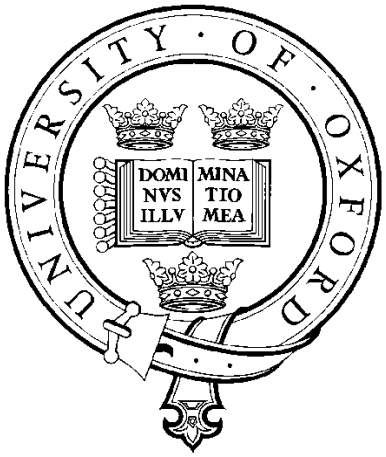
Trajectories of Suicidality in the Course of Major Depression



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Thesis submitted for the degree of Masters of Science (by Research) in Psychiatry

Michaelmas 2011

Acknowledgements

I would like to dedicate this thesis to a very special person who was unexpectedly taken from us in April 2011.

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Abstract

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The Differential Activation Theory of suicide suggests that once suicidality has occurred during one episode of depression it is highly likely to recur, when depression recurs. However, paradoxically, although depression recurs, for some people their suicidality may stop. Few studies have addressed the psychological factors associated with resolution or persistence of suicidality within recurrent depression but some research has shown pre-adult onset of depression and suicidality can have particularly toxic consequences. For this thesis, baseline data was obtained from the assessments of a large randomised clinical trial in major depression, in particular a novel method of using timeline data was used to explore 153 previously depressed adults's life history. This data was examined for the presence of sub-groups within those who have been previously depressed based on their history of suicidality. The overall aims of this thesis were to investigate whether distinct suicidal groups, characterised by different patterns of recurrence of suicidality, could be identified within a sample of participants who all had recurrent major depression. If these specific groups existed within our sample, then a further aim was to compare the socio-demographic and clinical characteristics of each group to those who had never been suicidal. The trajectories of onset of depression and suicidality in adolescence were also explored. Results showed that although it was possible to identify resolved and unresolved groups, differences between the groups were limited. The unresolved group reported experiencing more intrusive suicidal thoughts and found suicidal thoughts more comforting. In regards to age of onset, more than half of the sample had an onset of depression during their adolescence. Those with an onset of suicidality in adolescence experienced a greater number of subsequent suicidal episodes. The presence of suicidality within the first episode of depression rendered individuals more vulnerable to experiencing further suicidal episodes in the future. Intervention, prevention and assessment of suicidality should take into consideration onset of depression and suicidality as well as whether suicidality was present in initial depressive episodes, levels of comfort obtained from suicidal thoughts and how intrusive suicidal thought are.

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1 Introduction

Severe clinical forms of depression are known to cause significant impairments in one's emotional, physical and social functioning. Depression is a debilitating disorder that affects not only the sufferer but also their family. By 2020, the World Health Organisation predicts that depression will be the second leading cause of the number of years lost as a result of disability and premature mortality (Murray & Lopez, 1997). Depression often co-occurs with suicidal thoughts and behaviour, rendering it a life-threatening condition. Approximately 1 million people a year die by suicide world-wide and twenty times that number attempt suicide (Bertolote & Fleischmann, 2002). The lifetime rate of suicide attempts of people hospitalised for depression is 15.9% (Chen & Dilsaver, 1996). Suicide in depression is a problematic challenge facing mental health researchers and clinicians.

In line with the WHO/EURO multicentre study of parasuicide, when referring to suicidality within this thesis the following standardised definition of parasuicide will be adopted 'An act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised therapeutic dosage and which is aimed at realising changes which the subject desired via the actual or expected physical consequences' (Kerkhof, Schmidtke, Bille-Brahe, De Leo, & Lonnqvist, 1994).

This thesis explores the different ways that suicidality [1]manifests itself within recurrent episodes of major depression and the factors that differentiate these patterns.

[1] Suicidality may be seen as a continuum, with thoughts of death and ideation at one end, suicidal behaviour varying in intent and lethality in the middle and completed suicide at the other

This thesis is split into two main sections. To begin with, using current models of depression we wish to explore the extent that cognitive factors play a role in determining whether suicidality persists or resolves across depressive episodes. The second part of the thesis will explore the factors that are associated with the age of onset of depression as well as the age of onset of suicidality. In particular it will explore whether specific characteristics differentiate those with an onset in adolescence versus those with an onset in adulthood.

Therefore, initially, cognitive theories of depression and suicide will be reviewed, starting with a brief overview of Beck's model of depression, which focuses on the role of early experiences and the formation of cognitive structures that increase vulnerability to onset of depression in the presence of stressful life events. We will then go on to explore models that deal explicitly with *recurrence* of depression. This is because research indicates that those individuals who have one episode of depression are likely to experience further episodes (Ingram, Miranda, & Segal, 1998) and it is therefore important to understand not just what contributes to initial onsets of depression, but also what renders an individual vulnerable to

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(Linehan, 1986). Linehan (1986) conceived of suicidality as comprising a single population which, consists of three subgroups; suicidal ideators, suicidal attempters and suicides.

