	χ^2 = 9.218, p=.056
Helpfulness (0-100)	5.38 (10.54)	26.38 (24.31)	15.5 (16.74)	χ^2 (2)= 5.042, p=.080
Suppression used	10 (91%)	10 (100%)	13 (93%)	χ^2 = 4.036, p=.401
Helpfulness (0-100)	43 (20.58)	63.3 (25.95)	59 (35.2)	χ^2 (2)= 3.896, p=.142
Distraction used	11 (100%)	10 (100%)	14 (100%)	χ^2 = 2.514, p=.284
Helpfulness (0-100)	65.91 (22.89)	66.7 (22.8)	70.21 (32.12)	χ^2 (2)= .827, p=.661
Replacement used	10 (91%)	9 (90%)	13 (93%)	χ^2 = 1.63, p=.803
Helpfulness (0-100)	54.5 (24.55)	54.67 (26)	79.23 (21.68)	χ^2 (2)= 8.649, p=.013*

Note: Values not sharing the same superscript letters are significantly different (p<.01), as indicated by Tukey post-hoc comparisons or chi-square post-hoc testing.

* Indicates that this result became non-significant when accounting for multiple comparisons testing.

Exploratory analyses

Content. Content of the intrusive thoughts was grouped into five categories; (1) Self evaluative thoughts (perceptions of themselves, e.g. "I'm worthless"); (2) External judgment (others perception of them, e.g. "others think I'm weird"); (3) Threat (e.g. "someone might attack me"); (4) Self harm (e.g. jump in front of that train); (5) Images (images about events that are not memories, e.g. seeing an image of a car accident that they did not witness).

Analyses showed that there were no significant differences between groups in the content of the intrusive thought ($\chi^2(8)= 9.064$, $p = .337$). All three groups (n = 24) reported high levels of self-evaluative intrusive thoughts.

Table 3

Percentage of content of intrusive thought by group

	Depression (n=11)	PTSD (n=10)	Controls (n=14)
Self evaluative	8 (73%)	8 (80%)	8 (57%)
External judgment	1 (9%)	1 (10%)	2 (14.3%)
Threat	2 (18%)	1 (10%)	0 (0%)
Self harm	0 (0%)	0 (0%)	2 (14.3%)*
Images	0 (0%)	0 (0%)	2 (14.3%)

*Note: Risk assessments were carried out where necessary.

Clinical vs Control. The two clinical groups (depression group plus PTSD group) were combined to form a 'clinical' group. A Chi squared test found that there was a significant between-groups difference for frequency (χ^2 (3)=9.979, p<.02) of intrusive thought, where the clinical group were more likely to experience the thought 'more than once a day' (p<.01) and less likely to experience it for 'a few seconds' (p<.01).

Independent-samples t-tests were conducted to compare differences between the groups for emotions associated with their intrusive thought. Results showed that the clinical group rated significantly higher on measures of anger (t(33)=2.601, p<.017), sadness (t(33) = 2.36, p<.05), guilt (t(33)=4.023, p<.001), helplessness (t(33)= 2.987, p<.01), shame (t(33)=2.557, p<.017) and distress (t(17.641)=2.260, p<.05) in response to their intrusive thought than the

control group.

Results also found that the clinical group rated their appraisal total ($t(33)=0.561$, $p<.001$), psychological problem ($t(33)=4.354$, $p<.001$) and negatively self-evaluation ($t(33) = 4.296$, $p<.001$) as significantly higher than the control group.

Finally, the control group rated replacement as significantly more helpful than the clinical groups ($t(30) = -2.923$, $p<.01$).

There was no between-groups difference observed for duration of intrusive thought, coping strategy used or content of intrusive thoughts.

Discussion

The study included measures of intrusive thoughts, associated emotions, appraisals and thought control strategies for groups of young people with depression, PTSD and a non-clinical control group. The first aim of the study was to ascertain whether young people in the clinical groups report experiencing more intrusive thoughts than the non-clinical group. The results indicated that the depression group were significantly more likely to experience intrusive thoughts than the non-clinical group but did not differ from PTSD group, and the non-clinical group and PTSD group did not differ significantly from each other. To date, this is the first study to assess the experience of intrusive thoughts with young people with depression and PTSD.

The second aim of the study was to assess whether young people with depression or PTSD differ with respect to associated emotions from those experienced by the non-clinical control group. Results showed that young people with depression reported experiencing more shame, guilt and sadness than the non-clinical group in response to their intrusive thoughts. The PTSD group were found to experience more helplessness, guilt and distress than the non-clinical group. The results did not find any differences between the two clinical groups.

These findings are consistent with research in an adult population who found that participants with depression and PTSD reported high levels of depression, anxiety, guilt and distress in response to their intrusive thoughts (Reynolds and Brewin, 1998). Results indicated that the control group were significantly more likely than the clinical groups to experience their intrusive thoughts less frequently (once a week or less) and for a shorter duration (only a few seconds), whereas the PTSD group were significantly more likely to report experiencing their intrusive thought for more than an hour.

The third aim of the study was to explore whether clinical groups appraise their intrusive thoughts more negatively than the non-clinical control group. Results showed that the clinical groups appraised their intrusive thoughts more negatively than the non-clinical group, with large effect sizes. The depression and PTSD groups were found to score higher on measures of psychological problem and negative self-evaluation, indicating that they were more likely to feel they were "going crazy" or were "weak" for experiencing intrusive thoughts. Such findings are consistent with Rachman's (1997) theory suggesting that it is the *appraisal* of the thought that plays the key role in whether it causes distress, where non-clinical groups are more likely to find intrusive thoughts easy to dismiss (Rachman, 2014). Thus, it is possible that the appraisal of the intrusive thoughts plays a role in the maintenance of such psychopathology in young people with depression and PTSD.

The final aim of the study was to ascertain whether young people with depression, PTSD and a non-clinical control group differ in the thought control strategies they use to manage their intrusive thoughts. There were no differences found between groups with regard to coping strategy used, however the control group were found to rate replacement as significantly more helpful than the depression group. Research into adult populations with depression and PTSD found that distraction and suppression were the most commonly used coping strategies (Reynolds and Brewin, 1998), where distraction was rated as the most

effective way to cope (Reynolds and Brewin, 1998; Salkovskis and Campbell, 1994). Combining the data from all groups found that young people found rumination to be the least helpful way to manage their intrusive thoughts, despite over 70% of participants in all three groups noting that they do ruminate. Distraction was used by 100% of all three groups and was rated as the most helpful coping strategy.

Exploratory analyses revealed that there was no between groups difference in the content of the intrusive thought; self-evaluative thoughts were the most frequently reported by all three groups. This is consistent with the study by Reynolds and Brewin (1998) which found that evaluative cognitions (cognitions concerning personal blame or responsibility) were most common in the depression and control group, and common in their PTSD group.

Implications

First, this study has shown that intrusive thoughts are a common experience, in that they occur in 50% of young people with no clinical diagnosis. However, a key difference in the experience of these thoughts between non-clinical and clinical groups appears to be the frequency, duration, appraisal and the affect associated with them. This has highlighted a difference in the experience of intrusive thoughts in young people with clinical diagnoses and without.

Second, due to these noted differences, the assessment of young people with depression may be informed by these findings. While NATs may be assessed in clinical settings in young people with depression and PTSD (particularly when undertaking a psychological therapy such as CBT), assessing the experience and management of intrusive thoughts may also be of interest to inform psychological formulations and treatment plans. Psychological treatments for depression and PTSD in young people may be enhanced by

directly addressing the experience of intrusive thoughts, i.e. psychoeducation on intrusive thoughts, normalising their experience and teaching young people useful coping strategies.

Third, these findings suggest several avenues for further research. Replicating the study with a larger sample size would allow for more conclusions to be drawn, in particular in regards to any potential differences between PTSD and depression groups and differences in coping styles. Understanding the relationship between intrusive thoughts and NATs may also be informative, e.g. exploring whether the experience of intrusive thoughts is associated with the experience of NATs.

Strengths and limitations

The use of young people with clinical depression and PTSD based on clinical interviews provides results with direct relevance to young people seen in clinical practice. A strength of the study is the structured nature of the interviews used to assess intrusive thoughts. This allowed the collection of rich data in a short period of time, with minimum inconvenience to the participants for taking part. It also allowed for the researchers to ascertain that the thought reported was an intrusive thought, and not a NAT by allowing the space to ask follow up questions. Another strength was the use of additional assessments using self-report symptom scales to assess differences between the two clinical groups in terms of depression, anxiety and number of traumas. The PTSD group did include young people with comorbid PTSD and depression which could limit the differences exhibited between this group and the depression only group. As approximately half of individuals with PTSD also suffer with depression (Flory and Yehuda, 2015) it was decided that including comorbid PTSD with depression in the PTSD group would be most clinically relevant regarding presentation to services.

A limitation of this study is that due to a small sample size, it is underpowered which inevitably restricts the inferences that can be made. Due to this small sample size, the study was only powered to detect very large effects (Cohen's $d > 1.12$). Replication with larger sample sizes would be required to yield more conclusive inferences, particularly relating to the lack of between group differences in emotions associated with the intrusive thought. The participants in the clinical groups were largely self-referred to the study through the use of online and offline adverts. This means that volunteer biases may affect the representativeness of the sample with respect to the population of young people seen in CAMHS clinics. Furthermore, consistent with similar research in the area, the sample was predominantly female which might restrict the generalizability of the findings to young males.

Conclusions

Intrusive thoughts are a common experience in young people. The present study offers a preliminary finding that intrusive thoughts may be significantly more prevalent in young people with depression relative to non-clinical young people. Furthermore, this study has found that young people with depression and PTSD are more likely to experience the intrusive thoughts more frequently, for a longer duration, appraise them negatively and associate them with feelings of guilt, helplessness, shame and distress, which may contribute to ongoing distress and depressed symptomology. Intrusive thoughts in young people warrant further investigation and may prove to be an important target of treatment for young people with depression and PTSD.

References

American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV).* Washington, DC: American Psychiatric Press.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th ed.).* Arlington, VA: American Psychiatric Publishing.

Aronen, E. T., & Soininen, M. (2000). Childhood depressive symptoms predict psychiatric problems in young adults. *Canadian Journal of Psychiatry*, *45*, 465-470.

Bardone, A. M., Moffitt, T. E., Caspi, A., Dickson, N., Stanton, W. R., & Silva, P. A. (1998) Adult physical health outcomes of adolescent girls with conduct disorder, depression, and anxiety. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 594–601.

Beck, A. T. (1976). *Cognitive therapy and emotional disorders*. New York: NY. International Universities Press.

Berliner, L., & Goldbeck, L. (2015). *Child and Adolescent Trauma Screen* Retrieved from http://www.ok.gov/odmhsas/Mental_Health/SHARE/Resources_for_Professionals/index.html

Brewin, C. R. (1999). Intrusive autobiographical memories in depression and post-traumatic stess disorder. *Applied Cognitive Psychology, 12*, 359-370.

Brewin, C. R., Christodoulides, J., & Hutchinson, G. (1996). Intrusive Thoughts and Intrusive Memories in a Nonclinical Sample. *Cognition and Emotion, 10,* 107-112.

Calitz, F J W, de Jongh, N J, Horn, A, Nel, M L, & Joubert, G. (2014). Children and adolescents treated for post-traumatic stress disorder at the Free State Psychiatric Complex. *South African Journal of Psychiatry, 20(1),* 15-20.

Chorpita, B, F., Moffitt, C. E., & Gray, J. (2005). Psychometric properties of the Revised Child Anxiety and Depression Scale in a clinical sample. *Behavioural Research and Therapy, 43,* 309-322.

Chorpita, B. F., Yim, L. M., Moffitt, C. E., Umemoto L. A., & Francis, S. E. (2000). Assessment of symptoms of DSM-IV anxiety and depression in children: A Revised Child Anxiety and Depression Scale. *Behaviour Research and Therapy, 38,* 835-855.

Ciesla, J. A, & Roberts, J. E. (2007). Rumination, negative cognition, and their interactive effects on depressed mood. *Emotion, 7,* 555-565.

Clark, D. A. (1992). Depressive, anxious and intrusive thoughts in psychiatric inpatients and outpatients. *Behaviour Research and Therapy, 30,* 93-102.

Clark, D. A. (2005). *Intrusive thoughts in clinical disorders: Theory, research and treatment.* Guilford Press, London.

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy, 38,* 319-345.

Ehlers A., Clark D. M., Hackmann A., McManus F., Fennell M., Herbert C., & Mayou, R. (2003). A randomized controlled trial of cognitive therapy, self-help booklet, and repeated early assessment as early interventions for PTSD. *Archives of General Psychiatry, 60,* 1024–1032.

Ehlers, A., & Steil. (1995). Maintenance of Intrusive Memories in Posttraumatic Stress Disorder: A Cognitive Approach. *Behavioural and Cognitive Psychotherapy, 23,* 217-249.

Ferguson, D. M., Horwood, L. J., Riddler, E. M., & Beautrais, A. L. (2005). Subthreshold depression in adolescence and mental health outcomes in adulthood. *Archives of General Psychiatry, 62,* 66–72.

Flory, J. D., & Yehuda, R. (2015). Comorbidity between post-traumatic stress disorder and major depressive disorder: alternative explanations and treatment considerations. *Dialogues in Clinical Neuroscience*, *17*(2), 141–150.

Hackmann, A., Ehlers, A., Speckens, A., & Clark, D. M. (2004). Characteristics and Content of Intrusive Memories in PTSD and Their Changes With Treatment. *Journal of Traumatic Stress, 17,* 231-240.

Ito, T., Takenaka, K., Tomita, T., & Agari, I. (2006). Comparison of ruminative responses with negative rumination as a vulnerability factor for depression. *Psychological Reports*, *99*, 763-772.

Klein, J. B., Jacobs, R. H., & Reinecke, M. A. (2007). Cognitive-behavioral therapy for adolescent depression: a meta-analytic investigation of changes in effect-size estimates. *Journal of the American Academy of Child & Adolescent Psychiatry*, *46(11),* 1403-1413.

Lyneham, H, J., Abbott, M, J., & Rapee, R. M. (2007). Interrater Reliability of the Anxiety Disorders Interview Schedule for the DSM-IV: Child and Parent Version. *Journal of the American Academy of Child and Adolescent Psychiatry, 46(6),* 731-736.

March, J., Silva, S., Petrycki, S., Curry, J., Wells, K., Fairbank, J., … Severe, J. (2004). Fluoxetine, cognitive behavioural therapy, and their combination for adolescents with depression: Treatment for Adolescents with Depression Study (TADS) randomized controlled trial. *JAMA, 292(7),* 807-820.

Marcks, B. A. & Woods, D. W. (2004). A comparison of thought suppression to an acceptance-based technique in the management of personal intrusive thoughts: A controlled evaluation. *Behaviour Research and Therapy*, *43*, 433-445.

National Institute for Health and Clinical Excellence, (2013). *Depression in Children and Young People: Identification and management in primary, community and secondary care: CG28*. London, UK: National Institute for Health and Care Excellence.

National Institute for Health and Clinical Excellence, (2013). *Post traumatic stress disorder (PTSD): The management of PTSD in adults and children in primary and secondary care: CG26*. London, UK: National Institute for Health and Care Excellence.

Newby, J. M., & Moulds, M. L. (2010). Negative intrusive memories in depression: The role of maladaptive appraisals and safety behaviours. *Journal of Affective Disorders, 126,* 147-154.

Purdon, C., & Clark, D. A. (1993). Obsessive intrusive thoughts in nonclinical subjects. Part I. Content and relation with depressive, anxious, and obsessional symptoms. *Behaviour Research and Therapy, 31,* 713-720.

Rachman, S. J. (1981). Unwanted intrusive cognitions. *Advances in Behaviour Research and Therapy, 3,* 89–99.

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

Rachman, S. (2014). Global intrusive thoughts: A commentary. *Journal of Obsessive-Compulsive and Related Disorders, 3,* 300-302.

Reich, W., & Earls, F. (1990). Interviewing adolescents by telephone: Is it a useful methodological strategy? *Comprehensive Psychiatry, 31*, 211-215.

Reinecke, M. A., & Ginsburg, G. S. (2008). Cognitive-behavioural treatment of depression during childhood and adolescence. In J. R. Z. Abela & B. L. Hankin (Eds.), *Handbook of depression in children and adolescents* (pp. 179-206). New York: Guildford Press.

Reynolds, M., & Brewin, C. (1998). Intrusive cognition, coping strategies and emotional responses in depression, post-traumatic stress disorder and a non-clinical population. *Behaviour Research and Therapy, 36,* 135-147.

Reynolds, M., & Brewin, C. R. (1999). Intrusive memories in depression and posttraumatic stress disorder. *Behaviour Research and Therapy, 37,* 201-215.

Rowa, K., & Purdon, C. (2003). Why are certain intrusive thoughts more upsetting than others? *Behavioural and Cognitive Psychotherapy, 31,* 1-11.

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

Sachser, C., Berliner, L., Holt, T., Jensen, T. K., Jungbluth, N., Risch, E., Rosner, R., & Goldbrick, L. (2017). International development and psychometric properties of the Child and Adolescent Trauma Screen (CATS). *Journal of Affective Disorders, 210,* 189-195.

Shipherd, J. C., Beck, J. G., Hamblen, J. L., & Freeman, J. B. (2000). Assessment and treatment of PTSD in motor vehicle accident survivors. In L. Vandecreek, T. L. Jackson (Eds.), *Innovations in clinical practice*: A source book, 18, Professional Resource Press, Sarasota, FL.

Silverman, W. K., & Albano, A. M. (1996). *The Anxiety Disorders Interview Schedule for DSM-IV - Child and Parent versions*. San Antonio, TX: Psychological Corporation.

Silverman, W. K., Saavedra, L. M., & Pina, A. A. (2001). Test-retest reliability of anxiety symptoms and diagnoses with the anxiety disorders interview schedule for DSM-IV: Child and parent versions. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 937 – 944.

Smith, P., Yule, W., Perrin, S., Trahan, T., Dalgleish, T., & Clark, D. M. (2007). Cognitive-behavioural therapy for PTSD in children and adolescents: a preliminary randomized

controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 46,* 1051-1061.

Starr, S., & Moulds, M. (2006). The role of negative interpretations of intrusive memories in depression. *Journal of Affective Disorders, 93,* 125-132.

Tanaka, N., Uji, M., Hiramura, H., Chen, Z., Shikai, N., & Kitamura, T. (2006). Cognitive patterns and depression: Study of a Japanese student population. *Psychiatry and Clinical Neuroscience, 60,* 358-364.

Thapar, A., Collishaw, S., Pine, D. S., & Thapar, A. K. (2012). Depression in adolescence. *The Lancet, 379,* 1056-1067.