For the purpose of this thesis we are also going to use the term suicidality to refer to this continuum of suicidal thoughts, acts and ultimately completed suicide, to reflect the possibility that individuals may move from thoughts to acts, and then back to thoughts again at various points in their course of recurrent depression. Severity of worst point suicidal ideation is a/the best? predictor of high risk for eventual suicide (Beck, Brown, Steer, Dahlsgaard, & Grisham, 1999). Results from the national comorbidity survey in the United States of America have shown that in respondents aged 15-54, 4.6% had made an attempt, 3.9% had made a plan and 13.5% reported ideation. It is not uncommon to find suicide research where participants are studied together on a continuum, although it is acknowledged that non fatal, self injurious behaviour can occur without the intent to die (i.e. deliberate self-harm) and controversy exists surrounding such behaviour and the validity of including it in the suicide continuum. Many of the research studies discussed in this thesis have also adopted a continuum approach and the cognitive processes implicated in suicidality have been found in both suicidal ideators and those who have made suicide attempts.

For the purpose of this thesis, psychological processes that are of interest are largely concerned with the presence of ideation and the generation of desire/ underlying intention to die which may have similar psychological processes as suicidal behaviour. Research aimed at reducing the incidence of suicide often focus on individuals who experience ideation to help identify predictors of suicidal acts.

recurrence. A model of recurrent depression, the Differential Activation Theory has been postulated by Teasdale (1988). This model, and subsequent research which it has inspired (Nolen-Hoeksema, 1991; Williams, 2008), suggests that cognitive processes such as rumination and thought suppression are crucial in determining vulnerability to recurrence. The Differential Activation Theory of depression has also been extended to suicide (Lau, Segal, & Williams, 2004), and research examining this extension will be discussed.

1.1 Beck's Cognitive Model of Depression

Cognitive models of depression have long claimed that negative thinking is an antecedent of depression. One of the most widely accepted cognitive theories of depression has been proposed by Beck (1967). In Beck's model of depression, specific cognitive structures are believed to be established as a result of earlier experiences and to precede the first onset of depression. The cognitive structures have three levels: negative automatic thoughts, cognitive biases and dysfunctional attitudes (Ingram, et al., 1998). Dysfunctional attitudes are believed to predate not only the onset of an episode of depression but that activation of them also results in the presence of negative automatic thoughts and cognitive biases. Dysfunctional attitudes are believed to be embedded in negative belief systems (schemas), which cause one to develop a negative view of the outside world, the future and towards one's self (Moore & Garland, 2008). This thesis will address dysfunctional attitudes, which are thought to be a key ingredient in maintaining depressed mood.

1.1.1 Dysfunctional Attitudes

Beck defines dysfunctional attitudes as pervasive negative beliefs that an individual has towards himself (e.g. worthless, inadequate, reject), the outside world (the world making demands, obstacles and an interpretation of interactions with a sense of defeat) and towards the future (the current difficulties and /or suffering will continue interminably and produce continued frustration leading to hopelessness and possibly suicidal wishes) (Weissman & Beck, 1978). According to Beck, the depressogenic cognitive structure is activated by stress to which the individual has been previously sensitised, and once the dysfunctional attitudes are activated by stress, the individual may experience their first episode of depression. Once activated, dysfunctional attitudes are believed to activate an intricate system of negative premises and to allow an analogous pattern of negative self–referent information processing to ascend and so precipitate depression (Ingram, et al., 1998).

Although dysfunctional cognitions are evident in currently depressed individuals, they are less detectable between episodes. However, these dysfunctional assumptions are believed to remain latent between episodes until they are activated by stressful life events (Miranda, Persons, & Byers, 1990; Segal, Williams, Teasdale, & Gemar, 1996).

Cognitive therapy for depression involves identifying these dysfunctional attitudes. Beck's cognitive theory of depression has placed considerable emphasis on measuring depressogenic markers that lead an individual to experience depression.

1.1.2 Measuring Dysfunctional Attitudes

The Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) was developed to measure directly the negative beliefs towards the self, outside world and the future, held by those who are depressed. An early study by Nelson and colleagues (1992) looked at the properties of the DAS in a clinically depressed sample and a non-depressed control group. The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and DAS were administrated to both groups and higher scores on the DAS were indicative of receiving a diagnosis of depression. To examine the interdependence of the two scales due to potential overlap in depression-related items, the BDI was split into physical and behavioural symptoms (for example fatigue and suicidal ideation), and items that targeted disordered cognitions (for example an inappropriate level of guilt). Results showed a stronger association between the DAS and cognitive symptoms. Further tests showed a positive association between the two scales and indicated that depressive symptomology increased as cognitions became more dysfunctional.

In a further study examining a depressed in-patient sample, those with more dysfunctional attitudes at admission were more likely to remain depressed at 6 week follow-up despite having active treatment for depression (Williams, Healy, Teasdale, White, & Paykel, 1990). Therefore, those who endorse more dysfunctional attitudes, as measured by the DAS have been found to be associated with the persistence of symptoms of depression over time.

Dysfunctional attitudes have also been found to be related to hopelessness[2] (a common cognitive bias in depression and associated with suicide). Cannon and