Weisz, J.R., McCarty, C.A., & Valeri, S. M. (2006). Effects of psychotherapy for depression in children and adolescents: a meta-analysis. *Psychological Bulletin, 132,* 132–49.

Wood, J. J., Piacentini, J. C., Bergman, R. L., McCracken, J., & Barrios, V. (2002). Concurrent validity of the anxiety disorders section of the anxiety disorders interview schedule for DSM-IV: Child and parent versions. *Journal of Clinical Child and Adolescent Psychology, 31,* 335 – 342.

Chapter 5. Extended Results Section

5.1 Assumptions Tests

In order to perform parametric statistical analysis, data are required to meet four assumptions: (a) data are independent (b) data are normally distributed, (c) data have homogeneity of variance, (d) data are measured at least at the interval level (Field, 2009).

5.2 Independence

Analysis of variance (ANOVA) requires that the independent variable consists of two of more categorical, independent groups. It also requires independence of observations, meaning that that there is no relationship between the observations in each group or between the groups. The independent variable in this study is grouped by diagnosis; participants are either in the depression group, the PTSD group or the control group.

5.3 Normality

Histograms were plotted to inspect the shape of the distributions. Visual inspections suggested that the data for the main outcome variables did not always appear normally distributed. To further evaluate this, skewness (symmetry of the distribution) and kurtosis (degree to which scores cluster in the tail of the distribution) values were converted to z scores to allow for further examination. If a z score falls below 1.96 it can be assumed to meet constraints for parametric testing. The skewness and kurtosis of all variables (RCADS anxiety score, RCADS depression score, CATS total, anger, sadness, fear, guilt, helplessness, shame, anxiety, distress, appraisal total, control total, psychological problem, negative self-evaluation, rumination helpfulness, suppression helpfulness, distraction helpfulness, replacement helpfulness) were non-significant ($p>0.05$) for all three groups.

Due to the appearance of the histograms and the relatively small sample size ($n<50$), the Shapiro-Wilk test (S-W) was used to examine further whether the distribution of the data on the main variables deviated from normality. The test compares sample scores to a normally distributed set of scores with the same mean and standard deviation. A non-significant value ($p>0.05$) indicates a normal distribution. See Table 5.1 for review of the Shapiro-Wilks test for normality.

Table 5.1

Outcomes of Shapiro-Wilks tests of normality by group

	Shapiro Wilks								
	Statistic	df	Significance	Statistic	df	Significance	Statistic	df	Significance
	Depression			PTSD			Control		
RCADS anxiety	.912	11	.257	.892	13	.105	.938	28	.100
RCADS depression	.970	11	.883	.957	13	.710	.848	28	.001*
Anger	.937	11	.483	.940	10	.557	.742	14	.001*
Sadness	.900	11	.187	.818	10	.024*	.968	14	.851
Fear	.909	11	.239	.822	10	.027*	.888	14	.076
Guilt	.758	11	.003*	.921	10	.362	.765	14	.002*
Helplessness	.809	11	.012*	.745	10	.003*	.929	14	.297
Shame	.820	11	.017*	.855	10	.067	.819	14	.009*

Anxiety	.914	11	.271	.665	10	.000*	.889	14	.078
Distress	.917	11	.295	.887	10	.156	.877	14	.052
Appraisal total	.844	11	.117	.846	10	.052	.973	14	.918
Control	.862	11	.060	.883	10	.142	.914	14	.182
Psych problem	.958	11	.750	.836	10	.093	.934	14	.351
Negative self-eval.	.910	11	.241	.904	10	.241	.885	14	.067
Rumination helpful	.613	8	.000*	.927	8	.489	.222	10	.048*
Suppression helpful	.871	10	.103	.866	10	.089	.898	13	.127
Distraction helpful	.850	11	.043*	.866	10	.091	.858	14	.029*
Replacement	.944	10	.595	.964	9	.834	.738	13	.001*

helpful

Note. Astericks identifies values which violate the assumptions of parametric tests.

5.4 Homogeneity of variance

Homogeneity of variance was assessed for all variables using Levene's test which tests the null hypothesis that the variances in the different groups are equal. If Levene's test is significant ($p < .05$) it indicates that the variances are significantly different and demonstrates that the assumption of homogeneity of variance is violated. See Table 5.2 for results of the Levene's tests. The variances between the three groups were significantly different for the main outcome variable of the RCADS anxiety, Sadness, Fear, Helplessness and Anxiety, and thus the assumption of homogeneity of variances were violated for these variables. For the other main variables, the variances were equal ($p>0.05$).

Table 5.2

Levene's test for homogeneity of variance

	Levene's test		
	Statistic	df	Significance
RCADS anxiety	.892	13	.105
RCADS depression	.957	13	.710
Anger	.940	10	.557
Sadness	.818	10	.024*
Fear	.822	10	.027*
Guilt	.921	10	.362
Helplessness	.745	10	.003*
Shame	.855	10	.067
Anxiety	.665	10	.000*
Distress	.887	10	.156

Appraisal total	.846	10	.052
Control	.883	10	.142
Psych problem	.836	10	.093
Negative self-eval	.904	10	.241
Rumination helpful	.927	8	.489
Suppression helpful	.866	10	.089
Distraction helpful	.866	10	.091
Replacement helpful	.964	9	.834

Note. Astericks denotes values that violate assumptions of parametric tests.

As data for the RCADS anxiety and depression score, a number of the emotions ratings and helpfulness of coping strategies ratings violate assumptions of parametric tests, and transformations were unable to resolve the skew, non-parametric statistics were utilized for the data analysis for the RCADS anxiety and depression rating and emotions ratings. Kruskal-Wallis K tests were used to explore for between groups differences and if they were significant, post-hoc Mann Whiteney U tests were used to ascertain where the difference lies.

Chapter 6. Discussion and Critical Analysis

6.1 Overview of results

The first chapter of the thesis consisted of a meta-analysis of five studies investigating to what extent rumination is related to depression in young people with depression compared to non-clinical youth. Results showed depression in young people is associated with a significantly higher rate of rumination in comparison to non-clinical young people. The empirical study chapter of the thesis involved measures of intrusive thoughts, associated emotions, appraisals and thought control strategies for groups of young people with depression, PTSD and a non-clinical group. The first aim of the empirical study was to determine whether young people in the clinical groups report experiencing more intrusive thoughts than the non-clinical group. The results indicated that the depression group experienced significantly more intrusive thoughts than the non-clinical group but did not differ from PTSD group, and that there was no difference between the PTSD and control group. There have been no previous studies assessing the prevalence of intrusive thoughts in young people with depression or PTSD. However, a study exploring intrusive thoughts in adults found that adults with depression experienced significantly more *evaluative* intrusive thoughts (described as depressive thinking) than the PTSD or control group (Reynolds & Brewin, 1998).

Furthermore, young people with depression also reported experiencing more shame, guilt and sadness than the non-clinical group in response to their intrusive thoughts. The PTSD group were found to experience more helplessness, guilt and distress than the non-clinical group. There were no significant differences between the two clinical groups however. These findings are consistent with research in an adult population where it was

found that participants with depression and PTSD reported high levels of depression, anxiety, guilt and distress in response to their intrusive thoughts (Reynolds & Brewin, 1998).

Results showed that the clinical groups appraised their intrusive thoughts more negatively than the non-clinical group. The depression and PTSD groups were found to score higher on measures of psychological problem and negative self-evaluation, indicating that they were more likely to feel they were "going crazy" or were "weak" for experiencing intrusive thoughts. This finding is novel as it is the first study to explore appraisals in reference to intrusive thoughts in depression or PTSD in young people.

There were no differences found between groups with regard to coping strategy used, however the control group was found to rate replacement as significantly more helpful than the depression or PTSD group. Research into adult populations with depression and PTSD found that distraction and suppression were the most commonly used coping strategies (Reynolds & Brewin, 1998). However, combining the data from all groups found that young people commonly used rumination in response to their intrusive thought (>70% per group), and results showed that the young people found rumination to be the least helpful way to manage their intrusive thoughts. Interestingly, the present meta-analysis reviewed found that depression in young people is associated with a significantly higher rate of rumination when compared to a non-clinical group. These findings are complimentary to each other, however the present study focused on response to intrusive thoughts only, whereas literature included in the meta-analysis investigated rumination as a concept by using questionnaires examining rumination.

6.1 Exploratory analyses. Exploratory analyses explored the content of the intrusive thoughts. Intrusive thoughts were grouped into one of five categories based on the content recorded regarding the intrusive thought; self evaluative, external judgement, threat, self

harm and image. The intrusive thoughts were categorised by the primary researcher and then checked by another researcher (AP). Any discrepancies in categorisation were discussed until a mutual decision was made.

No significant difference between content of intrusive thought was found between groups. However, all groups reported mostly self-evaluative thoughts. This is consistent with the findings of Reynolds and Brewin (1998) in their study with adults with depression, PTSD and a non-clinical sample, where they found that evaluative intrusive thoughts (described as depressive cognitions concerning blame or responsibility) were by far the most prevalent in the depressed and the control groups, but were also common in the PTSD group. Interestingly, no participants with depression or PTSD reported thoughts regarding self-harm, but 14% (n = 2) of the control group did. One explanation for this finding could be that perhaps this reflects the ego-dystonic nature of intrusive thoughts, where non-clinical young people do not have conscious, deliberate thoughts about self-harming but instead occasionally experience them intrusively.

6.2 Theoretical Implications

To the knowledge of the researcher, there have been no previous studies investigating intrusive thoughts in young people with depression and PTSD, therefore the findings of the current study add to a significant gap in the literature. The implications of these findings are discussed below.

6.2.1 The Response Styles Theory. The Response Styles Theory (Nolen-Hoeskema, 1991) states that rumination on the context of depressive symptoms exacerbates and prolongs symptoms of depression, which increases the likelihood that the low mood becomes chronic and is more likely to evolve into episodes of major depression. If the individual has low

mood when they begin to engage in rumination, the thoughts they have are more likely to be negative, thus exacerbating their low mood. The present meta-analysis found that rumination is significantly associated with a clinical diagnosis of depression compared to controls, with a large effect (Hedge's g = 1.521). Furthermore, a meta-analysis by Rood et al. (2009) found that this effect was seen when comparing depressive symptomology in non-clinical youth, but with less strong association. These meta-analyses provide further evidence for the Response Styles Theories, adding to the literature in young people.

There are discrepancies between theorists as to what triggers rumination. Some researchers believe that rumination is instigated by a negative event (Pyszczynski & Greenberg, 1987), whereas Nolen-Hoeskema (1991) focused on rumination instigated by perceived negative affect. The present empirical study appears to suggest that in young people, rumination can also be instigated by the experience of an intrusive thought. As intrusive thoughts are considered to be spontaneous involuntary thoughts that are not triggered by an external stimulus or situation, this could suggest that rumination can be triggered by the presence of a negative intrusive thought itself, rather than environmental factors. This study also found that young people with depression associated their intrusive thought with significantly more negative emotions, such as shame and guilt than the control group; this is consistent with Nolen-Hoeskema's (1991) suggestion that rumination is instigated by perceived negative affect.

Some further debate in this area centres on whether rumination is adaptive in some contexts or always maladaptive. Theorists argue that rumination can be adaptive as it can be instrumental towards solving a problem (Martin & Tesser, 1996), whereas others focus on the maladaptive nature of rumination arguing that it does not let people relinquish goals (Matthews & Wells, 2000; Pyszczynski & Greenberg, 1987) and rather draws one into negative cycles of thinking thus impairing mood (Nolen-Hoeksema, 1996). The present study

noted that all three groups of young people rated rumination as being the most unhelpful coping styles (found to be reported as significantly less helpful at making them feel better than distraction, replacement or suppression), suggesting that young people themselves acknowledge that rumination is maladaptive. This could be of clinical relevance to clinicians.

6.2.3 Ehlers and Clark (2000) cognitive model of PTSD. Ehlers and Clark's (2000) cognitive model proposes that PTSD becomes persistent when the trauma is processed in such a way that leads one to feel a sense of current and serious threat. The sense of current threat is hypothesized to result from a disturbance of the autobiographical memory, strong associative memory, strong perceptual priming for similar stimuli and negative appraisals of the trauma and its aftermath. The model proposes that the negative thoughts experienced tend to center on feeling unsafe, feeling emotionally numb, experiencing flashbacks, thinking about the consequences of the trauma and other people's reactions. Furthermore, the model hypothesizes that the PTSD is maintained by the appraisals of these thoughts by resulting in negative emotions causing individuals to engage in maladaptive coping strategies.

The present study explored the content, associated emotions and coping strategies used in response to the intrusive thoughts in young people with PTSD. Results found that 80% (n = 8) of young people with PTSD who experienced intrusive thoughts had self-evaluative thoughts (e.g. I am useless), 10% (n = 1) had intrusive thoughts centered around external judgment and only 10% (n = 1) experienced intrusive thoughts regarding perceived threat. The model proposed by Ehlers and Clark (2000) places great importance on the negative thoughts about the self in terms of personal responsibility, shame and loss, for example that the self is weak or damaged. The results from the present study support that theory that young people with PTSD experience negative thoughts about themselves, and demonstrates that these thoughts are experienced, to some extent, as intrusive, and not just in

response to symptoms. Furthermore, a study by Reynolds and Brewin (1998) with adults with PTSD found that the intrusive thoughts were generally evaluative thoughts (which they labelled as generalized depressive thinking), consistent with what was found by this study suggesting there may be some similarities in the intrusive thoughts experienced by young people with PTSD and adults with PTSD. It must be noted that the study was only concerned with the most prominent intrusive thought experienced, so it is possible that young people experienced other intrusive thoughts with different content.

The study also found that young people with PTSD reported significantly more guilt, helplessness and distress in response to their intrusive thought when compared to the non-clinical control group. Furthermore, the PTSD group scored higher on scales of appraisals relating to negative self-evaluation and having a psychological problem than the control group, indicating that the PTSD group are more likely to believe they are weak or defective for having such thoughts and are more likely to believe that the intrusive thoughts are indicative of a psychological problem. These findings might provide evidence for the Ehlers and Clark (2000) model of PTSD in young people as the study gives evidence that young people with PTSD have negative emotions associated with their intrusive thoughts and appraise these more negatively than a non-clinical group.

Finally, the present study found that 80% of young people with PTSD engaged in rumination, 100% engaged in suppression and distraction and 90% engaged in replacement to manage their intrusive thoughts. However, there was no significant difference between how helpful they rated each of these coping strategies. Previous literature in adults acknowledges that suppression was seen to be a maladaptive coping strategies however (Reynolds & Brewin, 1998).

6.3 Clinical Implications

With findings from the present study suggesting that 100% of young people with depression and 77% of young people with PTSD experience some kind of intrusive thought, it would suggest routinely assessing young people who present to child and adolescent services for the presence of intrusive thoughts could be beneficial, to ensure appropriate intervention could be offered as necessary. Furthermore, assessing and gaining an understanding of how young people appraise these thoughts and how they manage them could be important for informing psychological formulation and guiding psychological intervention. Recognising that some negative beliefs may be experienced intrusively could allow clinicians to directly work with this phenomena, either by directly addressing the phenomena or using techniques such as mindfulness (Topper, Emmelkamp, Watkins & Ehrings, 2016).

The present meta-analysis highlighted that there are a number of reliable measures for assessing rumination in children, such as the Children's Response Styles Questionnaire (Abela, Vanderbilt & Rochon, 2004) and the Responses to Depression Questionnaire (Nolen-Hoeksema & Morrow, 1991) questionnaire. These questionnaires are widely available and quick and easy to administer either by clinicians or by client's self-reporting so may prove to be a useful tool in clinical practice to assess young people with depression for presence of ruminative thoughts. The assessment of intrusive thoughts and how young people cope with them could prove to be useful in clinical practice to inform formulation and drive therapeutic interventions.

Findings from the meta-analysis indicate that rumination is significantly associated with a clinical diagnosis of depression in youth, and the empirical study suggest that rumination is rated as being the least helpful coping style. These may suggest rumination as a potential key feature for childhood depression. Mindfulness Based Cognitive Therapy (MBCT) is one of the NICE recommended treatments for depression in adults and now has

an emerging evidence base for the treatment of anxiety and depression, in adapted form, with children and adolescents (Burke, 2010; Greenberg & Harris, 2012). There is evidence to suggest that MBCT is effective at reducing rumination in adult samples (Geschwind, Peeters, Drukker, van Os & Wichers., 2011; van Alderaan et al., 2014). Although there have been a number of studies promoting the effectiveness of adapted MBCT in young people and proving its effectiveness for depression (Raes, Griffith, Van Der Gucht & Williams, 2013), to date, there are no randomized controlled trials exploring MBCT for rumination young people with depression. This might be an area of interest for future research.

A recent randomized control trial evaluated the efficacy of adapted rumination-focused CBT (in a group setting or online) as a preventative intervention for young people who have high levels of worry and rumination, defined as "repetitive negative thinking" (Topper, Emmelkamp, Watkins & Ehrings, 2016). They found that both of the preventive interventions (group and online) significantly reduced the tendency to engage in repetitive negative thinking when compared to the waitlist control group. They also report that the groups receiving the interventions showed significantly reduced symptom levels of anxiety and depression, with a between group effect of 0.36 to 0.72. Interestingly, the preventive interventions enabled participants to reduce their tendency to worry and rumination towards, what is considered by reported norms, to be "normal" levels. This study highlights the value of the rumination-focused intervention for prevention of anxiety and depression, and demonstrates that young people are able to engage and benefit from such an intervention. Further research might wish to investigate the use of this adapted rumination-focused CBT in young people with a diagnosis of depression to explore whether it is efficacious at reducing worry and rumination in clinical groups.

6.4 Strengths and weaknesses

6.4.1 Cross-sectional study design. The present study employed a between-subjects cross-sectional design to answer the research questions following other prominent research in this area with adult populations (Reynolds & Brewin 1998). Cross-sectional studies are believed to be quick and easy to perform, and as participants are only interviewed at one-time point, there is no loss to follow-up. For this reason, a cross-sectional study was suitable for this study as it allowed an estimate of intrusive thoughts in three populations, permitting an estimate of prevalence. However, having only explored the experience in one cohort of young people in a single timeframe means that the stability of these experiences in unknown.

However, cross-sectional studies may also be prone to non-response bias if participants who consent to take part in the study differ from those who do not take part, thus resulting in a sample that may not be representative of the population. Furthermore, as data are only collected at one time-point it is only possible to infer an association, not a causation (Showers, Zeigler-Hill, & Limke, 2006) i.e. the study can determine that depression in young people in associated with intrusive thoughts, but cannot determine whether the depression preceded the intrusive thoughts, or the other way round. Cross-sectional studies can be useful at informing hypotheses for more complex investigations however.

6.4.2 Sample size. Unfortunately, the study was underpowered which restricts the inferences that can be made. A priori power calculations indicated it was necessary to recruit 26 participants per group, resulting in a total sample size of 78. This number was achieved for the control group with 28 participants, but was not achieved for two clinical groups where the final participant numbers were 13 with PTSD and 11 with depression. Every effort was made to increase the participant numbers in the current study (see Appendix K). Clinicians in nine child and adolescent mental health teams and paediatric services across East Anglia were contacted on a weekly basis, however referral rates from clinicians to the study was

relatively low (nine out of 33). There are a number of hypothesis for why this was the case. In the first instance, clinical teams within Norfolk and Suffolk NHS Foundation Trust are moving away from diagnosis-led care, and thus might have found it harder to identify participants who may have fitted the study inclusion criteria. Alternatively, some clinicians may have some anxieties with researchers interviewing their clients about potentially sensitive material. It is important to be mindful that clinical teams are currently very stretched for resources and therefore their priorities are understandably likely to lie in client care. Once ethical approval was granted allowing the study to advertise online and offline using posters, a larger number of young people registered their interest for the study. A total of 20 participants with depression signed up for the study, and nine failed to complete the study, totalling a dropout rate of 42%. This is a stark contrast from the PTSD group where 100% of the participants who signed up for the study completed it; this includes participants who had a comorbid diagnosis of depression. This low response from the depression group may have introduced bias into the sample and affected the power of the study to detect effects. It is important to note, however, that this study was pilot in nature, due to the lack of previous research in this area before. The findings may suggest that this is an area that warrants further exploration.

Furthermore, this study struggled to recruit males into the project, with males contributing only 25% (n = 13) of the total sample size, although the depression group was entirely female. While this is not uncommon for research in this population group, future research must be sure to recruit more male participants to ensure generalizability of their study findings. It could be hypothesised that males are less likely to be forthcoming with discussing their psychological difficulties due to the stigma surrounding mental illness, particularly for males.

The low retention rates from participants with depression also further highlights the challenges of including young people with depression in this type of research. It was not possible to obtain demographic data for young people who did not complete the research interview and therefore it is not possible to determine whether or not there were differences in those who completed the research study and those who did not. Further research with this population may considering using only self-report questionnaire measures administered online or facilitating face-to-face interviews. Unfortunately, this was beyond the scope of this study as ethical approval did not permit these ways of collecting the data, but may have helped aid retention rates.

6.4.3 Data collection. Missing data was not a large problem for this study. In terms of self-report questionnaires, the online questionnaire system was programmed to force choice. A very small minority of participants missed a question or two on the RCADS; mean replacement was used to replace the missing data which does introduce some unavoidable bias into the sample. Additionally, administering the structured phone interviews allowed researchers to ensure that participants gave a meaningful response to all questions.

However, a larger problem for this study was that data were not collected regarding ethnicity or socio-economic status as an effort to streamline the interview and reduce the length of the interview. Research notes that it is necessary to inquire into factors such as ethnicity and socio-economic status for young people, as well as adults, when considering child's health to explore for any confounders or interactions (Cheung & Goodman, 2015). Research replicating the study should be mindful to collect such data.

It is possible that reading the definition and example of intrusive thoughts might have primed participants to think more about this, and relate the example of the intrusive thought to themselves. However, as previously mentioned, the study held the advantage of enabling

researchers to ask follow-up questions to ascertain that the thought reported by the participant was in fact an intrusive thought.

6.4.4 Participant distress. Prior to the study starting, there were understandable concerns about participants becoming distressed due to nature of discussing potentially sensitive material over the telephone. No participants in any of the groups reported finding the interview in any way distressing. The overwhelming feedback from the young people was that they enjoyed completing the interview. Researchers were conscious of listening out for changes in the tone or responses of young people (e.g. tone of voice, engagement in interview etc.) which might suggest a change in affect or distress, and would periodically ask the participant whether they felt happy to continue with the interview. No participant was observed to become distressed or asked to terminate the interview. It is always possible, however, that participants hid their distress.

The large majority of participants did not want a follow up call, and of those participants who did (n = 5), two wanted to share with the researchers how much they enjoyed participating in the study and discussing their intrusions as it is not something they would usually get the chance to do. Participants in the clinical groups also had the option of a researcher giving feedback to their clinician, four participants took this option. One participant asked that her clinician be made aware of a previous trauma and the subsequent intrusions so that she could discuss these in therapy as the interview made her realise that she was still experiencing difficulties with these. This feedback from participants' highlights that participating in the study was a positive experience for them and there was no associated distress due to discussing their intrusive thoughts.

6.5 Implications for further research

The limited literature in the field of intrusive thoughts in young people highlights the importance of further expanding our knowledge in how young people experience intrusive thoughts and how their coping styles may exacerbate their symptoms of low mood or PTSD. First and foremost, replication with larger sample sizes would be required to yield more conclusive inferences. The age range of participants in this study focused on young people and adolescents; there may be a need to replicate this research in younger children.

The findings from this study were promising, however there were a number of methodological shortcomings, therefore further research is required to validate its results. Furthermore, the addition of a PTSD only group could allow for further investigation of intrusive thoughts in PTSD, and help to pick apart the association of depression in PTSD as a possible contributing factor for intrusive thoughts. As this study found difficulties with recruiting the clinical samples, future studies may consider using online questionnaires for the questions of the structured interview. This may yield a larger sample size and possibly even reduce volunteer biases, however it is important to be aware of ethical considerations regarding parental consent and asking potentially sensitive questions without human contact.

In line with the findings from the meta-analysis, future studies may wish to further explore the relationship between rumination and intrusive thoughts in young people. Studies investigating rumination should consider using the same measures, Response Style Questionnaire, as used by Connolly et al. (2013), Schepman, Fombonne, Collishaw and Taylor. (2014) and Stewart, Mazurka, Bond, Wynne-Edwards and Harkness (2014) in order to make meaningful comparisons. Although the cross-sectional design of the current study reduced participant burden, it had the negative effect of not being able to determine the experience of intrusive thoughts over time in relation to depression and PTSD. Longitudinal studies investigating the direction of associations between depression and PTSD, intrusive thoughts and rumination could be of interest to help understand relationships between the

three phenomena and could potentially help with early prevention. Additionally, qualitative methodologies could be employed to look at the experience of intrusive thoughts in young people with depression and PTSD. The use of mixed methods designs could help to gain a greater depth of understanding into the experience of intrusive thoughts and rumination in young people, as has been highlighted by the present study.

Randomised controlled trials in adult population have found promising results for the use of rumination-focussed CBT (Watkins et al., 2011) and Mindfulness-based CBT (Geschwind et al., 2011) for patients with a history of depression who ruminate. However, such studies have not been carried out in young people with depression, despite evidence that mindfulness-based CBT is feasible and associated with symptom reduction in young people (Ames, Richardson, Payne, Smith & Leigh, 2014). Replicating such trials in young people with depression who ruminate could be an area of interest for future research.

6.6 Conclusion

Research into intrusive thoughts and rumination in those with a diagnosis of depression or PTSD has largely focussed on the experience in adult populations. The current study contributes to this under-researched evidence base, specifically addressing the paucity of research which has investigated intrusive thoughts in young people with depression and PTSD. The result of this study and the meta-analysis indicate that intrusive thoughts and rumination are common in young people with depression, and that intrusive thoughts are also common in young people with PTSD and non-clinical controls. Results highlighted similarities between young people with depression and those with PTSD; young people in the clinical groups tended to experience the intrusive thought more frequently and for a longer duration, as well experience negative affect and negative appraisals in response to this. Furthermore, the present study adds to the theoretical knowledge base by contributing

outcomes for young people. This study may add evidence to the Response Styles theory (Nolen-Hoeksema, 1991) by the finding that in young people, rumination may be instigated by the presence of an intrusive thought and exacerbated by low mood, in PTSD as well as depression. However, longitudinal studies would be necessary to confirm the direction of the association. Furthermore, the present study suggests that assessing young people for intrusive thoughts and rumination might be helpful for clinicians to help inform their formulations and guide targets for psychological intervention, for example by normalising the experience of intrusive thoughts and teaching young people more adaptive and helpful coping strategies to manage them. The conclusions of this study do however need to be considered with caution due to the limitations documented. However, they do suggest that further research is needed to allow a greater understanding of intrusive thoughts in young people with depression and PTSD.

References:

Adams, Z. W., Sumner, J. A., Danielson, C. K., McCauley, J. L., Resnick, H. S., Grös, K., ... & Ruggiero, K. J. (2014). Prevalence and predictors of PTSD and depression among adolescent victims of the Spring 2011 tornado outbreak. *Journal of Child Psychology and Psychiatry*, *55*(9), 1047-1055.

Beck, A.T. (1963). Thinking and Depression: 1. Idiosyncratic Content and Cognitive Distortion, *Archives of General Psychiatry*, *9*, 324-33.

Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia: University of Pennsylvania Press.

Burke, C. A. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies*, *19(2),* 133-144.

Cheung, T. L., & Goodman, E. (2015). Race, ethinicity and socioeconomic status in research on child health. *Pediatrics*, *135 (1),* 225-237.

Clark, D. A., & de Silva, P. (1985). The nature of depressive and anxious, intrusive thoughts: distinct or uniform phenomena? *Behaviour Research and Therapy*, *23*, 383-393.

Clark, D. A., & Purdon, C. (1995). The assessment of unwanted intrusive thoughts: a review and critique of the literature. *Behaviour Research and Therapy, 33,* 967–976.

Field, A. (2009). *Discovering statistics using SPSS*. Sage publications, California.

Greenberg, M. T., & Harris, A. R. (2012). Nurturing mindfulness in children and youth: Current state of research. *Child Development Perspectives*, *6*(2), 161-166.

HM Government. (1998). *Data protection act*. Retrieved from http://www.legislation.gov.uk/ukpga/1998/29/pdfs/ukpga_19980029_en.pdf

Kilpatrick, D. G., Ruggiero, K. J., Acierno, R., Saunders, B. E., Resnick, H. S., & Best, C. L. (2003). Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology*, *71*(4), 692-710.

Kosters, M. P., Chinapaw, M. J. M., Zwaanswijk, M., van der Wal, M. F., & Koot, H. M. (2015). Structure, reliability, and validity of the revised child anxiety and depression scale (RCADS) in a multi-ethnic urban sample of Dutch children. *BMC Psychiatry*, *15*, DOI 10.1186/s12888-015-0509-7

Kralj, A. (2015). *Thesis Proposal - Intrusive thoughts in children and adolescents with depression and PTSD* (unpublished academic work). University of East Anglia, Norwich.

Lyneham, H. J., & Rapee, R. M. (2005). Agreement between telephone and in-person delivery of a structured interview for anxiety disorders in children. *Journal of the American Academy of Child & Adolescent Psychiatry*, *44*(3), 274-282.

Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. *Advances in Social Cognition*, *9*, 1-47.

Matthews, G., & Wells, A. (2000). Attention, automaticity and affective disorders. *Behaviour Modification, 24*, 69-93.

Michael, T., Halligan, S. L., Clark, D. M., & Ehlers, A. (2007). Rumination in posttraumatic stress disorder. *Depression and Anxiety*, *24*, 307-317.

Nolen-Hoeksema, S. (1996). Chewing the cud and other ruminations. *Ruminative thoughts*, *9*, 135-144.

Pyszczynski, T. and Greenberg, J. (1987) Self-regulatory perseveration and the depressive self-focusing style: A self-awareness theory of reactive depression, *Psychological Bulletin, 102(1),* 122–138. doi: 10.1037//0033-2909.102.1.122.

Raes, F., Griffith, J. W., Van der Gucht, K., & Williams, J. M. G. (2014). School-based prevention and reduction of depression in adolescents: A cluster-randomized controlled trial of a mindfulness group program. *Mindfulness*, *5*(5), 477-486.

Reich, W., & Earls, F. (1990). Interviewing adolescents by telephone: is it a useful methodological strategy?. *Comprehensive Psychiatry*, *31*(3), 211-215.

Salkovskis, P.M. (1985). Obsessional-compulsive problems: a cognitive behavioural analysis. *Behaviour Research and Therapy, 23*, 571–83.

Semple, R. J., Lee, J., Rosa, D., & Miller, L. F. (2010). A randomized trial of mindfulness-based cognitive therapy for children: Promoting mindful attention to enhance social-emotional resiliency in children. *Journal of Child and Family Studies*, *19*(2), 218-229.

Showers, C. J., Zeigler–Hill, V., & Limke, A. (2006). Self–Structure and Childhood Maltreatment: Successful Compartmentalization and the Struggle of Integration. *Journal of Social and Clinical Psychology*, *25*(5), 473-507.

Topper, M., Emmelkamp, P. M., Watkins, E., & Ehring, T. (2016). Prevention of anxiety disorders and depression by targeting excessive worry and rumination in adolescents and young adults: A randomized-controlled trial. *Behaviour Research and Therapy*, *90*, 123-136.

van Alderaan, J. R., Donders, A. R. T., Giommi, F., Spinhoven, P., Barendregt, P. H., & Speckens, A. E. M. (2014). The efficacy of mindfulness-based cognitive therapy in recurrent depressed patients with and without a current depressive episode: a randomized controlled trial. *Psychological Medicine*, *42*, 989-1001.

Wahl, K., Sconfeld, S., Hissbach, J., Kusel, S., Zurowski, B., Moritz, S., Hohagen, F., & Kordon, A. (2011). Differences and similarities between obsessive and ruminative

thoughts in obsessive-compulsive and depressed patients: A comparative study. *Journal of Behaviour Therapy and Experimental Psychiatry, 42,* 454-461.

Wood, J. J., Piacentini, J. C., Bergman, R. L., McCracken, J., & Barrios, V. (2002). Concurrent validity of the anxiety disorders section of the anxiety disorders interview schedule for DSM-IV: child and parent versions. *Journal of Clinical Child and Adolescent Psychology*, *31*(3), 335-342.

Appendices

Appendix A: Author guidelines (Journal of Affective Disorders)

Types of Papers

The Journal primarily publishes:

Full-Length Research Papers (up to 5000 words, excluding references and up to 6 tables/figures)

Review Articles and Meta-analyses (up to 8000 words, excluding references and up to 10 tables/figures)

Short Communications (up to 2000 words, 20 references, 2 tables/figures)

Correspondence (up to 1000 words, 10 references, 1 table/figure).

At the discretion of the accepting Editor-in-Chief, and/or based on reviewer feedback, authors may be allowed fewer or more than these guidelines.

Preparation of Manuscripts

Articles should be in English. The title page should appear as a separate sheet bearing title (without article type), author names and affiliations, and a footnote with the corresponding author's full contact information, including address, telephone and fax numbers, and e-mail address (failure to include an e-mail address can delay processing of the manuscript).

Papers should be divided into sections headed by a caption (e.g., Introduction, Methods, Results, Discussion). A structured abstract of no more than 250 words should appear on a separate page with the following headings and order: Background, Methods, Results, Limitations, Conclusions (which should contain a statement about the clinical relevance of the research). A list of three to six key words should appear under the abstract. **Authors should note that the 'limitations' section both in the discussion of the paper AND IN A STRUCTURED ABSTRACT are essential. Failure to include it may delay in processing the paper, decision making and final publication.**

Figures and Photographs

Figures and Photographs of good quality should be submitted online as a separate file. Please use a lettering that remains clearly readable even after reduction to about 66%. For every figure or photograph, a legend should be provided. All authors wishing to use illustrations already published must first obtain the permission of the author and publisher and/or copyright holders and give precise reference to the original work. This permission must include the right to publish in electronic media.

Tables

Tables should be numbered consecutively with Arabic numerals and must be cited in the text in sequence. Each table, with an appropriate brief legend, comprehensible without reference to the text, should be typed on a separate page and uploaded online. Tables should be kept as simple as possible and wherever possible a graphical representation used instead. Table titles should be complete but brief. Information other than that defining the data should be presented as footnotes.

Please refer to the generic Elsevier artwork instructions: http://authors.elsevier.com/artwork/jad.

Preparation of supplementary data

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, movies, animation sequences, high-resolution images, background datasets, sound clips and more.

Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please ensure that data is provided in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our Author Gateway at: http://www.elsevier.com/authors

Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Reference style

Text: All citations in the text should refer to:
1. *Single author:* the author's name (without initials, unless there is ambiguity) and the year of publication;
2. *Two authors:* both authors' names and the year of publication;
3. *Three or more authors:* first author's name followed by 'et al.' and the year of publication.
Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.
Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999). Kramer et al. (2010) have recently shown ....'
List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.
Examples:
Reference to a journal publication:
Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. J. Sci. Commun. 163, 51–59.
Reference to a book:
Strunk Jr., W., White, E.B., 2000. The Elements of Style, fourth ed. Longman, New York.
Reference to a chapter in an edited book:
Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith , R.Z. (Eds.), Introduction to the Electronic Age. E-Publishing Inc., New York, pp. 281–304.
Reference to a website:
Cancer Research UK, 1975. Cancer statistics reports for the UK. http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ (accessed 13.03.03).
Reference to a dataset:
[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. http://dx.doi.org/10.17632/xwj98nb39r.1.

Appendix B: Statement around Intrusive Memories thesis

This thesis was conducted as part of a larger project named “Intrusive cognitions in young people with depression and PTSD”, which includes another thesis exploring intrusive memories in young people with depression and PTSD. The intrusive memories thesis alongside the present thesis conducted the recruitment of participants jointly to allow to cover a larger area of two NHS foundation Trusts, however all data subsequent analyses and write up has been done independently.

Appendix C: Email to clinicians

Dear Clinical Team Leader,

We are writing to seek your support in recruiting young people to our research study, entitled ‘Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder’. The aim of this research project is to find out more about the intrusive thoughts and intrusive memories that young people have when they are depressed or when they have experienced a traumatic event. Please find an information sheet attached giving full details of the study.

We would like to ask you and your team to give information sheets about the research to anyone attending your service who is aged between 11 and 18 years and who has PTSD and/or depression. If the young person is interested in taking part, we will ask you to obtain verbal consent from them to pass on their contact details. We will not ask you to provide any additional input and any questions asked by young people can be directed to us. We will strictly follow Trust policies should any disclosures be made and any concerns around risk or child safeguarding will be shared with clinical teams and other professionals, as necessary.

If you are interested in supporting us, we would like to arrange to meet with you to discuss the study and arrangements for recruitment in more detail. We would be grateful if you could register your interest by return email and we will contact you to arrange a time to meet. Please do not hesitate to contact us if you have any questions.