[2] Hopelessness has been described as 'global attitudes of pessimism for the future' (O'Connor, Fraser, Whyte, Machale, & Masterton, 2008, p. 3)

colleagues (1999) examined the role of hopelessness and how it correlated with problem solving and dysfunctional attitudes in a sample of depressed patients. They found a positive correlation between greater dysfunctional attitudes and levels of hopelessness. This is extremely important as many studies have shown that hopelessness has been a key predictor of suicidal behaviour in clinical samples (Minkoff, Bergman, Beck, & Newman, 1973; Whisman, Miller, Norman, & Keitner, 1995). On the other hand, when assessing subscales of the DAS, those that experienced suicidal ideation could not be discriminated from those who have never experienced any suicidal ideation (Beck, Steer, & Brown, 1993). However, some subscales within the DAS that address cognitive vulnerability through a self critical view such as perfectionism have been highly correlated with suicide (Beck, Brown, Steer, & Weissman, 1991; O'Connor, 2007). In adolescents aged 12-17, DAS perfectionism[3] was associated with depression and suicidality severity at baseline, 6 weeks and 12 weeks (Jacobs et al., 2009). Previously, compared to non suicidal patients, suicidal patients have been shown to endorse significantly more items on the DAS, even when no significant differences are found in BDI scores (Ellis & Ratliff, 1986). However, to date, few studies have directly assessed the relationship between dysfunctional attitudes and suicide and it is therefore of interest to examine further the role of dysfunctional attitudes in suicidality and to identify any direct links between DAS and suicidality in those who have been suicidal.

[3] Perfectionism has been described as 'striving very hard to achieve goals and standards, accompanied by self-criticism when standards are not achieved' (Egan, Shafran, & Wade, 2012, p. 1)

1.2 Teasdale's Differential Activation Theory

Those who suffer from one episode of depression will experience on average a further four episodes (Judd, 1997). Two factors associated with a predisposition to recurrent depression are stress and the activation of a negative processing bias when an individual experiences low mood (cognitive reactivity) (Beck, 1974; Hammen, 1991; Kendler, Thornton, & Gardner, 2000; Teasdale, 1988). The role of psychological factors in recurrent depression has been of great interest. One theory that aims to explain what puts some people at increased risk of recurrent depression is Teasdale's (1988) Differential Activation Theory (an extension of Beck's account for vulnerability to depression). The theory proposes that repeated co-occurrence of depressed mood with negative thoughts leads to some individuals being highly cognitively reactive to small mood shifts in the future.

Research in mood-congruent memory demonstrates a similar phenomenon; information may be better recalled in the context in which it is learned. One example of this comes from a study of divers in the North Sea. These divers were asked to learn a word list on shore and a word list under water. Their recall of the word lists was then tested both in the context in which it was learned (shore-shore / water-water) and the opposite context (water-shore / shore-water). The researchers showed that recall was best when it occurred in the learning environment (Godden & Baddeley, 1975). Mood can similarly act like a context to learn in: whatever has been learnt during negative mood is more accessible when negative mood returns.

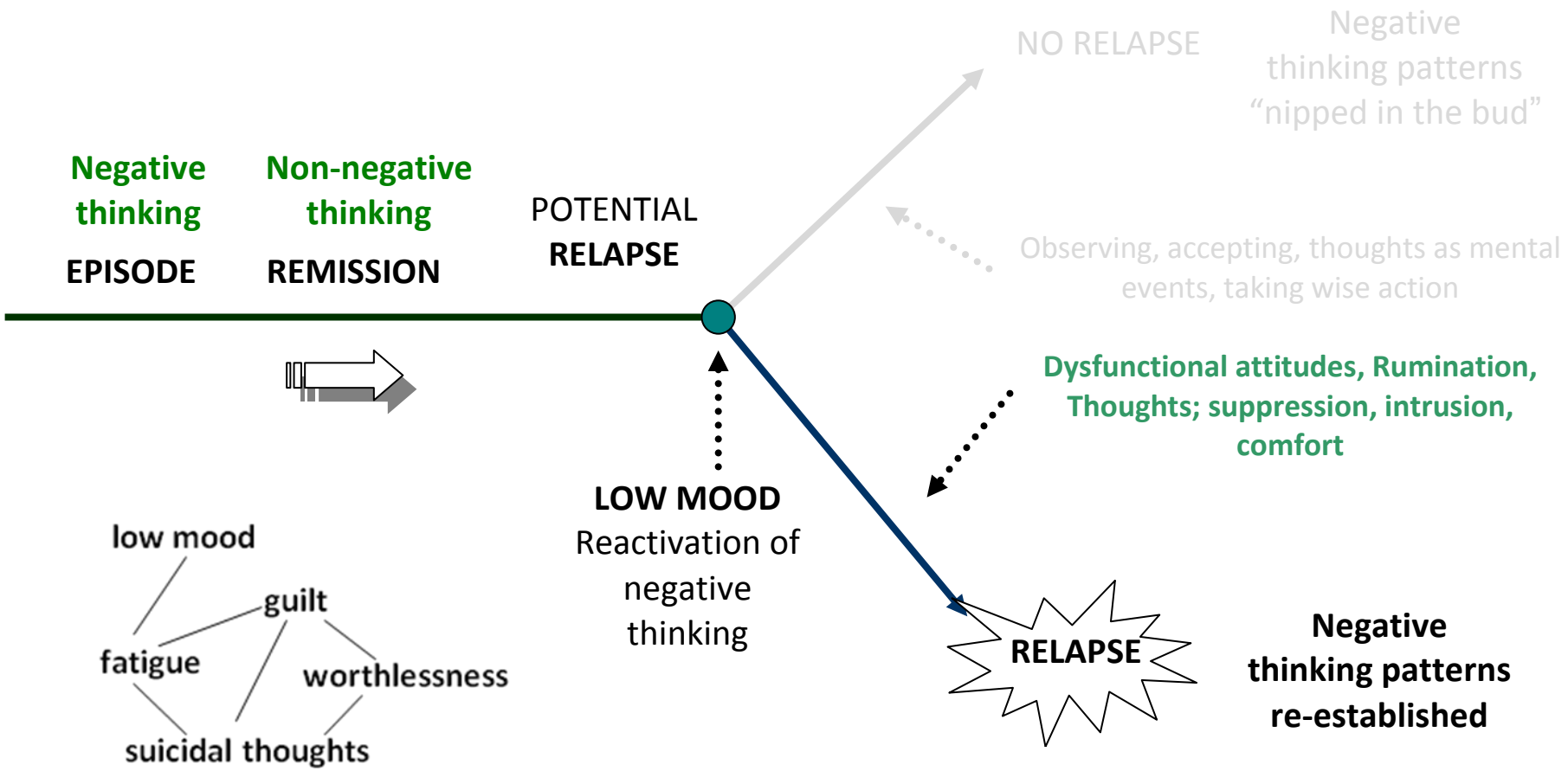
According to the Differential Activation Theory, cognitive *processes* such as rumination and thought suppression, as well as negative *content* such as dysfunctional attitudes are sub-consciously re-activated when low mood is re-experienced, reinforcing their association with depressive symptomology (Lau, et al., 2004). It is