Thank you for your time and we look forward to working with you.

Alexandra Payne and Aleksandra Kralj
Trainee Clinical Psychologists

Supervised by Dr. Richard Meiser-Stedman
Reader in Clinical Psychology

Appendix D: Information Sheets

Participant Information Sheets

Participant Information Sheet for Clinical Participants aged 11 to 12 (Version 1.2)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite you to take part in this research study. Before you decide if you would like to take part, it is important for you to know why the research is being done and what you would need to do. Please take some time to read this sheet or ask someone to read it to you so that you can decide if you want to take part or not. If you think you would like to take part, we will speak to you on the phone and answer any questions you have. You can talk to other people about the research if you would like to.

Why are we doing this research?
Sometimes we have thoughts or memories that pop into our heads without us choosing to think about them. We call these ‘intrusive thoughts’ and ‘intrusive memories’. We would like to find out more about the intrusive thoughts and memories that young people have. We would like to know how they make young people feel, what they mean to them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with distressing thoughts and memories.

Why have I been asked to take part?
We would like you to take part because you are aged between 11 and 18 and because you have posttraumatic stress disorder or you are experiencing low mood/depression.

Do I have to take part?
No, taking part in the study is voluntary. It is up to you and your parents or carers whether you take part or not. Once we know you would like to take part, we will speak to you and your parent or carer on the phone and answer any questions you have. If you decide that you do want to take part, we will ask you and your parent or carer to complete a form to say that you are happy to take part. This is called a ‘consent form’. If you do decide to take part, you can change your mind at any time without giving us a reason. If you decide that you do not want to take part, you do not have to. It is your decision whether you want to take part or not.

What will happen if I choose to take part?
Once you and your parents or carers have agreed for you to take part in the research, we will send you two sets of questions to fill in online. These questions will ask about your mood and about whether anything stressful or scary has happened in

your life. We think it will take you about 30 minutes to answer these questions. We will then speak to you on the phone or by Skype video call (depending on which you would prefer). We will first ask you some more questions about your mood. We will then ask you if you have any intrusive thoughts and memories. If you do, we will ask you to describe them and to answer some questions about them. We expect this call to take up to 40 minutes but it does not need to be done all in one go. We will give you breaks if you would like them.

Is there anything risky about taking part?
Some of the thoughts or memories that you have might be upsetting or embarrassing. If you feel upset or embarrassed by any of the questions you do not have to answer them. We will always speak to you when your parent or carer is at home so that you can talk to them at any time during or after the call.

Are there any benefits of taking part?
You will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things that I say?
The things you tell us will be kept strictly confidential. This means that what you tell us will be kept private. We will not share anything you tell us with anyone outside of the research team. You will be given a code called a participant number. This is so that we know which information is yours but no-one else would be able to tell. If you are seeing a healthcare team, we will ask you whether you would like us to talk to your healthcare worker about anything that you have told us. For example, you might want us to talk to someone in Child and Adolescent Mental Health Services [CAMHS] or the Youth Mental Health Team. **The only time we would tell other people about what you have said is if you tell us something that makes us worried that you are not safe or that someone else is not safe. We will let you know if we need to tell someone else about what you have said.**

What will happen to the results of the research?
When the study is finished, we will write about some of the results in journals (magazines about research). We will not put your name in anything we write. If you would like to hear about what we find out, please tell us and we will write you a letter to let you know.

How do I let you know that I would like to take part?
If you would like to take part, please discuss this first with your parent or carer. If you have been told about the research by a healthcare worker, please ask your healthcare worker to pass your contact details on to us. You can also email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact

the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: 07981 029282
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Participant Information Sheet for Clinical Participants aged 13 to 15 (Version 1.5)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite you to take part in this research study. Before you decide if you would like to take part, it is important for you to understand why the research is being done and what it involves. Please read the information carefully or ask someone to read it to you so that you can decide if you want to take part or not. If you are interested in taking part, we will go through the information sheet with you on the phone and answer any questions you might have. You can talk to other people about the research if you wish.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and memories that young people have. These are thoughts and memories that pop into our heads and interrupt our day to day thoughts without us choosing to think about them. We are interested in how intrusive thoughts and memories make young people feel, what sense they make of them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with intrusive thoughts and memories.

Why have I been asked to take part?
We would like you to take part because you are aged between 11 and 18 and because you either have posttraumatic stress disorder or you are experiencing low mood/depression.

Do I have to take part?
No, participation in the study is voluntary. It is up to you and your parents or carers whether you take part or not. Once we know you are interested in taking part, we will contact you and your parent or carer by telephone and answer any questions you have about the research. If you decide that you do want to take part, we will ask you and your parents or carers to complete an electronic consent form to say that you are happy to take part. If you do decide to take part, you can change your mind at any time without giving us a reason. If you decide that you do not want to take part, we will respect your decision.

What will happen if I choose to take part?
Once you and your parents or carers have agreed for you to take part in the research, we will send you two questionnaires to fill in online. These questionnaires will ask questions about your mood and about whether anything stressful or scary has happened in your life. We expect these questionnaires to take you about 15 minutes to complete. A researcher will then contact you by phone to ask you some more questions about your mood and to ask about your intrusive thoughts and memories. You will be asked whether you have any intrusive thoughts and memories

and asked to describe these. You will then be asked to answer some questions about these. The phone call should take up to 40 minutes but it does not need to be done all in one go and we will give you breaks if you need them.

Is there anything risky about taking part?
The phone call involves talking about thoughts or memories that you may find upsetting or embarrassing. If you feel upset or embarrassed by any of the questions you do not have to answer them. We will ask you and your family to choose times for the interviews when a parent or carer is at home so that you can talk to them at any time during the phone call.

Are there any benefits of taking part?
You will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things that I say?
Everything you tell us will only be shared with other people in the research team and will be kept strictly confidential. This means that what you tell us will be kept private. You will be given a code called a participant number so that we know which information is yours but no-one else would be able to tell. We will not share your personal information with anyone outside of the research team. If you are currently seeing a clinical team (for example, Child and Adolescent Mental Health Services [CAMHS] or the Youth Mental Health Team), we will ask you whether you would like anything that you have told us to be passed on to the member of staff you are seeing. **The only time we would tell other people about what you have said is if you tell us something that makes us feel worried about your safety or about somebody else's safety. We will let you know if we need to tell anyone else about what you have said.**

What will happen to the results of the research?
When the study is finished, the researchers will write about some of the results in journals (magazines about research). You will not be named in anything we write. If you would like to hear about the findings of the research, please let us know and we will write you a letter to tell you what we have found.

How do I let you know that I am interested in taking part?
If you are interested in taking part, please discuss this first with your parent or carer. If you have been told about the research by a healthcare worker, please ask your healthcare worker to pass your contact details on to us. You can also email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences,

University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: 07981 029282
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Participant Information Sheet for Clinical Participants aged 16 to 18 (Version 1.0)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite you to take part in this research study. Before you decide if you would like to take part, it is important for you to understand why the research is being done and what it involves. Please read the information carefully or ask someone to read it to you so that you can decide if you want to take part or not. If you are interested in taking part, we will go through the information sheet with you on the phone and answer any questions you might have. You can talk to other people about the research if you wish.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and memories that young people have. These are thoughts and memories that pop into our heads and interrupt our day to day thoughts without us choosing to think about them. We are interested in how intrusive thoughts and memories make young people feel, what sense they make of them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with intrusive thoughts and memories.

Why have I been asked to take part?
We would like you to take part because you are aged between 11 and 18 and because you either have posttraumatic stress disorder or you are experiencing low mood/depression.

Do I have to take part?
No, participation in the study is voluntary. It is up to you whether you take part or not. Once we know you are interested in taking part, we will contact you by telephone and answer any questions you have about the research. If you decide that you do want to take part, we will ask you to complete an electronic consent form to say that you are happy to take part. If you do decide to take part, you can change your mind at any time without giving us a reason. If you decide that you do not want to take part, we will respect your decision.

What will happen if I choose to take part?
Once you have agreed for you to take part in the research, we will send you two questionnaires to fill in online. These questionnaires will ask questions about your mood and about whether anything stressful or scary has happened in your life. We expect these questionnaires to take you about 15 minutes to complete. A researcher will then contact you by phone to ask you some more questions about your mood and to ask about your intrusive thoughts and memories. You will be asked whether you have any intrusive thoughts and memories and asked to describe these. You will then be asked to answer some questions about these. The phone call should take

up to 40 minutes but it does not need to be done all in one go and we will give you breaks if you need them.

Is there anything risky about taking part?
The phone call involves talking about thoughts or memories that you may find upsetting or embarrassing. If you feel upset or embarrassed by any of the questions you do not have to answer them. We will ask you to choose a time for the interview when someone else is at home with you so that you can talk to them at any time during the phone call.

Are there any benefits of taking part?
You will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things that I say?
Everything you tell us will only be shared with other people in the research team and will be kept strictly confidential. This means that what you tell us will be kept private. You will be given a code called a participant number so that we know which information is yours but no-one else would be able to tell. We will not share your personal information with anyone outside of the research team. If you are currently seeing a clinical team (for example, Child and Adolescent Mental Health Services [CAMHS] or the Youth Mental Health Team), we will ask you whether you would like anything that you have told us to be passed on to the member of staff you are seeing. **The only time we would tell other people about what you have said is if you tell us something that makes us feel worried about your safety or about somebody else's safety. We will let you know if we need to tell anyone else about what you have said.**

What will happen to the results of the research?
When the study is finished, the researchers will write about some of the results in journals (magazines about research). You will not be named in anything we write. If you would like to hear about the findings of the research, please let us know and we will write you a letter to tell you what we have found.

How do I let you know that I am interested in taking part?
If you are interested in taking part and you have been told about the research by a healthcare worker, please ask your healthcare worker to pass your contact details on to us. You can also email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: 07981 029282
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Participant Information Sheet for Control Participants aged 11 to 12 (Version 1.1)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite you to take part in this research study. Before you decide if you would like to take part, it is important for you to know why the research is being done and what you would need to do. Please take some time to read this sheet or ask someone to read it to you so that you can decide if you want to take part or not. If you think you would like to take part, we will speak to you on the phone and answer any questions you have. You can talk to other people about the research if you would like to.

Why are we doing this research?
Sometimes we have thoughts or memories that pop into our heads without us choosing to think about them. We call these 'intrusive thoughts' and 'intrusive memories'. We would like to find out more about the intrusive thoughts and memories that young people have. We would like to know how they make young people feel, what they mean to them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with distressing thoughts and memories.

Why have I been asked to take part?
We would like you to take part because you are aged between 11 and 18 and we would like you to be in our comparison group.

Do I have to take part?
No, taking part in the study is voluntary. It is up to you and your parents or carers whether you take part or not. Once we know you would like to take part, we will speak to you and your parent or carer on the phone and answer any questions you have. If you decide that you do want to take part, we will ask you and your parent or carer to complete a form to say that you are happy to take part. This is called a 'consent form'. If you do decide to take part, you can change your mind at any time without giving us a reason. If you decide that you do not want to take part, you do not have to. It is your decision whether you want to take part or not.

What will happen if I choose to take part?
Once you and your parents or carers have agreed for you to take part in the research, we will send you two sets of questions to fill in online. These questions will ask about your mood and about whether anything stressful or scary has happened in your life. We think it will take you about 30 minutes to answer these questions. We will then speak to you on the phone or by Skype video call (depending on which you would prefer). We will first ask you some more questions about your mood. We will then ask you if you have any intrusive thoughts and memories. If you do, we will ask

you to describe them and to answer some questions about them. We expect this call to take up to 40 minutes but it does not need to be done all in one go. We will give you breaks if you would like them.

Is there anything risky about taking part?
Some of the thoughts or memories that you have might be upsetting or embarrassing. If you feel upset or embarrassed by any of the questions you do not have to answer them. We will always speak to you when your parent or carer is at home so that you can talk to them at any time during or after the call.

Are there any benefits of taking part?
You will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things that I say?
The things you tell us will be kept strictly confidential. This means that what you tell us will be kept private. We will not share anything you tell us with anyone outside of the research team. You will be given a code called a participant number. This is so that we know which information is yours but no-one else would be able to tell. **The only time we would tell other people about what you have said is if you tell us something that makes us worried that you are not safe or that someone else is not safe. We will let you know if we need to tell someone else about what you have said.**

What will happen to the results of the research?
When the study is finished, we will write about some of the results in journals (magazines about research). We will not put your name in anything we write. If you would like to hear about what we find out, please tell us and we will write you a letter to let you know.

How do I let you know that I would like to take part?
If you would like to take part, please discuss this first with your parent or carer. If you have been told about the research via your school, please follow the instructions in the email you were sent to leave your contact details online. You can also email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: TBC
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Participant Information Sheet for Control Participants aged 13 to 15 (Version 1.1)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite you to take part in this research study. Before you decide if you would like to take part, it is important for you to understand why the research is being done and what it involves. Please read the information carefully or ask someone to read it to you so that you can decide if you want to take part or not. If you are interested in taking part, we will go through the information sheet with you on the phone and answer any questions you might have. You can talk to other people about the research if you wish.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and memories that young people have. These are thoughts and memories that pop into our heads and interrupt our day to day thoughts without us choosing to think about them. We are interested in how intrusive thoughts and memories make young people feel, what sense they make of them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with intrusive thoughts and memories.

Why have I been asked to take part?
We would like you to take part because you are aged between 11 and 18 and because you don't have any mental health difficulties and we would like you to be in our comparison group.

Do I have to take part?
No, participation in the study is voluntary. It is up to you and your parents or carers whether you take part or not. Once we know you are interested in taking part, we will contact you and your parent or carer by telephone and answer any questions you have about the research. If you decide that you do want to take part, we will ask you and your parents or carers to complete an electronic consent form to say that you are happy to take part. If you do decide to take part, you can change your mind at any time without giving us a reason. If you decide that you do not want to take part, we will respect your decision.

What will happen if I choose to take part?
Once you and your parents or carers have agreed for you to take part in the research, we will send you two questionnaires to fill in online. These questionnaires will ask questions about your mood and about whether anything stressful or scary has happened in your life. We expect these questionnaires to take you about 15 minutes to complete. A researcher will then contact you by phone to ask you some more questions about your mood and to ask about your intrusive thoughts and memories. You will be asked whether you have any intrusive thoughts and memories and asked to describe these. You will then be asked to answer some questions

about these. The phone call should take up to 40 minutes but it does not need to be done all in one go and we will give you breaks if you need them.

Is there anything risky about taking part?
The phone call involves talking about thoughts or memories that you may find upsetting or embarrassing. If you feel upset or embarrassed by any of the questions you do not have to answer them. We will ask you and your family to choose times for the interviews when a parent or carer is at home so that you can talk to them at any time during the phone call.

Are there any benefits of taking part?
You will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things that I say?
Everything you tell us will only be shared with other people in the research team and will be kept strictly confidential. This means that what you tell us will be kept private. You will be given a code called a participant number so that we know which information is yours but no-one else would be able to tell. We will not share your personal information with anyone outside of the research team. **The only time we would tell other people about what you have said is if you tell us something that makes us feel worried about your safety or about somebody else's safety. We will let you know if we need to tell anyone else about what you have said.**

What will happen to the results of the research?
When the study is finished, the researchers will write about some of the results in journals (magazines about research). You will not be named in anything we write. If you would like to hear about the findings of the research, please let us know and we will write you a letter to tell you what we have found.

How do I let you know that I am interested in taking part?
If you are interested in taking part, please discuss this first with your parent or carer. If you have been told about the research via your school, please follow the instructions in the email you were sent to leave your contact details online. You can also email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: TBC
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Participant Information Sheet for Control Participants aged 16 to 18 (Version 1.0)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite you to take part in this research study. Before you decide if you would like to take part, it is important for you to understand why the research is being done and what it involves. Please read the information carefully or ask someone to read it to you so that you can decide if you want to take part or not. If you are interested in taking part, we will go through the information sheet with you on the phone and answer any questions you might have. You can talk to other people about the research if you wish.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and memories that young people have. These are thoughts and memories that pop into our heads and interrupt our day to day thoughts without us choosing to think about them. We are interested in how intrusive thoughts and memories make young people feel, what sense they make of them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with intrusive thoughts and memories.

Why have I been asked to take part?
We would like you to take part because you are aged between 11 and 18 and because you don't have any mental health difficulties and we would like you to be in our comparison group.

Do I have to take part?
No, participation in the study is voluntary. It is up to you whether you take part or not. Once we know you are interested in taking part, we will contact you by telephone and answer any questions you have about the research. If you decide that you do want to take part, we will ask you to complete an electronic consent form to say that you are happy to take part. If you do decide to take part, you can change your mind at any time without giving us a reason. If you decide that you do not want to take part, we will respect your decision.

What will happen if I choose to take part?
Once you and have agreed for you to take part in the research, we will send you two questionnaires to fill in online. These questionnaires will ask questions about your mood and about whether anything stressful or scary has happened in your life. We expect these questionnaires to take you about 15 minutes to complete. A researcher will then contact you by phone to ask you some more questions about your mood and to ask about your intrusive thoughts and memories. You will be asked whether you have any intrusive thoughts and memories and asked to describe these. You will then be asked to answer some questions about these. The phone call should take

up to 40 minutes but it does not need to be done all in one go and we will give you breaks if you need them.

Is there anything risky about taking part?
The phone call involves talking about thoughts or memories that you may find upsetting or embarrassing. If you feel upset or embarrassed by any of the questions you do not have to answer them. We will ask you to choose a time for the interviews when someone else is at home with you so that you can talk to them at any time during the phone call.

Are there any benefits of taking part?
You will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things that I say?
Everything you tell us will only be shared with other people in the research team and will be kept strictly confidential. This means that what you tell us will be kept private. You will be given a code called a participant number so that we know which information is yours but no-one else would be able to tell. We will not share your personal information with anyone outside of the research team. **The only time we would tell other people about what you have said is if you tell us something that makes us feel worried about your safety or about somebody else's safety. We will let you know if we need to tell anyone else about what you have said.**

What will happen to the results of the research?
When the study is finished, the researchers will write about some of the results in journals (magazines about research). You will not be named in anything we write. If you would like to hear about the findings of the research, please let us know and we will write you a letter to tell you what we have found.

How do I let you know that I am interested in taking part?
If you are interested in taking part and you have been told about the research via your school, please follow the instructions in the email you were sent to leave your contact details online. You can also email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: TBC
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Parent and Carer Information Sheet (Version 1.5)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

We would like to invite your child to take part in this research study. Before you decide if you are happy for your child to take part, it is important for you to understand why the research is being done and what it involves. Please take the time to read this information sheet and discuss it with others if you wish. Thank you for reading this.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and memories that young people have. These are thoughts and memories that pop into our heads without us choosing to think about them. We are interested in how intrusive thoughts and memories make young people feel, what sense they make of them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with intrusive thoughts and memories.