this vicious cycle that maintains and exacerbates a depressed state, increasing the chances that an individual will re-experience the cycle. " Depressed mood and cognitive processing can act to reinforce each other and to set up a vicious cycle that will tend to intensify and maintain depression" (Teasdale, 1988 P. 253). Once this cycle is in place, individuals may become sensitive to negative life events and during later episodes show increased cognitive reactivity to small decreases in mood. As a result, the apparent association between life events and depression diminishes because major events are not required to trigger symptoms (Williams, Van der Does, Barnhofer, Crane, & Segal, 2008).

Consequently, the Differential Activation Theory suggests that following a low mood, differences in an individual's pattern of thinking that can lead to reactivation of symptoms and will lead an individual to experience either mild depression or clinical depression. Depressive symptoms may initially occur in a loose association, during the first episode. However, negative thinking patterns are established during early episodes of depression and as a result associations between low mood and depressive symptoms (suicidal thoughts, fatigue, insomnia, anhedonia and so on) are formed. This becomes problematic when depression returns and this pattern starts to become established again, with learned associations made between depressed mood and a negative thinking pattern. As each new depressive episode occurs the associations become stronger. The negative thinking patterns remain latent during periods of remission but can more easily be reactivated in subsequent dysphoric mood states. The relationship between negative thinking, low mood and other symptoms that have been experienced is therefore strengthened with each consequent episode (Williams, Crane, Barnhofer, & Duggan, 2005).

The theory postulates that depressive symptoms and negative thinking become associated with one another through cognitive processes. Cognitive processes implicated in the model, such as rumination and thought suppression, provide the mechanism that reinforces this toxic relationship (see Figure 1). Rumination and thought suppression have been heavily implicated in depression and it is important to examine and understand how and why these cognitive processes are involved in this model.

Figure 1. The Differential Activation Model of Depression to Show Cognitive Processes Involved in Relapse.



1.2.1 Reactivation of Depressive Symptoms: Rumination

Rumination is one of the most frequent types of negative thinking across psychopathology and particularly in depression (McLaughlin & Nolen-Hoeksema, 2011). Most research indicates that a ruminative style of responding exacerbates negative mood. Maladaptive ruminative responses include thoughts and behaviours that channel the mind to focus largely on depressive symptoms e.g. 'everyone is happier than me', 'I just feel tired all the time', 'I have no interest in doing things that I used to enjoy'. Rumination is passive or uncontrollable in nature, persistently focusing on negative content (Ehring & Watkins, 2008). Rumination has been implicated in onset (Robinson & Alloy, 2003) and maintenance of depression (Nolen-Hoeksema, McBride, & Larson, 1997). When reacting to distress rumination leads an individual to repeatedly think about their negative responses in a maladaptive manner (Nolen-Hoeksema & Morrow, 1991), reinforcing and elaborating them.

1.2.2 Reactivation of Depressive Symptoms: Thought Suppression

Another cognitive process that can account for the reactivation of symptoms in the Diffential Activation Theory is thought suppression. Wegner & Zanakos (1994) were interested in understanding the psychological processes of people who suppress their thoughts. This interest grew from earlier investigations where participants were instructed not to think of a white bear. When asked to recall their thoughts following this instruction, participants reported an inability to consciously *not* think about the white bear (D. M. Wegner, Schneider, Carter, & White, 1987). This is thought to be the result of a suppression monitoring process which consists of two mental

processes; firstly a conscious effortful search for a distracter "anything but" the to-be-suppressed thought, and secondly a parallel unconscious effortless search for the unwanted intrusive thought. This dual mental processing increases the cognitive accessibility of the unwanted thought, and will increase the intensity with which any emotion attached to the thought will be expressed (D. Wegner, 1992). People with depression tend to find that they are unable to suppress unwanted negative thoughts and whilst they are trying to suppress these thoughts they experience a resurgence of the unwanted thoughts, compared to non depressed individuals (Wenzlaff, Wegner, & Roper, 1988).

Individuals with depression find that the distracters that are most accessible to them are tainted by similar negativity that is characteristic of the thought that they are trying to suppress (Wenzlaff & Wagner, 2000). Conway, Howell and Giannopoulos, (1991) found that their dysphoric sample had more difficulties suppressing negative thoughts than positive ones. An analogous phenomenon to that of the deep sea divers was also found in thought suppression. In testing the notion that distracters which are mood-related can create associations between the relevant mood and the suppression target, researchers found an association between suppressed thoughts and their associated mood when the suppression first occurred. As a consequence, reinstating the mood that existed during suppression facilitated the return of the suppressed thought (Wenzlaff, Wegner, & Klein, 1991). Higher levels of self-reported suppression of depressive thoughts are found to be associated with deteriorating depressive symptoms. In a currently well sample those with a previous episode of depression and therefore at risk of another episode were asked to unscramble ambiguous sentences with and without a cognitive load (a 6 digit number). Those who suppressed more also exhibited more negative sentences and therefore depressive

thinking under cognitive load. The addition of a cognitive load removes an individual's capacity for suppression (Wenzlaff & Bates, 1998).

1.3 The Differential Activation Theory of Suicide

Some symptoms of depression are less cognitive in nature than others. For example, sleep disturbance and changes in appetite are considered to be less cognitive than suicidality and guilt, as the former are physiological in their presentation. One of the most common reoccurring symptoms across episodes of depression is suicidality (Williams, Crane, Barnhofer, Van der Does, & Segal, 2006). The emergence of cognitive theories of suicidality have largely been derived from cognitive theories of depression. As well as common elements such as negative thinking a distinction can be drawn between the cognitive features of suicidal depression and those features of non-suicidal depression (Williams, Barnhofer, Crane, & Beck, 2005; Williams, Crane, et al., 2005). Building on this assumption Williams, et al., (2006) linked the Differential Activation Theory of depression to suicidality. According to the Differential Activation Theory of suicidality, once suicidality has occurred during one episode of depression, this will increase the likelihood of it also being re-experienced in future episodes. The Differential Activation Theory also has particular implications for understanding recurring suicidal thoughts and behaviour (Lau, et al., 2004) since it is suggested that across repeated suicidal episodes, suicidal ideas may become more elaborated and lead to suicidal behaviour (Williams, Crane, et al., 2005). Consistent with this hypothesis eventual death by suicide has been linked to the repeated re-experiencing of suicidal crises across multiple episodes of depression (Bradvik & Berglund, 2011). Negative thinking styles implicated in depression such as dysfunctional attitudes, rumination and thought suppression could potentially play a

role in strengthening suicidal ideation from early episodes to subsequent episodes and because suicidal ideation is cognitive in nature, it may be much more susceptible to the impact of these negative thinking styles than other depressive symptoms. If this is the case then the Differential Activation Theory of suicide could further elucidate our understanding of processes involved in recurrent suicidal thoughts and behaviour and knowledge regarding cognitive processes in suicidal ideation and behaviour are therefore of great importance.

1.3.1 Reactivation of suicidal symptoms: Rumination

Both hopelessness and depression have been implicated in rumination and many studies have subsequently shown a relationship between rumination and suicidal ideation and behaviour (Morrison & O'Connor, 2008). To measure ruminative coping, studies have used the Ruminative Responses Scale (RRS: Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Following a factor analysis of this scale two subtypes of rumination have been identified; reflection and brooding (Treynor, et al., 2003). Items on the scale that correspond to reflective rumination consist of " I analyse recent events to try to understand why I am depressed" or " I go away by myself to think about why I feel this way". Items on the scale that correspond to brooding rumination include "I think: 'why can't I handle things better?'" or "I think: 'why do I have problems other people don't have?'" Reflection items refer to a purposeful turning inward. Brooding items reflect a comparison of the current situation with some unachieved standard (Treynor, et al., 2003).

Specific and reoccurring symptoms in depression such as suicidal ideation and behaviour have not commonly been studied independently in relation to rumination.

However similarities between rumination and suicidality include an inability to effectively problem solve and those who engage in depressive rumination are usually very self-critical (Crane, Barnhofer, Visser, Nightingale, & Williams, 2007), to the extent that suicidality has been conceptualised as an attempt to 'escape from aversive self-awareness'(Baumeister, 1990).

The relationship between rumination and suicidality (including suicidal thinking and behaviour) has also been explored amongst a group of college undergraduates. Individuals who had made a previous suicide attempt showed significantly higher levels of hopelessness and rumination than those who had never made an attempt (Surrence, Miranda, Marroquín, & Chan, 2009). A review by Morrison & O'Connor (2008) conclude that there is good evidence that increased rumination was associated with increased suicidality.

1.3.2 Reactivation of Suicidal Symptoms: Thought Suppression, Intrusion and Comfort

Keeping unwanted negative thoughts from awareness is a difficult task for depressed individuals (Wenzlaff, et al., 1988). If having an unwanted thought about an action or idea increases the likelihood of that thought recurring (Purdon, Rowa, & Antony, 2005), then the content of the negative thoughts for depressed individuals if suicidal in nature, could be problematic, as suppression of suicidal thoughts could lead to an increase in frequency of suicidal ideation. A series of experiments in the USA showed a strong association between suicidal ideation and thought supression. Higher levels of suicidal ideation were found in individuals who endorsed greater tendencies towards suppression of suicidal thoughts, although it is unclear if this is a natural consequence of experience of more severe suicidality. Importantly, results also

showed a greater baseline tendency towards suppression of suicidal thoughts resulted in an increased severity in suicidal thoughts over time (Pettit et al., 2009). Recent research has also shown levels of thought suppression to significantly decrease in suicidal patients following therapy (Hepburn et al., 2009).