Why has my child been asked to take part?
We are inviting children to take part who are aged between 11 and 18 and who either have posttraumatic stress disorder or they are experiencing low mood/depression **or** who don't have any mental health difficulties and who we would like to be in our comparison group.

Does my child have to take part?
No, participation in the study is voluntary. It is up to you and your child whether they wish to take part or not. Once we know your child is interested in taking part, we will contact you by telephone and answer any questions you have about the research. If you and your child decide to take part, we will ask you both to complete an electronic consent form. You can change your mind at any time and withdraw from the study without giving us a reason. If you and your child decide not to take part, we will respect your decision.

What will happen if my child chooses to take part?
We will send your child two questionnaires to fill in online. We expect these questionnaires to take about 15 minutes to complete. A researcher will then contact you by either phone or Skype video call to interview your child about their intrusive

thoughts and memories. This interview should take up to 40 minutes but it does not need to be done all in one go and breaks will be offered.

What kind of questions will you be asking my child?
In the first online questionnaire, your child will be asked questions about their mood. In the second online questionnaire, your child will be asked whether they have ever experienced any of a list of stressful or scary events (yes or no responses). This will include accidents, physical and sexual abuse, and losing a loved one. In the phone interview, we will ask questions to check symptoms of depression and PTSD. Your child will then be asked to describe an intrusive thought and memory and asked a series of questions about these experiences, how these make them feel and how they cope with them.

Is there anything risky about taking part?
We believe that it is unlikely that your child will be distressed by taking part in this research. However, the phone call involves talking about thoughts or memories that your child may find upsetting or embarrassing. If your child feels upset or embarrassed by any of the questions they do not have to answer them. We will ask you to be at home during the interview in case your child feels upset. We will also speak to you at the end of the interview to talk through concerns, if you have any.

Are there any benefits of taking part?
Your child will be sent a £5 Amazon voucher to say thank you for taking part.

Who will you tell about the things my child says?
All information will be kept strictly confidential within the research team and stored anonymously. Your child will be given a participant number which we will use to identify their information. If your child is currently seeing a clinical team (for example, Child and Adolescent Mental Health Services [CAMHS] or the Youth Mental Health Team), we will ask you and your child whether you would like anything discussed to be passed on to your clinician. **The only time we would share what your child has said is if they tell us something that makes us feel worried about their safety or about somebody else's safety. We will let you and your child know if we need to tell anyone else about what your child has said.**

Is the study safe?
Yes. This study has been reviewed and given a favourable opinion by Solihull Research Ethics Committee.

What will happen to the results of the research?
When the study is finished, the researchers will write about some of the results in scientific journals. Your child will not be named in anything we write. If you would like to hear about the findings of the research, please let us know and we will write to you with the results.

How do I let you know that my child is interested in taking part?
If you and your child decide to take part and you have been told about the study by a healthcare worker, please ask your healthcare worker to pass your contact details on to us. If you have been told about the study via your child's school, please follow the instructions in the email sent to your child to leave your contact details online. Alternatively, please email us at the addresses provided below.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: TBC
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for thinking about taking part in this research!

Clinician Information Sheet (Version 1.4)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

Thank you for offering to help with this research study. Below is some information about the study. Should you have any questions about what you have read, please do not hesitate to contact us: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and intrusive memories that young people have when they are depressed or when they have experienced a traumatic event. We are interested in how intrusions make young people feel, what sense they make of them and how they cope with them. We hope that by gaining a better understanding of young people's experience of intrusions we can evaluate whether they play a role in maintaining symptoms of PTSD and depression and whether intrusions may be an important target in cognitive therapy.

Who are we looking for to take part?
We are looking to recruit young people age 11 to 18 who have a diagnosis of PTSD and/or depression and who have a good understanding of English. We cannot include children who have obsessive compulsive disorder (OCD), substance misuse or dependence, current or previous experience of psychotic disorders, neurodevelopmental disorder or learning difficulties. We will also be recruiting a control sample from secondary schools.

How will young people get involved?
We would like to ask you, as a clinician working in local mental health services, to give information sheets about the research to anyone attending your service who is aged between 11 and 18 years and who has PTSD and/or depression. There will be one information sheet for young people and one for their parents or carers for those aged 15 years or younger. If the young person is interested in taking part, we will ask you to obtain verbal consent from them to pass on their contact details.

Do the young people you refer have to take part?
No, participation in the study is voluntary. We will respect their decision of they do not wish to take part.

What happens once the young person is in the study?
We will contact the young person and their parent or carer by telephone and answer any questions they have about the research. We will then ask them to sign an electronic consent form. Once consent is obtained, young people will be asked to complete two questionnaires online and we will then interview the young person over the phone or via Skype about their intrusive thoughts and intrusive memories.

What will happen in the interview?
We expect the interview to take up to 40 minutes. In the first half of interview, we will ask questions to confirm the diagnosis of PTSD or depression. In the second half of the interview, we will ask about the young person's experience of intrusive thoughts and intrusive memories.

Are there any risks of young people taking part?
The interview involves talking about thoughts or memories that may be upsetting or embarrassing. If the child feels upset or embarrassed by any of the questions they do not have to answer them. We will ask young people aged 15 years or younger to choose times for the interviews when a parent or carer is at home so that they can talk to them if they feel upset at any time during the interviews. We will ask participants aged 16 to 18 years to choose a time when they will not be at home alone.

Are there any benefits of young people taking part?
We often find that participants like being involved in research, as it can be satisfying for them to know that they are helping add to the knowledge base for people with similar problems as them. Following the interview, the young person will be sent a £5 Amazon voucher to thank them for taking part.

What will happen if the researchers have any concerns about risk or if the young person makes a disclosure that gives the researchers concern for someone's safety?
On the participant and parent information sheets and at the start of the interview we will explain the confidentiality agreement. We will strictly follow Trust policies should any disclosures be made or if we become aware that there is a risk of harm to the young person or to someone else. Any concerns around risk or child safeguarding will be shared with clinical teams and other professionals, as necessary. We will also ask the young person at the end of the interview whether there is anything that they have shared with us that they would like us to pass on to their clinical team.

Is the study safe?
Yes. This study has been reviewed and given a favourable opinion by Solihull Research Ethics Committee.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information
If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: TBC
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for reading this information sheet. We appreciate your help with our research study. Please do not hesitate to contact us if you would like to discuss any of the above.

Teacher Information Sheet (Version 1.4)

Study Title: Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

Researchers: Aleksandra Kralj (Trainee Clinical Psychologist, University of East Anglia [UEA]), Alexandra Payne (Trainee Clinical Psychologist, UEA) and Dr. Richard Meiser-Stedman (Reader in Clinical Psychology, UEA).

Thank you for offering to help with this research study. Below is some information about the study. Should you have any questions about what you have read, please do not hesitate to contact us: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk.

What is the aim of this research?
The aim of this research project is to find out more about the intrusive thoughts and intrusive memories that young people have when they are depressed or when they have experienced a traumatic event. Intrusions are thoughts or memories that pop into our heads without us choosing to think about them. They interrupt conscious thought and can be difficult to control. We are interested in how intrusions make young people feel, what sense they make of them and how they cope with them. We hope that by gaining a better understanding of young people's experience of intrusions we can evaluate whether they play a role in maintaining symptoms of PTSD and depression and whether intrusions may be an important target in cognitive therapy.

Who are we looking for to take part?
We are looking to recruit young people age 11 to 18 who have no mental health difficulties and who have a good understanding of English. We cannot include children who have obsessive compulsive disorder (OCD), substance misuse or dependence, current or previous experience of psychotic disorders, neurodevelopmental disorder or learning difficulties. We will also be recruiting young people with PTSD and depression from mental health services.

How will young people get involved?
We would like to ask you, as teachers, to give information sheets about the research to pupils aged between 11 and 18 years via your internal school email system. There will be one information sheet for young people and one for their parents or carers for those aged 15 years or younger. If the young person is interested in taking part, they will be able to leave their contact details online via the email sent out or they may contact us directly using the email address given on the information sheets.

Do your pupils have to take part?

No, participation in the study is voluntary. We will respect their decision of they do not wish to take part.

What happens once the young person is in the study?
We will contact the young person and their parent or carer by telephone and answer any questions they have about the research. We will then ask them to sign an electronic consent form. Once consent is obtained, young people will be asked to complete two questionnaires online and we will then interview the young person over the phone or via Skype about their intrusive thoughts and intrusive memories.

What will happen in the interview?
We expect the interview to take up to 40 minutes. In the first half of interview, we will ask questions to confirm that the young person does not have PTSD or depression. In the second half of the interview, we will ask about the young person's experience of intrusive thoughts and intrusive memories.

Are there any risks of young people taking part?
The interview involves talking about thoughts or memories that may be upsetting or embarrassing. If the child feels upset or embarrassed by any of the questions they do not have to answer them. We will ask young people aged 15 years and younger to choose times for the interviews when a parent or carer is at home so that they can talk to them if they feel upset at any time during the interviews. We will ask young people aged 16 to 18 years to choose a time when they will not be at home alone.

Are there any benefits of young people taking part?
Following the interview, the young person will be sent a £5 Amazon voucher to thank them for taking part.

What will happen if the researchers have any concerns about risk or if the young person makes a disclosure that gives the researchers concern for someone's safety?
On the participant and parent information sheets and at the start of the interview we will explain the confidentiality agreement. We will strictly follow school policies should any disclosures be made or if we become aware that there is a risk of harm to the young person or to someone else. Any concerns around risk or child safeguarding will be shared with other professionals, as necessary.

Is the study safe?
Yes. This study has been reviewed and given a favourable opinion by Solihull Research Ethics Committee.

What if there is a problem?
If you have any problems with the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology,

Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

Contact details for further information

If you want to find out more about the study or have any questions, please check with your parent or carer that they are happy for you to contact us.

Aleksandra Kralj and Alexandra Payne
Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ
Telephone: TBC
Email: a.kralj@uea.ac.uk or Alexandra.payne@uea.ac.uk

Thank you for reading this information sheet. We appreciate your help with our research study. Please do not hesitate to contact us if you would like to discuss any of the above.

Appendix E: Email to schools

Dear Headteacher,

We are writing to seek your support in recruiting young people to our research study, entitled ‘Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder’. The aim of this research project is to find out more about the intrusive thoughts and intrusive memories that young people have when they are depressed or when they have experienced a traumatic event. Please find an information sheet attached giving full details of the study.

We would like to ask you to send information sheets about the research to pupils aged between 11 and 18 years via your internal school email system. We will not ask you to provide any additional input and any questions asked by pupils can be directed to us. We will strictly follow school policies should any disclosures be made and any concerns around risk or child safeguarding will be shared with other professionals, as necessary.

If you are interested in supporting us, we would like to meet with you to discuss the study and arrangements for recruitment in more detail. We would be grateful if you could register your interest by return email and we will contact you to arrange a time to meet. Please do not hesitate to contact us if you have any questions.

Thank you for your time and we look forward to working with you.

Alexandra Payne and Aleksandra Kralj
Trainee Clinical Psychologists

Supervised by Dr. Richard Meiser-Stedman
Reader in Clinical Psychology

Appendix F: Posters

11–16 year olds needed!

We are doing research to help us understand thoughts and memories that young people might have.

Who?

You can take part if you are aged between 11 and 16

What?

The study involves two online questionnaires and a phone interview lasting up to 40 minutes

How?

Email your name, date of birth and phone number to **a.kralj@uea.ac.uk**

Anything else?

We will give you a £5 Amazon voucher to say thank you!

The study is being run by Aleksandra Kralj and Alexandra Payne, Trainee Clinical Psychologists at the University of East Anglia. The study has received ethical approval.

CPFT Cambridgeshire and Peterborough NHS Foundation Trust

Norfolk and Suffolk NHS Foundation Trust

Study on intrusive thoughts and memories
Send your name, date of birth and contact number to **a.kralj@uea.ac.uk**

Study on intrusive thoughts and memories
Send your name, date of birth and contact number to **a.kralj@uea.ac.uk**

Study on intrusive thoughts and memories
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Study on intrusive thoughts and memories
Send your name, date of birth and contact number to **a.kralj@uea.ac.uk**

11–16 year olds needed!

We are doing research to help us understand thoughts and memories that young people might have when they are feeling low or after a traumatic event.

Who?

You can take part if you are aged between 11 and 16, and have **depression/low mood** or **post-traumatic stress**

What?

The study involves two online questionnaires and a phone interview lasting up to 40 minutes

How?

Email your name, date of birth and phone number to **a.kralj@uea.ac.uk**

Anything else?

We will give you a £5 Amazon voucher to say thank you!

The study is being run by Aleksandra Kralj and Alexandra Payne, Trainee Clinical Psychologists at the University of East Anglia. The study has received ethical approval.

CPFT Cambridgeshire and Peterborough NHS Foundation Trust

Norfolk and Suffolk NHS Foundation Trust

Study on intrusive thoughts and memories
Send your name, date of birth and contact number to **a.kralj@uea.ac.uk**

11–18 year olds needed!

We are doing research to help us understand thoughts and memories that young people might have when they are feeling low or after a traumatic event.

Who?

You can take part if you are aged between 11 and 18.
We are looking for three groups of young people:

1) Young people with depression or who are experiencing low mood
2) Young people who have Posttraumatic Stress Disorder (PTSD) or who are experiencing stress after a traumatic event
3) Young people who do not have difficulties with low mood or posttraumatic stress and who would like to be in our 'comparison' group – **aged 17 or 18 only**.

What?

The study involves two online questionnaires and a phone interview lasting up to 40 minutes

How?

Email your name, date of birth and phone number to **a.kralj@uea.ac.uk** or **alexandra.payne@uea.ac.uk**

The study is being run by Aleksandra Kralj and Alexandra Payne, Trainee Clinical Psychologists at the University of East Anglia. The study has received ethical approval.

University of East Anglia

Study on intrusive thoughts and memories
Send your name, date of birth and contact number to **a.kralj@uea.ac.uk**

11–18 year olds needed!

We are doing research to help us understand thoughts and memories that young people might have when they are feeling low or after a traumatic event.

Who?

You can take part if you are aged between 11 and 18, and have **depression/low mood** or **post-traumatic stress**

What?

The study involves two online questionnaires and a phone interview lasting up to 40 minutes

How?

Email your name, date of birth and phone number to **a.kralj@uea.ac.uk**

Anything else?

We will give you a £5 Amazon voucher to say thank you!

The study is being run by Aleksandra Kralj and Alexandra Payne, Trainee Clinical Psychologists at the University of East Anglia. The study has received ethical approval.

CPFT Cambridgeshire and Peterborough NHS Foundation Trust

Norfolk and Suffolk NHS Foundation Trust

Study on intrusive thoughts and memories
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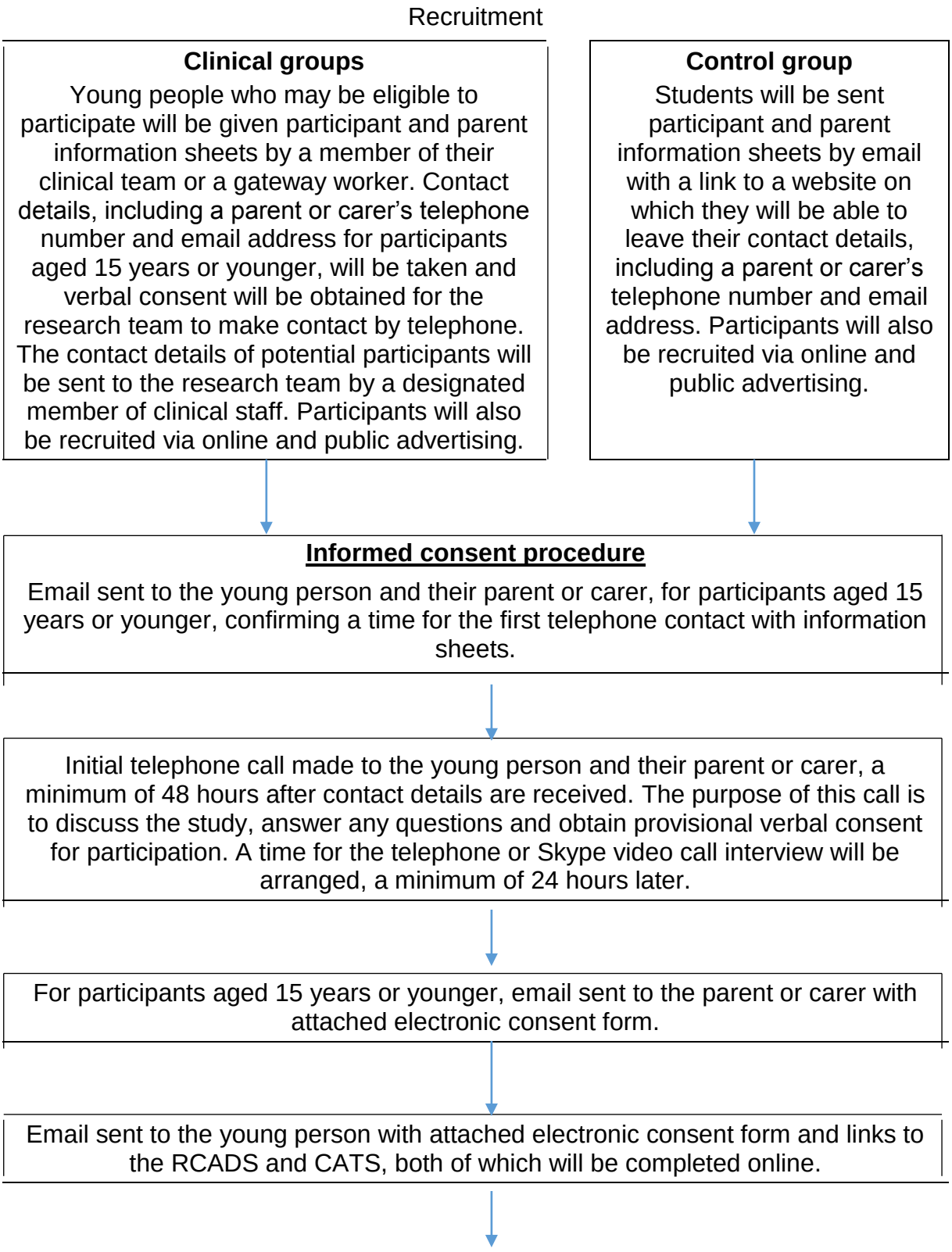
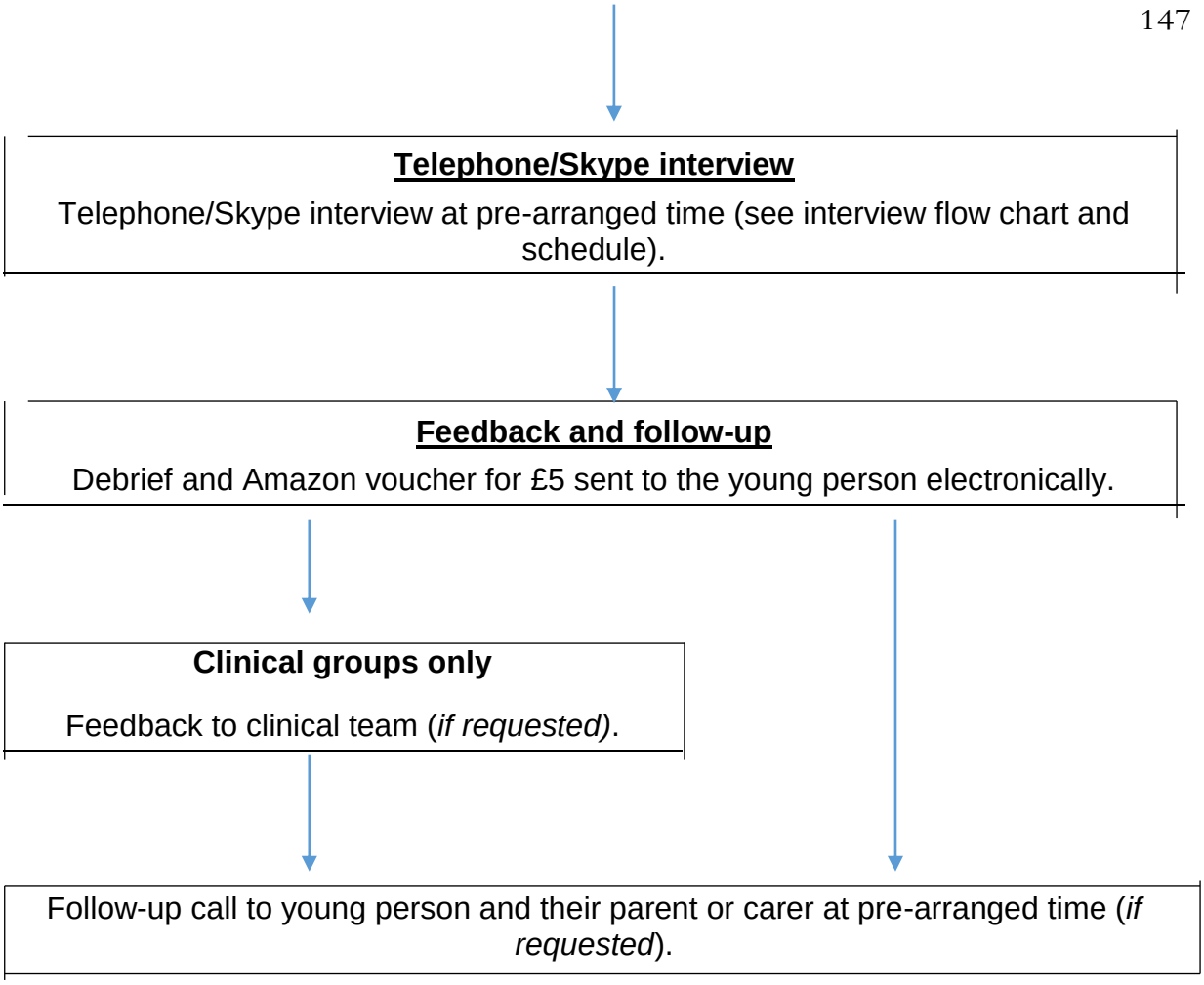
Study on intrusive thoughts and memories
Send your name, date of birth and contact number to **a.kralj@uea.ac.uk**