Najmi, Wegner, & Nock (2007) proposed a model of the role of thought suppression in the experience of self injurious thoughts and behaviours. They argue that when individuals are prone to experience high emotional reactivity this can produce a heightened experience of compelling thoughts and emotions, which trigger attempts to suppress them, which then exacerbate the unwanted thought (which in turn leads to self- injurious thoughts and behaviours). They found that thought suppression is associated with the presence and frequency of non-suicidal self-injury, suicide ideation and suicide attempts. Thought suppression also mediated the relationship between emotional reactivity and frequency of self- injurious thoughts and behaviours.

A key step forward from this was taken by Williams, Duggan, Crane, & Hepburn (2010) who were interested in the way that people react to the presence of suicidal thoughts and behaviour in order to see if this was critical in whether these problems become persistent. They suggest that when encountering a distressing situation, thoughts and feeling may automatically trigger a sense of discrepancy, and a 'discrepancy-based' ('doing') mode of mind. This mode of mind, whilst useful in resolving real world problems, is not useful for resolving emotional problems and so fails to produce discrepancy-reduction. As a consequence, individuals may resort to increasingly maladaptive forms of discrepancy-based processing, such as rumination and experiential avoidance. They draw attention to the fact that most widely used scales such as the Beck Scale for Suicidal Ideation (Beck & Steer, 1991) do not

address the issue of *how people relate to their suicidal thoughts* and only explore practical aspects of suicide "I had a specific plan for killing myself" and the attitude towards the idea of death "I neither accepted nor rejected the idea of killing myself". The few questions that do relate to thoughts focus on frequency and duration "I had frequent thoughts about killing myself". Williams, et al.,(2010) developed a measure to assess the tendency to suppress suicidal thoughts; the White Bear Suppression Inventory for Suicidal Ideation (WBSI-si). Items from the WBSI were adapted to explicitly relate to suicidal thoughts and an extra five items were composed relating to suicidal thoughts as a source of comfort 'I take comfort from thoughts of suicide'.

In summary, an unwanted intrusive suicidal thought can lead one to attempt to suppress such thoughts especially for those who are highly emotionally reactive. Conceivably, this could result in an increase in frequency and intensity of the unwanted thought. This study will aim to examine this issue by comparing levels of thought suppression (using the WBSI-si to measure suicide ideation-related suppression, intrusion and comfort) in individuals for whom suicidality has been a persistent feature of their major depression (i.e. suicidality is unresolved) and in individuals who have experienced suicidality less extensively in the context of major depression.

1.4 Resolution of Suicidality

The Differential Activation Theory suggests that once suicidal ideation or behaviour has become a feature of major depression it is very likely to re-emerge when depression returns. However although the best predictor of future suicidal behaviour is past suicidal behaviour, and as many as 25 % of people who present to

hospital following an episode of self-harm go on to harm themselves again in the following year, for many individuals a suicide attempt may represent an isolated event (Hawton, 1997). Further, we know less about the recurrence of suicidal behaviour which does not reach the attention of medical professionals or patterns of recurrence of suicidal ideation in recurrent depression. In order to understand what factors might be associated with the 'resolution' of suicidality, Sinclair & Green (2005) looked at patients who had previously presented to hospitals following an episode of deliberate self poisoning but who had not harmed themselves in the past two years. They analysed the accounts of patients self harming behaviour to identify key themes that led to their resolution. Possible explanations for participants' perceived move away from deliberate self harm were explored. In-depth interviews were conducted where participants talked about the past (when they were self- harming) and the present (when they had stopped self harming).

Three main themes materialised from the analysis that could be observed in 18 out of the 20 people interviewed. Theme one, was the understanding that deliberate self-harm was a consequence of an untreated or unrecognised illness. Theme two was the resolution of adolescent distress and the third theme was the role of alcohol as a precipitating and maintaining factor. The remaining two participants had accounted for their single episode of self harm as being solely a result of 'overwhelming acute life events'. Notably, nine people attributed their resolution to adolescent chaos. They reported that their self-harming behaviour was due to a lack of control within the family structure. This included general memories of feeling unsupported and confused as well as specific accounts of sexual abuse or physical violence. This suggests that the transition from adolescence to adulthood could potentially be a vital time resulting in the resolution of prior suicidality as adolescents move into a different life context

and are able to exert more control over their environment. It is important to highlight that only two people had experienced one episode of self-harm and the literature suggest this is not representative of the population (Sinclair, Hawton, & Gray, 2010).

Cognitive factors that have previously been identified in suicidality were not considered as a possible reason for the apparent resolution of self- harm. Moreover, the resolution of suicidal ideation in children and adolescents has previously been attributed to a shift in adaptive cognitive functioning, for example in attributional styles (Wagner, Rouleau, & Joiner, 2000).

The issue of defining unresolved and resolved suicidality is complicated by the fact that it is impossible to say that suicidality has permanently resolved and therefore no obvious cut–off can be used. However past research has utilised distinctions between previously suicidal and recently suicidal groups. Kelley et al. (1996) studied hospitalised adolescents who had either recently attempted suicide, previously attempted suicide, repeatedly attempted suicide or had never been suicidal. Patients in the previous attempters group were categorised as having had previous suicidal behaviour that had resolved for at least six months prior to interview. Results showed that the never suicidal group reported less depressive symptomatology than the repeated and previous attempters. The aim of this thesis is to examine the natural patterns of recurrence versus non-recurrence of suicidality in a sample of patients all of whom had highly recurrent depression and to explore the cognitive factors implicated in the onset and offset of suicidality in this group. By examining patterns of previous recurrence, it will be possible to determine working definitions of resolved and unresolved suicidality in relation to cognitive factors described above.

1.5 Implications of Pre-adult Onset of Depression and Suicide

Onset of depression can vary from childhood right through to old age. A recent surge in interest in age of onset in Major Depressive Disorder (MDD) has produced some remarkable findings. Research in MDD has shown that a single episode of MDD in adolescence can be predictive of future depressive episodes in early adulthood (up to age 23) (Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2000). In the second wave of Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study, researchers found that those with a preadult onset (aged 18 or younger) of depression had more past suicide attempts. They found that 27.5% of the preadult group had attempted suicide compared to 9.1% of the adult onset group. The mean age of onset in this study was 26 years, of which 38% had an onset of depression before age 18 (Zisook et al., 2007). The preadult onset group had experienced more depressive episodes and they reported more suicide attempts even though they were currently younger than the adult onset group. Claassen et al., (2007) also found that individuals who had made a suicide attempt reported their onset of a depressive illness about nine years earlier than those who had not made an attempt, and that compared to the non attempt group, the suicide attempt group also reported having 1.2 more depressive episodes on average. However it is unclear from these studies if onset of suicidality had been in adolescence. Onset of major depression prior to adulthood seems to be indicative of a more toxic course of depression, with individuals experiencing a higher rate of suicidality and depressive episodes. There has been a marked increase in youth suicide rates, in line with findings from the WHO that suicide rates over the past 45 years have increased by 60% worldwide and that suicide is the second leading cause of death for those aged 10-24 years in some countries.

Suicidal behaviour during adolescence is influenced by a number of variables including, family environment, mental health problems, substance use, sexual abuse and adverse life events (Fergusson, Woodward, & Hoorwood, 2000). One of the characteristics identified in suicidal adolescents is impulsivity (Kashden, Fremouw, Callahan, & Franzen, 1993). A longitudinal study in New Zealand, examining the age of first onset of suicidality found that 25% of their sample had reported either making a suicide attempt or had suicidal thoughts by the time they were 18 years old. Suicidality occurring prior to age 18 was associated with an increased risk of subsequent suicidality and major depression during ages 18 to 25 (Fergusson, Horwood, Ridder, & Beautrais, 2005). More recently, studies have aimed to examine specific subsets of adolescents to identify the key variables that make this group more vulnerable to re-experience of depression and suicidality (Hammen, Brennan, Keenan-Miller, & Herr, 2008; Lewinsohn, et al., 2000). One study examined psychosocial and clinical features of a community sample based on five trajectories of diagnosed depression: a) early onset (aged 15) of MDD that had recurred by the age of 20, b) early onset that not recurred by the age of 20, c) later onset (from the age 15-20) that had recurred by the age of 20, d) late onset that had not recurred by the age of 20. They found that the early onset recurrent group could be distinguished from the non-recurrent group by the former group showing increased levels of depression severity, chronicity and duration (Hammen, et al., 2008).

Adolescence is a time of risk for suicidality. With the growing concern about increase in adolescence suicidality, research has focused on identifying risk factors and life processes related to onset. A 17 year longitudinal study of boys and men showed that the time span from early adolescence to early adulthood was the peak period for suicidal ideation prevalence and risk of death. Results showed that future

risk of suicidal ideation increased with past history of suicidal ideation. They also found that risk for onset of any suicidal ideation decreased with age and risk for further repeated episodes of suicidality also decreased over time (Kerr, Owen, & Capaldi, 2008). Although psychological variables were not examined the authors identified a number of possible mechanisms that may have been involved including: paradoxical effects of efforts to suppress suicidal thoughts and links to a ruminative coping style that a) prolongs mood and b) interferes with adaptive coping.

However although suicidality seems to be elevated in adolescence, adolescent suicidality might also represent a special case, and be associated with less persistence over time. This is because the transition from adolescence to adulthood is a key developmental stage. Specifically, this transitional period represents a distinctive period of time of frequent change, identity exploration, world views, possibilities in love and work ambitions (Arnett, 2000). If the context in which depressive symptoms are experienced changes dramatically this may impact on the likelihood of persisting suicidality. This is consistent with the finding of Sinclair & Green (2005) that movement out of the adolescent phase can be associated with resolution of suicidality or at least move to a low-risk recovery phase (Bergmans, Langley, Links, & Lavery, 2009).

Little research to date has examined the patterns of suicidality across episodes of depression. Being one of very few studies to observe patterns of individual symptoms of depression across episodes, Williams, et al., (2006) examined the presence of depressive symptoms in past episodes to see if severity predicted recurrence of these symptoms in future episodes. Correlations indicated that only three symptoms according to the DSM criteria showed significant association from severity at one episode and severity at recurrence. These were an inability to concentrate or make

decisions, worthlessness or guilt and suicidal ideation. Further correlation analysis indicated that out of these three symptoms only suicidal ideation remained significantly correlated, although severity of ideation across episodes may fluctuate. These findings suggest that, in terms of Differential Activation Theory, those individuals who have an onset of depression in adolescence may be particularly vulnerable to become suicidal within their episode and hence to experience recurrences of suicidality over time.

This thesis will therefore examine the particular impact of adolescent onset depression and suicidality on patterns of persistence or resolution of suicidality over time.