Appendix G: Procedure flow chart




Telephone/Skype interview
Telephone/Skype interview at pre-arranged time (see interview flow chart and schedule).
Feedback and follow-up
Debrief and Amazon voucher for £5 sent to the young person electronically.
Clinical groups only
Feedback to clinical team (*if requested)*.
Follow-up call to young person and their parent or carer at pre-arranged time (*if requested*).

Appendix H: Intrusive thoughts interview schedule

"We all have thoughts about things. Thoughts are things we say to ourselves without saying them out loud. Other people can't tell what you're thinking unless you tell them. Because we have thoughts all the time, we usually don't pay attention to them. They just come to us automatically. For example, if you're at school and someone you like doesn't say hello back to you, you might think "they didn't hear me" or "they don't like me", or you might think something completely different! Those are examples of thoughts. What thoughts might you have if you find out you have a test at school the next day?")

Definition and Identification of an Intrusive Thought

Now we're going to talk about intrusive thoughts. Intrusive thoughts are repetitive thoughts that pop into your head without you choosing to think about them. They may nice or unpleasant thoughts, pictures or ideas that get in the way of your day-to-day activities and can feel difficult to control. Today, we are interested only in unpleasant intrusive thoughts. In this section we're not going to talk about memories of things that have happened to you in the past. Some of these thoughts, pictures or ideas might be hard to talk about or embarrassing but its important that you're as honest as possible. Here's an example. Harry finds that the thought 'I'm rubbish' often pops into his head. When he has this thought, Harry finds it difficult to stop thinking about it. Sometimes he also thinks of things he might do that would make other people think he is rubbish, like missing a goal when he is playing football or getting a bad grade at school. When Harry has the thought 'I'm rubbish', he finds it difficult to concentrate on what he is doing.

'Do you know what I mean by intrusive thoughts?'

If no, additional examples will be given.

‘*Now I’m going to ask you some questions about intrusive thoughts. I would like to remind you that taking part in this research study is voluntary. This means that you do not have to answer all of the questions if you would prefer not to. Please tell me if I ask you a question that you do not want to answer and I will move on to the next question.’*

‘Do you have any intrusive thoughts?’

If no, *‘do you have any thoughts that pop into your without you wanting to think about them?’*

If no, terminate intrusive thoughts interview.

If yes, *‘can you describe your intrusive thought to me?’*

‘Okay, now I’m going to ask you some questions about your thought. Please answer the questions about the thought you have just described to me.’

Intrusive Thought Characteristics

Frequency. *‘How often does the thought pop into your head? Choose from once a week or less, several times a week, every day or more than once a day.’*

Duration. *‘How long does the thought stay in your head for? Choose from a few seconds, a few minutes, up to an hour or more than an hour.’*

Intrusive Thought Quality and Associated Emotions

Associated emotions. *‘Please rate on a scale from 0 (not at all) to 100 (very much), how strongly you link each of these emotions with your thought.’*

‘Anger?’

‘Sadness?’

‘Fear?’

‘Guilt?’

‘Shame?’

'Anxiety?'

'Are there any other emotions that you link with your thought?'

If yes, *'please rate the strength of this emotion on the same scale.'* Repeated for all emotions identified.

'Now I'd like you to rate on the same scale, from 0 (not at all) to 100 (very much), how distressing you find your thought.'

Intrusive Thought Appraisal

'I'd like you to tell me how strongly you believe that each of these statements is true for you and your intrusive thought. Please rate them on a scale from 0 (not true at all) to 100 (absolutely true).'

'I must gain control of this thought.'

'I should be able to get this thought out of my mind.'

'I should not be having this thought.'

'Having this thought means there is something wrong with me.'

'Having this thought means I'm going crazy.'

'Having this thought means I can't cope.'

'Having this thought means nothing, it's a normal reaction.'

'Because I can't control this thought, I am a weak person.'

'Having this thought means that I'm not good enough.'

'Having this thought means that I'm weird or not normal.'

Thought Control Strategies

'I'm going to describe some things that people do to try to control their intrusive thoughts. I'd like you to tell me whether each strategy is something that you do. You can answer often, sometimes or never. If you do use the strategy, I will ask

you to rate how much better it makes you feel, on a scale from 0 (I don't feel better at all) to 100 (I feel completely better).'

Rumination. *'I keep going over the thought in my mind over and over again.'*

Suppression. *'I try to stop the thought or push it out of my mind.'*

Distraction. *'I try to do other things or think about other things to stop myself from thinking about the thought.'*

Replacement. *'I try to think about something nice instead.'*

If they speak about a thought first, at the end of the interview they will be asked, *"Do you ever have pictures that pop into your mind too?".*

If they first answer about an image, they will be *asked "Do you ever have thoughts that pop into your mind too?".*

No further questions will be asked if they answer yes.

Appendix I: Intrusive memories interview

Definition and Identification of an Intrusive Memory

'Now we're going to talk about intrusive memories. Intrusive memories are memories about something that has happened to you sometime in the past that pop into your head without you choosing to think about them. Sometimes intrusive memories get in the way of your day to day activities and they can be difficult to control. Intrusive memories can be nice memories or unpleasant memories. Today, we are interested only in unpleasant intrusive memories. Some memories are in pictures, some are in sounds, some are in words and some are more like feelings, or a mixture. Here's an example. A year ago, Ashley was hit by a car when he was crossing the road. He has an intrusive memory about the car driving towards him. He remembers the colour of the car and can see the street around him. He can hear the tyres squealing and feels his stomach flip. This memory pops into Ashley's head several times a week and sometimes distracts him from his school work.'

'Do you know what I mean by intrusive memories?'

If no, additional examples will be given.

'*Now I'm going to ask you some questions about intrusive memories. I would like to remind you that taking part in this research study is voluntary. This means that you do not have to answer all of the questions if you would prefer not to. Please tell me if I ask you a question that you do not want to answer and I will move on to the next question.'*

'Do you experience intrusive memories?'

If no, *'do you have any memories that pop into your head about something upsetting or distressing that happened to you some time in the past?'*

If no, terminate intrusive memories interview.

If yes, *'can you describe your intrusive memory to me?'*

'Okay, now I'm going to ask you some questions about your memory. Please answer the questions about the memory you have just described to me.'

Intrusive Memory Characteristics

Frequency. *'How often does the memory pop into your head? Choose from once a week or less, several times a week, every day or more than once a day.'*

Duration. *'How long does the memory stay in your head for? Choose from a few seconds, a few minutes, up to an hour or more than an hour.'*

Intrusiveness. Children's Revised Impact of Events Scale – Intrusiveness subscale.

Intrusive Memory Quality and Associated Emotions

Sensory quality. Trauma Memory Quality Questionnaire (Appendix O)

Associated emotions. *'Please rate on a scale from 0 (not at all) to 100 (very much), how strongly you link each of these emotions with your memory.'*

'Anger?'

'Sadness?'

'Fear?'

'Guilt?'

'Helplessness?'

'Shame?'

'Anxiety?'

'Are there any other emotions that you link with your memory?'

If yes, *'please rate the strength of this emotion on the same scale.'* Repeated for all emotions identified.

'Now I'd like you to rate on the same scale, from 0 (not at all) to 100 (very much), how distressing you find your memory.'

Associated Physical Sensations, Feelings of Reliving and Dissociation

Associated physical sensations. *'Sometimes, when intrusive memories pop into our heads, we have physical feelings in our bodies. Some examples are sweating, shaking, heart beating fast, feeling sick, feeling very hot or very cold, headaches or butterflies in the stomach. Do you have any physical feelings when your memory pops into your head?'*

Feelings of reliving. *'When your memory pops into your head, does it feel as though it is something that is happening again now or does it feel like you're looking back at something that happened in the past?'*

Dissociation. *'I'd like you to answer true or false to the following sentences.'*

'When the memory pops into my head things seem unreal to me, as if I am in a dream or watching a film.'

'When the memory pops into my head I feel different and far away from other people, even if people are with me.'

'When the memory pops into my head I feel as though I am floating outside of my body or looking at myself from a distance.'

Intrusive Memory Appraisal

'I'd like you to tell me how strongly you believe that each of these statements is true for you and your intrusive memory. Please rate them on a scale from 0 (not true at all) to 100 (absolutely true).'

'I must gain control of this memory.'

'I should be able to get this memory out of my mind.'

'I should not be having this memory.'

'Having this memory means there is something wrong with me.'

'Having this memory means I'm going crazy.'

'Having this memory means I can't cope.'

'Having this memory means nothing, it's a normal reaction.'

'Because I can't control this memory, I am a weak person.'

'Having this memory means that I'm not good enough.'

'Having this memory means that I'm weird or not normal.'

Thought Control Strategies

'I'm going to describe some things that people do to try to control their intrusive memories. I'd like you to tell me whether each strategy is something that you do. You can answer often, sometimes or never. If you do use the strategy, I will ask you to rate how much better it makes you feel, on a scale from 0 (I don't feel better at all) to 100 (I feel completely better).'

Rumination. *'I keep going over the memory in my mind over and over again.'*

Suppression. *'I try to stop the memory or push it out of my mind.'*

Distraction. *'I try to do other things or think about other things to stop myself from thinking about the memory.'*

Replacement. *'I try to think about something nice instead.'*

Appendix J: Standardised debrief email

Study title: Intrusive cognitions in young people with depression and post-traumatic stress disorder (PTSD).

Thank you for taking part as a research participant in this study looking at intrusive thoughts and memories in young people with depression and PTSD.

The aim of this research project is to find out more about the intrusive thoughts and memories that young people have. These are thoughts and memories that pop into our heads and interrupt our day to day thoughts without us choosing to think about them. We are interested in how intrusive thoughts and memories make young people feel, what sense they make of them and how they cope with them. We hope that this study could help us to understand intrusive thoughts and memories a bit better and think about how we can help young people who are struggling with intrusive thoughts and memories.

If you have any questions or want to tell us how you found the study, please feel free to contact us. Our contact details are: Aleksandra Kralj (a.kralj@uea.ac.uk) and Alexandra Payne (Alexandra.payne@uea.ac.uk), Department of Clinical Psychology, University of East Anglia, Norwich, NR4 7TJ.

If you weren't happy with anything about the study and would like to tell someone else about it, please contact: Dr. Richard Meiser-Stedman, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593601 or e-mail: r.meiser-stedman@uea.ac.uk. If you would like to make a complaint about the study, please contact: Professor Ken Laidlaw, Department of Clinical Psychology, Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, tel: 01603 593600 or e-mail: k.laidlaw@uea.ac.uk. You can also contact the Associate Dean for Research in the Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, NR4 7TJ, tel: 01603 456161 or the Patient Advice and Liaison Service (PALS) team on free phone: 0800 279 2535.

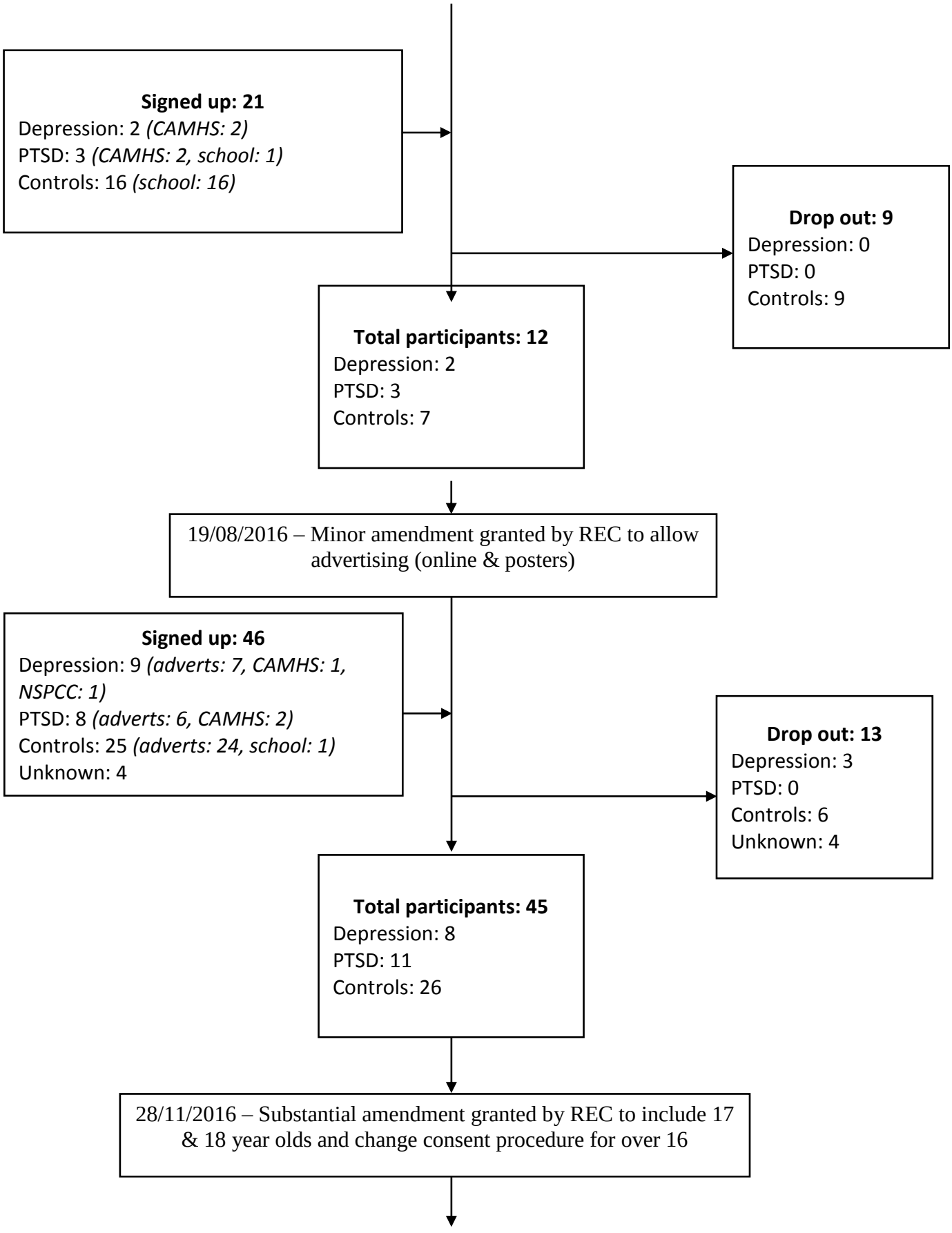
If you have been upset by taking part in the study, we encourage you to contact us directly, speak to your GP or your clinical team (if you have one). Alternatively, you can contact Young Minds on 020 7089 5050 or visit their website www.youngminds.org.uk.

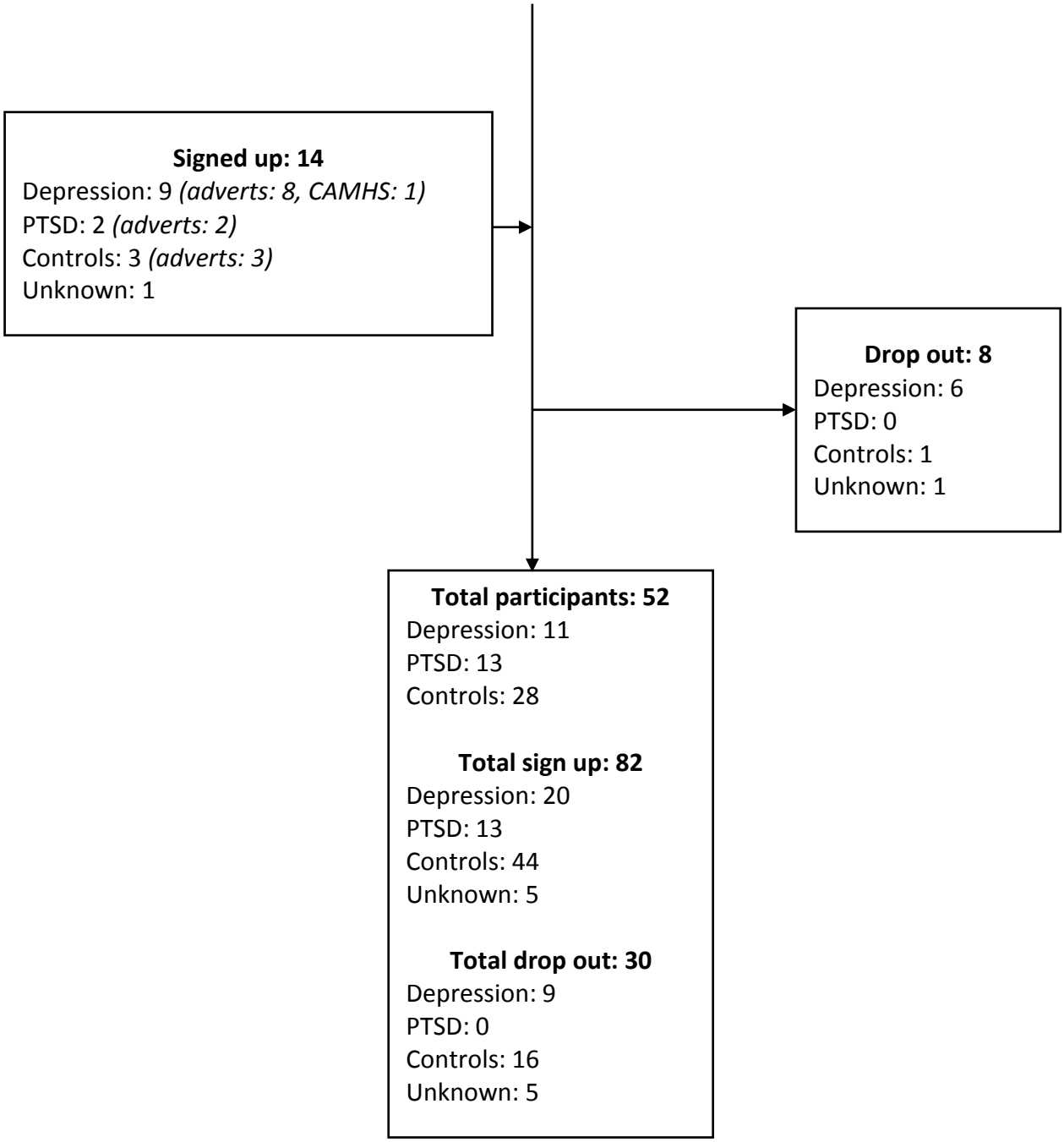
If you want to hear about what we found from the study when it is finished, let us know which email address you would like us to send the findings to.

To thank you for helping us with our research, we would like to give you a £5 Amazon voucher.

Thank you again for taking part!

Appendix K: Recruitment efforts and procedure





Note: For participants to have been logged as "*signed up*" means that they registered their interest in the study. This was either done by giving consent to their CAMHS worker to pass on their details and to be contacted by the researchers, or by emailing their details to the email address advertised on the posters (and emails for the non-clinical group) and online.

Recruiting young people to the study was a significant obstacle for the study. Two researchers (AK & AP) were involved in the recruitment effort, covering nine clinical teams across two large NHS foundation Trusts. Initial visits to teams were conducted to gain consent to recruit from the clinical lead. Following this consent, the researchers aimed to attend a weekly clinical meeting to discuss the research with the multidisciplinary team, answer any questions or concerns they may have had and distribute information sheets (and later, once the amendment was in place, posters). Researchers asked to identify one key person per team to email weekly or fortnightly as requested to check whether any suitable young people had been identified for the study. Where possible, researchers aimed to briefly visit the clinical teams to remind them of the study and speak to individual staff members about the study. Weekly email contact was had with all teams, however researchers did not always receive replies. In these occasions, researchers would email again the following week, and ask the key person whether they would prefer less frequent emails.

Researchers were very mindful to try to reduce clinical workload and to approach and email teams in a respectful manner. After attending a number of meetings where clinicians seemed to be unsure of who would be suitable for the study, researchers provided a brief 'crib sheet' or inclusion and exclusion criteria (included below), with the aim to be more easily accessible for clinicians. Researchers also aimed to troubleshoot the problem of staff not knowing who to refer by making clear that all young people will be screened by the study.

Despite this large recruitment effort, a small number (n = 9) participants were recruited through clinical teams. Once the amendment came through allowing young people to self refer, there was a large boost in numbers for the study.

There are a number of hypotheses as to why this study may have struggled to recruit through clinical teams. Firstly, clinical teams in the area have recently undergone changes in teams and structure, alongside professional difficulties such as down-banding of roles. As such, services may have felt stretched for resource, and understandably would put their clinical duties as a priority. Second, clinicians may have been concerned about how the young people on their caseload would respond to the nature of the questions or concerned about safeguarding issues, and so preferred to not refer them. Interestingly, researchers found that young people themselves were very keen to speak about their experiences and a great number referred themselves to the study from the clinical teams where staff weer approached. On the few occasions where the young people did report risk of harm, researchers carried out a full risk assessment and shared this information with parents at the end of the phone call, after discussing this with the child. As an aside, in all occasions, the parent was aware and the child reported that they had shared those thoughts with their clinician. Third, as mentioned earlier, teams within NSFT were moving away from diagnosis led working, so despite being reassured that researchers would assess young people as part of the study, it is possible they felt unsure who would meet the criteria.

Seeing the increase in recruitment when young people were able to self-refer to the study, it feels important to give young people the option to take part in research and to give them a voice to speak about their experiences if they wish. This might highlight a greater issue among recruiting for research across the board, where the client is not given the choice whether or not to participate.

Appendix L. Solihull NRES ethical approval

NHS
Health Research Authority

West Midlands - Solihull Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Telephone: 0115 8839525

19 January 2016

Miss Aleksandra Kralj
Department of Clinical Psychology, Norwich Medical School
University of East Anglia
Norwich
NR4 7TJ

Dear Miss Kralj

Study title:	**Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).**
REC reference:	**15/WM/0468**
IRAS project ID:	**183282**

Thank you for your letter of 8 January 2016, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair and one other member.

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 opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Joanne Unsworth, nrescommittee.westmidlands-solihull@nhs.net.

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.

Conditions of the favourable opinion

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

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

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk 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 management permissions 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 within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

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 contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

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).

Approved documents

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

Document	*Version*	*Date*
Covering letter on headed paper [Covering letter]		
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Evidence of insurance]	1.0	01 December 2015
GP/consultant information sheets or letters [Clinician information sheet]	1.2	12 November 2015
GP/consultant information sheets or letters [Clinical information sheet]	1.3	05 January 2016
Interview schedules or topic guides for participants [Intrusive memories interview]	1.1	02 December 2015
Interview schedules or topic guides for participants [Intrusive thoughts interview]	1.1	02 December 2015
Interview schedules or topic guides for participants [RCADS interview]	1.0	01 December 2015
Letter from funder [Letter from funder]	1.0	01 December 2015
Letter from sponsor [Letter from sponsor]	1.0	01 December 2015
Non-validated questionnaire [CATS questionnaire]	1.0	01 December 2015
Other [GCP certificate]	1.0	01 December 2015
Other [Invitation to participate for Headteachers]	1.2	12 November 2015
Other [Invitation to participate for clinical teams]	1.2	12 November 2015
Other [Feedback from internal review]	1.0	07 July 2015
Other [Feedback from internal review]	1.0	07 August 2015
Other [Student 2 GCP certificate]	1.0	01 December 2015
Other [Participant debrief]	1.3	02 December 2015
Other [Participant debrief for excluded participants]	1.0	02 December 2015
Other [Response to scientific review]	1.0	02 December 2015
Other [Explaining why we are inviting head teachers]	1.0	04 December 2015
Other [Information sheet for teachers]	1.3	05 January 2016
Other [Covering letter to address REC suggestions]	1.0	05 January 2016
Participant consent form [Clinical participant consent form]	1.3	05 January 2016
Participant consent form [Control participant consent form]	1.0	05 January 2016
Participant consent form [Parent consent form clinical]	1.3	05 January 2016
Participant consent form [Parent consent form control]	1.0	05 January 2016
Participant consent form [Clinical participant age 11-12 assent form]	1.0	05 January 2016
Participant consent form [Clinical participant age 13-16 assent form]	1.1	05 January 2016
Participant consent form [Control participant age 11-12 assent form]	1.0	05 January 2016
Participant consent form [Control participant age 13-16 assent form]	1.0	05 January 2016
Participant information sheet (PIS) [Information sheet for clinical groups aged 11-12]	1.0	05 January 2016
Participant information sheet (PIS) [Information sheet for clinical groups aged 13-16]	1.3	05 January 2016
Participant information sheet (PIS) [Information sheet for controls aged 11-12]	1.0	05 January 2016
Participant information sheet (PIS) [Information sheet for controls aged 13-16]	1.0	05 January 2016
Participant information sheet (PIS) [Parent information sheet]	1.3	05 January 2016

REC Application Form [REC_Form_02122015]		02 December 2015
Referee's report or other scientific critique report [Scientific review feedback]	1.0	02 December 2015
Research protocol or project proposal [Joint protocol]	2.1	05 January 2016
Summary CV for Chief Investigator (CI) [Chief Investigator CV]	1.0	01 December 2015
Summary CV for student [Student 1 CV]	1.0	04 December 2015
Summary CV for supervisor (student research) [Supervisor CV]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Interview flowchart]	1.0	12 November 2015
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Procedure flow chart]	1.1	05 January 2016
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Interview flow chart]	1.1	05 January 2016
Validated questionnaire [CRIES questionnaire]	1.0	
Validated questionnaire [TMQQ questionnaire]	1.0	

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

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/WM/0468	Please quote this number on all correspondence

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

Yours sincerely

pp.

Dr Rex J Polson
Chair

Email:nrescommittee.westmidlands-solihull@nhs.net

Copy to: *Mrs Sue Steel*
Dr Bonnie Teague, Norfolk and Suffolk NHS Foundation Trust

NHS
Health Research Authority

West Midlands - Solihull Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

11 August 2016

Miss Aleksandra Kralj
Department of Clinical Psychology, Norwich Medical School
University of East Anglia
Norwich
NR4 7TJ

Dear Miss Kralj

Study title:	**Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).**
REC reference:	**15/WM/0468**
Amendment number:	**SA1**
Amendment date:	**18 July 2016**
IRAS project ID:	**183282**

Thank you for submitting the above amendment, which was received on 05 August 2016. I can confirm that this is a valid notice of a substantial amendment and will be reviewed by the Sub-Committee of the REC at its next meeting.

Documents received

The documents to be reviewed are as follows:

Document	*Version*	*Date*
Notice of Substantial Amendment (non-CTIMP)	SA1	18 July 2016
Participant consent form [Parent or career]	1.4	15 July 2016
Participant consent form [Assent form for clinical participants aged 11 to 12]	1.1	15 July 2016
Participant consent form [Assent form for clinical participants aged 13 to 15]	1.2	15 July 2016
Participant consent form [Clinical participants aged 16]	1.4	15 July 2016
Participant information sheet (PIS) [Parent or career]	1.4	15 July 2016
Participant information sheet (PIS) [Clinical participants aged 11 to 12]	1.1	15 July 2016
Participant information sheet (PIS) [Clinical participants aged 13 to 16]	1.4	15 July 2016
Research protocol or project proposal [(including appendix for posters and online information)]	3.0	18 July 2016

Notification of the Committee's decision

The Committee will issue an ethical opinion on the amendment within a maximum of 35 days from the date of receipt.

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 for the research.

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/WM/0468:	**Please quote this number on all correspondence**

Yours sincerely

V. Strutt

Vic Strutt
REC Manager

Email: NRESCommittee.WestMidlands-Solihull@nhs.net

Copy to: *Dr Bonnie Teague, Norfolk and Suffolk NHS Foundation Trust*
Mrs Sue Steel

NHS
Health Research Authority

West Midlands - Solihull Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

22 November 2016

Miss Aleksandra Kralj
Department of Clinical Psychology, Norwich Medical School
University of East Anglia
Norwich
NR4 7TJ

Dear Miss Kralj

Study title:	**Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).**
REC reference:	**15/WM/0468**
Amendment number:	**SA 2**
Amendment date:	**11 October 2016**
IRAS project ID:	**183282**

Thank you for submitting the above amendment, which was received on 31 October 2016. I can confirm that this is a valid notice of a substantial amendment and will be reviewed by the Sub-Committee of the REC at its next meeting.

Documents received

The documents to be reviewed are as follows:

Document	*Version*	*Date*
Notice of Substantial Amendment (non-CTIMP)	SA 2	11 October 2016
Other [Combined recruitment poster for clinical and control groups]	1.0	21 October 2016
Other [Letter to charitable and professional support organisations]	1.1	21 October 2016
Participant consent form [Clinical Participants Aged 16 to 18]	1.5	21 October 2016
Participant consent form [Control Participants Aged 16 to 18]	1.1	21 October 2016
Participant information sheet (PIS) [Control Particpants aged 16 to 18]	1.0	21 October 2016
Participant information sheet (PIS) [Clinical Participants aged 16 to 18]	1.0	21 October 2016
Participant information sheet (PIS) [Clinician Information Sheet]	1.4	21 October 2016
Participant information sheet (PIS) [Parent and Carer Information Sheet]	1.5	21 October 2016
Research protocol or project proposal	4.0	21 October 2016

Notification of the Committee's decision

The Committee will issue an ethical opinion on the amendment within a maximum of 35 days from the date of receipt.

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 for the research.

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/WM/0468:	**Please quote this number on all correspondence**

Yours sincerely

Vic Strutt
REC Manager

Email: NRESCommittee.WestMidlands-Solihull@nhs.net

Copy to: *Dr Bonnie Teague, Norfolk and Suffolk NHS Foundation Trust*
Mrs Sue Steel

Appendix M: CPFT R&D approval

Cambridgeshire and Peterborough NHS
NHS Foundation Trust

Understanding mental health, understanding people

Research and Development Department

09 March 2016

R&D Ref: M00729

Ms. Aleksandra Kralj
Department of Clinical Psychology
Norwich Medical School
University of East Anglia
Norwich
NR4 7TJ

Joint Research Office
Box 277
Addenbrooke's Hospital
Hills Road
Cambridge
CB2 0QQ

Direct Dial: 01223 596472 ext 6472
E-mail: mary-beth.sherwood@cpft.nhs.uk
www.cpft.nhs.uk

Dear Aleksandra

Re: 15/WM/0468 Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

In accordance with the Department of Health's Research Governance Framework for Health and Social Care, all research projects taking place within the Trust must receive a favourable opinion from an ethics committee and approval from the Department of Research and Development (R&D) prior to commencement.

R&D have reviewed the documentation submitted for this project, and has undertaken a **site specific assessment** based on the information provided in the SSI form, and I am pleased to inform you that we have no objection to the research proceeding within CPFT.

Sponsor: University of East Anglia

Funder: n/a

End date: 31.05.2017

Protocol: 2.1 05.01.2016

Conditions of Trust Approval:

- The project must follow the agreed protocol and be conducted in accordance with all Trust Policies and Procedures especially those relating to research and data management. Any mobile devices used must also comply with Trust policies and procedures for encryption.

- You and your research team must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act 1998 and are aware of your responsibilities in relation to the Human Tissue Act 2004, Good Clinical Practice, the NHS Research Governance Framework for Health and Social Care, Second Edition April 2005 and any further legislation released during the time of this study.

- Members of the research team must have appropriate substantive or honorary contracts with the Trust prior to the study commencing. Any additional researchers who join the study at a later stage must also hold a suitable contract.
- You and your research team must provide to R&D, as soon as available, the date of first patient first visit.

If the project is a clinical trial under the European Union Clinical Trials Directive the following must also be complied with:

- the EU Directive on Clinical Trials (Directive 2001/20/EC) and UK's implementation of the Directive: The Medicines for Human Use (Clinical Trials) Regulations 2004;

- the EU Directive on Principles and Guidelines for Good Clinical Practice (EU Commission Directive 2005/28/EC); and UK's implementation of the Directive: The Medicines for Human Use (Clinical Trials) Amendment Regulations 2006;

Amendments
Please ensure that you submit a copy of any amendments made to this study to the R&D Department.

Annual Report
It is obligatory that an annual report is submitted by the Chief Investigator to the research ethics committee, and we ask that a copy is sent to the R&D Department. The yearly period commences from the date of receiving a favourable opinion from the ethics committee.

Please refer to our website www.cpft.nhs.uk for all information relating to R&D including honorary contract forms, policies and procedures and data protection.

Should you require any further information please do not hesitate to contact us.

Yours sincerely

Stephen Kelleher
Senior R&D Manager

Appendix N: NSFT R&D approval

Norfolk and Suffolk NHS
NHS Foundation Trust

Research and Development
The Knowledge Centre
Hellesdon Hospital
Drayton High Road
Norwich
NR6 5BE

Telephone 01603 421255
E mail: RDofficemailbox@nsft.nhs.uk

Miss Aleksandra Kralj &
Miss Alexandra Payne
Department of Clinical Psychology
Norwich Medical School
University of East Anglia
Norwich NR4 7TJ

9th February 2016

Dear Miss Kralj and Miss Payne,

Re: RD #16 183282 Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD)

Thank you for submitting the above project for local research governance approval. I am pleased to inform you that your project has been given full approval and you may begin your research at the following site:

- Norfolk & Suffolk NHS Foundation Trust

I have enclosed two copies of the Standard Terms and Conditions of Approval. Please sign both copies returning one copy to the Research and Development office, at the above address, and keeping the other in your study file. Failure to return the standard terms and conditions may affect the conditions of approval. Under the agreed Standard Terms and Conditions of Approval you must inform the R&D department of any proposed changes to this study and submit annual progress reports to the R&D department.

Any researcher(s) whose substantive employer is not the Norfolk & Suffolk NHS Foundation Trust must have a Letter of Access or Honorary Research contract and evidence of Good Clinical Practice (GCP) training before coming on site to conduct their research in this project. Please note that you cannot take part in this study until you have this documentation. If a Letter of Access / Honorary Research Contract has not been issued – please contact us immediately.

If you have any queries regarding this or any other project, please contact, Tom Rhodes, Senior Research Facilitator, at the above address.

The reference number for this study is: **RD #16 183282,** and this should be quoted on all correspondence.

Yours sincerely,

Bonnie Teague
Research Manager

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

1. You commence your research within one year of the date of this letter. If you do not begin your work within this time, you will be required to resubmit your application.
2. You notify the Research and Development Office should you deviate or make changes to the approved documents.
3. You alert the Research and Development Office by contacting the address above, if significant developments occur as the study progresses, whether in relations to the safety of individuals or to scientific direction.
4. You complete and return the standard annual self-report study monitoring form when requested to do so at the end of each financial year. Failure to do this will result in the suspension of research governance approval.
5. You comply fully with the Department of Health Research Governance Framework and Trust Research Policies, and in particular that you ensure that you are aware of and fully discharge your responsibilities in respect to Data Protection, Health and Safety, financial probity, ethics and scientific quality. You should refer in particular to Sections 3.5 and 3.6 of the Research Governance Framework.
6. You ensure that all information regarding patients or staff remains secure and strictly confidential at all times. You ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice, Data Protection Act and Human Rights Act. Unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.
7. **UKCRN Portfolio Studies only**: You will make local Trust research team members aware that it is expected that the "first participant, first visit" date should be within 70 days of the full submission for Trust Research Governance Approval, and this date must be reported to the Research and Development office using the email address above. Delay to recruitment due to study-wide developments must be reported to the Trust as soon as possible.
8. **UKCRN Portfolio Studies only**: You will report and upload Trust recruitment to the UKCRN portfolio accurately and in a timely manner, and will provide recruitment figures to the Trust upon request.

Version Control

Document	Version	Date
Clinician Information Sheet	1.2	12/11/15
Clinical Information Sheet	1.3	05/01/16
Intrusive memories interview	1.1	02/12/15
Intrusive thoughts interview	1.1	02/12/15
RCADS interview	1	01/12/15
CATS Questionnaire	1	01/12/15
Invitation to participate: Head teachers	1.2	12/11/15
Invitation to participate: Clinical Teams	1.2	12/11/15
Participant debrief	1.3	02/12/15
Participant debrief for excluded participants	1	02/12/15
Information sheet for teachers	1.3	05/01/16
Consent Form: Clinical participant	1.3	05/01/16
Consent Form: Control participant	1.0	05/01/16
Consent Form: Parent clinical participant	1.3	05/01/16
Consent Form: Parent control participant	1.0	05/01/16
Consent Form: Clinical Participant Age 11-12 assent	1.0	05/01/16
Consent Form: Clinical Participant age 13-16 assent	1.1	05/01/16
Consent Form: Control Participant Age 11-12 assent	1.0	05/01/16
Consent Form: Control Participant age 13-16 assent	1.0	05/01/16
Information Sheet: Clinical Participant Age 11-12 assent	1.0	05/01/16
Information Sheet: Clinical Participant age 13-16 assent	1.3	05/01/16
Information Sheet: Control Participant Age 11-12 assent	1.0	05/01/16
Information Sheet: Control Participant age 13-16 assent	1.0	05/01/16
Information Sheet: Parent	1.3	05/01/16
Questionnaire: CRIES		
Questionnaire: TMQQ		

WSH R&D approval

West Suffolk NHS
NHS Foundation Trust

Research & Development Department
West Suffolk Hospital Foundation Trust
Hardwick Lane
Bury St. Edmunds
IP33 2QZ
Tel: 01284 712790
Email: R&D@wsh.nhs.uk
19th August 2016

Miss Aleksandra Kralj
Department of Clinical Psychology,
Norwich Medical School
University of East Anglia
Norwich
NR4 7TJ

Dear Miss Kralj

Intrusive cognitions in children and adolescents with depression and posttraumatic stress disorder (PTSD).

R&D Ref: 2016OTH008 **Rec Ref;** 15/WM/0468 **IRAS No;** 183282

I am writing to confirm that the above project was reviewed by West Suffolk Hospital NHS Trust Research Operational Committee and has Trust Approval to proceed. At the meeting documentation listed below were approved for use at this site.

- Parent or Carer Consent Form v1.3 5th Jan 2016
- Clinical Info Sheet v1.3 5th Jan 2016
- Parent or Carer Information Sheet v1.3 5th Jan 2016
- Participant Assent Form v 1.1 5th Jan 2016
- Participant Consent Form v 1.3 5th Jan
- Participant Information Sheet for Clinical participants v 1.3 5th Jan 2016
- Participant Information Sheet for clinical participants 13 – 16 v 1.3 5th Jan 2016
- Study Protocol v2.1 5th Jan 2016
- HRA Approval letter 19th Jan 2016

You are reminded that the study must follow the approved protocol and that any proposed amendments must be submitted for review via the West Suffolk Hospital R&D Office for subsequent trust approval.

Approval is subject to compliance with the attached standard terms and conditions for research. You are required to comply in a timely manner with the project monitoring and auditing requirements of the Trust and may be asked to provide non-confidential information on the outputs and impact of the research.
We require that you **sign, date and return** the duplicate copy of this letter to the West Suffolk Hospital R&D Office to confirm your compliance with the Trust Policy and Procedures on Research Governance.

We also require that you provide the ROC with details of the progress of the research. This includes information on recruitment, evidence of informed consent, the conclusions drawn and the outcome of the research.

Yours sincerely

Mr Paul Oats
Research and Development Manager

Dr Emily Baker - *Senior Paediatric Clinical Psychologist*

Appendix O: Consent forms

Participant Consent and Assent Forms

Participant Consent Form for Clinical Participants Aged 16 to 18 Years (Version 1.5)

Centre Number:

Study Number:

Patient Identification Number for this trial:

CONSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

1. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.0) for the above study. I have had the time to think about the information, understand any risk involved with taking part and been able to ask questions about the study. ☐

2. I understand that taking part is voluntary (I can choose whether I want to take part or not) and that I am free to leave the study at any time without giving any reason, and without my medical care or legal rights being affected. ☐

3. I understand that my personal information will not be shared with anyone except the research team and my clinical team. I understand that if I say something which makes the researchers think that I or someone else is at risk of being harmed then the researchers will need to be share this with other people. ☐

4. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

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

Participant Consent Form for Control Participants Aged 16 to 18 Years (Version 1.1)

Centre Number:

Study Number:

Patient Identification Number for this trial:

CONSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

6. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.0) for the above study. I have had the time to think about the information, understand any risk involved with taking part and been able to ask questions about the study. ☐

7. I understand that taking part is voluntary (I can choose whether I want to take part or not) and that I am free to leave the study at any time without giving any reason, and without my medical care or legal rights being affected. ☐

8. I understand that my personal information will not be shared with anyone except the research team. I understand that if I say something which makes the researchers think that I or someone else is at risk of being harmed then the researchers will need to be share this with other people. ☐

9. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

10. I agree to take part in the above study. ☐

Participant Assent Form for Clinical Participants Aged 13 to 15 Years (Version 1.3)

Centre Number:

Study Number:

Patient Identification Number for this trial:

ASSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

11. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.5) for the above study. I have had the time to think about the information, understand any risk involved with taking part and been able to ask questions about the study. ☐

12. I understand that taking part is voluntary (I can choose whether I want to take part or not) and that I am free to leave the study at any time without giving any reason, and without my medical care or legal rights being affected. ☐

13. I understand that my personal information will not be shared with anyone except the research team and my clinical team. I understand that if I say something which makes the researchers think that I or someone else is at risk of being harmed then the researchers will need to be share this with other people. ☐

14. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

15. I agree to take part in the above study. ☐

Participant Assent Form for Clinical Participants Aged 11 to 12 Years (Version 1.2)

Centre Number:

Study Number:

Patient Identification Number for this trial:

ASSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

16. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.2) for the above study. I have had the time to think about the information, understand any risk involved with taking part and been able to ask questions about the study. ☐

17. I understand that taking part is voluntary (I can choose whether I want to take part or not) and that I am free to leave the study at any time without giving any reason, and without my medical care or legal rights being affected. ☐

18. I understand that my personal information will not be shared with anyone except the research team and my clinical team. I understand that if I say something which makes the researchers think that I or someone else is at risk of being harmed then the researchers will need to be share this with other people. ☐

19. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

20. I agree to take part in the above study. ☐

Participant Assent Form for Control Participants Aged 13 to 15 Years (Version 1.1)

Centre Number:

Study Number:

Patient Identification Number for this trial:

ASSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

21. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.1) for the above study. I have had the time to think about the information, understand any risk involved with taking part and been able to ask questions about the study. ☐

22. I understand that taking part is voluntary (I can choose whether I want to take part or not) and that I am free to leave the study at any time without giving any reason, and without my medical care or legal rights being affected. ☐

23. I understand that my personal information will not be shared with anyone except the research team. I understand that if I say something which makes the researchers think that I or someone else is at risk of being harmed then the researchers will need to be share this with other people. ☐

24. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

25. I agree to take part in the above study. ☐

Participant Assent Form for Control Participants Aged 11 to 12 Years (Version 1.1)
Centre Number:

Study Number:

Patient Identification Number for this trial:

ASSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

26. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.1) for the above study. I have had the time to think about the information, understand any risk involved with taking part and been able to ask questions about the study. ☐

27. I understand that taking part is voluntary (I can choose whether I want to take part or not) and that I am free to leave the study at any time without giving any reason, and without my medical care or legal rights being affected. ☐

28. I understand that my personal information will not be shared with anyone except the research team. I understand that if I say something which makes the researchers think that I or someone else is at risk of being harmed then the researchers will need to be share this with other people. ☐

29. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

30. I agree to take part in the above study. ☐

Parent or Carer Consent Form (Version 1.5)

Centre Number:

Study Number:

Patient Identification Number for this trial:

CONSENT FORM

Title of Project: Intrusive thoughts and memories in young people with depression and posttraumatic stress disorder (PTSD).

Names of Researchers: Aleksandra Kralj & Alexandra Payne

Please initial all boxes

31. I confirm that I have read and understand the information sheet dated 21st October 2016 (version 1.5) for the above study. I have had the time to think about the information, understand any risk involves with taking part and been able to ask questions about the study. ☐

32. I understand that taking part is voluntary and that my child is free to leave the study at any time without giving any reason, and without their medical care or legal rights being affected. ☐

33. I understand that my child's personal information will not be shared with anyone except the research team and my clinical team. I understand that if they disclose risk of harm to myself or others then the researchers will need to be share this with other people. ☐

34. I know how to contact the research team about the study if I need to, and how to get information about the results. ☐

35. I agree to be at home during the phone call. I agree to speak to the researchers at the beginning and the end of my child's phone interview. ☐

36. I agree to my child taking part in the above study. ☐

Appendix P: RCADS

Date: _____ **Name/ID:** _____

RCADS

Please put a circle around the word that shows how often each of these things happen to you. There are no right or wrong answers.

1. I worry about things	Never	Sometimes	Often	Always
2. I feel sad or empty	Never	Sometimes	Often	Always
3. When I have a problem, I get a funny feeling in my stomach	Never	Sometimes	Often	Always
4. I worry when I think I have done poorly at something	Never	Sometimes	Often	Always
5. I would feel afraid of being on my own at home	Never	Sometimes	Often	Always
6. Nothing is much fun anymore	Never	Sometimes	Often	Always
7. I feel scared when I have to take a test	Never	Sometimes	Often	Always
8. I feel worried when I think someone is angry with me	Never	Sometimes	Often	Always
9. I worry about being away from my parents	Never	Sometimes	Often	Always
10. I get bothered by bad or silly thoughts or pictures in my mind	Never	Sometimes	Often	Always
11. I have trouble sleeping	Never	Sometimes	Often	Always
12. I worry that I will do badly at my school work	Never	Sometimes	Often	Always
13. I worry that something awful will happen to someone in my family	Never	Sometimes	Often	Always
14. I suddenly feel as if I can't breathe when there is no reason for this	Never	Sometimes	Often	Always
15. I have problems with my appetite	Never	Sometimes	Often	Always
16. I have to keep checking that I have done things right (like the switch is off, or the door is locked)	Never	Sometimes	Often	Always
17. I feel scared if I have to sleep on my own.	Never	Sometimes	Often	Always
18. I have trouble going to school in the mornings because I feel nervous or afraid	Never	Sometimes	Often	Always
19. I have no energy for things	Never	Sometimes	Often	Always
20. I worry I might look foolish	Never	Sometimes	Often	Always
21. I am tired a lot	Never	Sometimes	Often	Always
22. I worry that bad things will happen to me	Never	Sometimes	Often	Always

23. I can't seem to get bad or silly thoughts out of my head.	Never	Sometimes	Often	Always
24. When I have a problem, my heart beats really fast	Never	Sometimes	Often	Always
25. I cannot think clearly	Never	Sometimes	Often	Always
26. I suddenly start to tremble or shake when there is no reason for this	Never	Sometimes	Often	Always
27. I worry that something bad will happen to me . .	Never	Sometimes	Often	Always
28. When I have a problem, I feel shaky	Never	Sometimes	Often	Always
29. I feel worthless	Never	Sometimes	Often	Always
30. I worry about making mistakes	Never	Sometimes	Often	Always
31. I have to think of special thoughts (like numbers or words) to stop bad things from happening. . .	Never	Sometimes	Often	Always
32. I worry what other people think of me	Never	Sometimes	Often	Always
33. I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds)	Never	Sometimes	Often	Always
34. All of a sudden I feel really scared for no reason at all	Never	Sometimes	Often	Always
35. I worry about what is going to happen	Never	Sometimes	Often	Always
36. I suddenly become dizzy or faint when there is no reason for this	Never	Sometimes	Often	Always
37. I think about death	Never	Sometimes	Often	Always
38. I feel afraid if I have to talk in front of my class	Never	Sometimes	Often	Always
39. My heart suddenly starts to beat too quickly for no reason	Never	Sometimes	Often	Always
40. I feel like I don't want to move	Never	Sometimes	Often	Always
41. I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	Never	Sometimes	Often	Always
42. I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	Never	Sometimes	Often	Always
43. I feel afraid that I will make a fool of myself in front of people	Never	Sometimes	Often	Always
44. I have to do some things in just the right way to stop bad things from happening	Never	Sometimes	Often	Always
45. I worry when I go to bed at night	Never	Sometimes	Often	Always
46. I would feel scared if I had to stay away from home overnight	Never	Sometimes	Often	Always
47. I feel restless	Never	Sometimes	Often	Always

Appendix Q: CATS

Child and Adolescent Trauma Screen (CATS) - Youth Report

Name: _____ **Date:** _____

Stressful or scary events happen to many people. Below is a list of stressful and scary events that sometimes happen. Mark YES if it happened to you. Mark No if it didn't happen to you.

1.	Serious natural disaster like a flood, tornado, hurricane, earthquake, or fire.	☐ Yes	☐ No
2.	Serious accident or injury like a car/bike crash, dog bite, sports injury.	☐ Yes	☐ No
3.	Robbed by threat, force or weapon.	☐ Yes	☐ No
4.	Slapped, punched, or beat up in your family.	☐ Yes	☐ No
5.	Slapped, punched, or beat up by someone not in your family.	☐ Yes	☐ No
6.	Seeing someone in your family get slapped, punched or beat up.	☐ Yes	☐ No
7.	Seeing someone in the community get slapped, punched or beat up.	☐ Yes	☐ No
8.	Someone older touching your private parts when they shouldn't.	☐ Yes	☐ No
9.	Someone forcing or pressuring sex, or when you couldn't say no.	☐ Yes	☐ No
10.	Someone close to you dying suddenly or violently.	☐ Yes	☐ No
11.	Attacked, stabbed, shot at or hurt badly.	☐ Yes	☐ No
12.	Seeing someone attacked, stabbed, shot at, hurt badly or killed.	☐ Yes	☐ No
13.	Stressful or scary medical procedure.	☐ Yes	☐ No
14.	Being around war.	☐ Yes	☐ No
15.	Other stressful or scary event?	☐ Yes	☐ No

Describe: _____

Which one is bothering you the most now? _____

If you marked "YES" to any stressful or scary events, then turn the page and answer the next questions.

Mark 0, 1, 2 or 3 for how often the following things have bothered you in the last two weeks:

0 Never / 1 Once in a while / 2 Half the time / 3 Almost always

1.	Upsetting thoughts or pictures about what happened that pop into your head.	0	1	2	3
2.	Bad dreams reminding you of what happened.	0	1	2	3
3.	Feeling as if what happened is happening all over again.	0	1	2	3
4.	Feeling very upset when you are reminded of what happened.	0	1	2	3
5.	Strong feelings in your body when you are reminded of what happened (sweating, heart beating fast, upset stomach).	0	1	2	3
6.	Trying not to think about or talk about what happened. Or to not have feelings about it.	0	1	2	3
7.	Staying away from people, places, things, or situations that remind you of what happened.	0	1	2	3
8.	Not being able to remember part of what happened.	0	1	2	3
9.	Negative thoughts about yourself or others. Thoughts like I won't have a good life, no one can be trusted, the whole world is unsafe.	0	1	2	3
10.	Blaming yourself for what happened, or blaming someone else when it isn't their fault.	0	1	2	3
11.	Bad feelings (afraid, angry, guilty, ashamed) a lot of the time.	0	1	2	3
12.	Not wanting to do things you used to do.	0	1	2	3
13.	Not feeling close to people.	0	1	2	3
14.	Not being able to have good or happy feelings.	0	1	2	3
15.	Feeling mad. Having fits of anger and taking it out on others.	0	1	2	3
16.	Doing unsafe things.	0	1	2	3
17.	Being overly careful or on guard (checking to see who is around you).	0	1	2	3
18.	Being jumpy.	0	1	2	3
19.	Problems paying attention.	0	1	2	3
20.	Trouble falling or staying asleep.	0	1	2	3

Please mark "YES" or "NO" if the problems you marked interfered with:

1. Getting along with others	☐ Yes	☐ No	4. Family relationships	☐ Yes	☐ No
2. Hobbies/Fun	☐ Yes	☐ No	5. General happiness	☐ Yes	☐ No
3. School or work	☐ Yes	☐ No			