1.6 Brief Summary of Literature

Differential Activation Theory suggests that negative thinking styles such as dysfunctional attitudes, rumination and thought suppression, intrusion and seeing suicidal thoughts as comforting may contribute to the formation of strong associations between depressive symptoms and suicidality, such that these features become enmeshed in a tightly associated pattern. As such, the presence of these cognitive tendencies may increase the likelihood of recurrence of depression and also the likelihood of recurrence of suicidality. However there is a paradox. Some people stop experiencing suicidality even though they have further recurrences of depression. How commonly does this occur? What factors predict whether this occurs or not? Can studying the presence or otherwise of particular negative thinking styles help explain which individuals will show resolution versus non-resolution of suicidality?

We would hypothesise that the factors determining whether an individual who has been suicidal in the past experiences ongoing, unresolved suicidality or is able to

resolve their suicidality would be dependent on; (1) the extent to which the individual has ruminated about suicidal thoughts, (2) the extent to which the individual has tried to suppress suicidal thoughts, (3) how intrusive suicidal thoughts are, (4) how comforting suicidal thoughts are and (5) the level of dysfunctional attitudes an individual displays. Specifically, at the point of reactivation of depressive symptoms, it is hypothesised that the way in which an individual responds to their thought patterns may account for whether people relapse into suicidality or not.

The first aim of this thesis is to determine whether specific groups exist within a sample of people with recurrent depression. Specifically, we wish to examine the proportion of individuals who have recently suffered from suicidality (unresolved group) and the proportion of those whose who have been previously suicidal, but have not experienced suicidality recently (resolved group) despite having further depressive episodes. Thus, we aim to identify whether groups of unresolved and resolved suicidality exist within a sample of recurrent depression, the proportions if they do exist and to compare the groups on sociodemographic and clinical features.

The emphasis is on specifically examining the trajectories of suicidality and what predicts whether suicidal ideation or behaviour recurs in the context of recurrent major depression. We hypothesise that if individuals report reacting to their suicidal thoughts with rumination and suppression, and/or report finding their thoughts particularly intrusive, that this will actually be predictive of greater recurrence of suicidality across depressive episodes. We also wish to see if, when suicidality is a feature of initial episodes of depression (i.e. when suicidality occurs at the same time that a pattern of depressogenic cognitions is established), it is more likely to persist as a central feature or what factors are present if it resolves. Another aim is to consider

whether adolescent onset of depression and suicidality is associated with greater persistence or greater resolution of suicidality over time.

1.7 Aims and Hypothesis

There were four main aims within this thesis however, as there is no prior data to support any predictions some of the aims and sub-aims are exploratory in nature whilst others generate more specific hypothesis:

Aim 1: To identify sub-groups within the population of participants with recurrent depression.

Aim 1.1: To determine whether specific groups of people with either 'unresolved' or 'resolved' suicidality exist within a sample of people with recurrent depression.

Aim 2: If the 'unresolved' versus 'resolved' groups can be identified, to explore in more detail the cognitive factors (rumination, dysfunctional attitudes, thought suppression, thought intrusion and comfort) associated with resolution or persistence of suicidality within depression.

Aim 2.1: To explore any differences between the unresolved and resolved groups on clinical and psychological characteristics (sociodemographic, co-morbid disorders, onset of depression and number of depressive episodes).

Hypothesis 1: Specifically, it is predicted that the unresolved group, compared to the resolved group, will report higher levels of rumination, more dysfunctional

attitudes, suppress more suicidal thoughts, find suicidal thoughts more comforting and experience more intrusive suicidal thoughts.

Aim 2.2: To explore in each group any correlations between worst point suicidality and reported levels of intrusion of suicidal thoughts and comfort derived from these thoughts. .

Aim 2.3: To explore the presence of single versus repeated suicidality and the impact of experiencing suicidality within the first episode of depression.

Aim 3: To identify the nature of suicidality within the resolved and unresolved groups.

Aim 3.1: To explore differences in the proportion of people within the unresolved and resolved groups who have either experienced suicidal ideation only or engaged in behaviour.

Aim 4: The trajectories of age of onset in depression and suicidality will be explored; in particular adolescent versus adulthood onset of depression and suicidality.

Aim 4.1: To explore the proportion of people that fall into subgroups of suicidality including those with episodes of suicidality confined to adolescence and those in whom suicidality emerged in adulthood compared to those who have never been suicidal during the course of recurrent depression.

Aim 4.2: To explore any differences between the adolescent and adult onset of depression on their worst point suicidality.

Aim 4.3: To explore any differences between the adolescent and adult onset of depression on cognitive measures.

Hypothesis 2: In particular, it is predicted the adolescent onset group will report higher levels of rumination, more dysfunctional attitudes, suppress more suicidal thoughts, find suicidal thoughts more comforting and experience more intrusive suicidal thoughts compared to the adult onset group.

Aim 4.4: To explore any differences between the adolescent and adult onset of suicidality on their worst point suicidality.

Aim 4.5: To explore any differences between the adolescent and adult onset of suicidality on cognitive measures.

2 Method

2.1 Design

This thesis is a cross sectional study that took advantage of a large two- site randomised clinical trial examining the prevention of relapse in depression. The trial aims to compare two treatment programmes: Mindfulness Based Cognitive Therapy (MBCT) and Cognitive Psycho – Education (CPE) comparing each with treatment as usual (TAU) alone. This thesis examines aspects of suicidality that were not part of the original planned analysis, using data from the Oxford site.

2.2 Participants

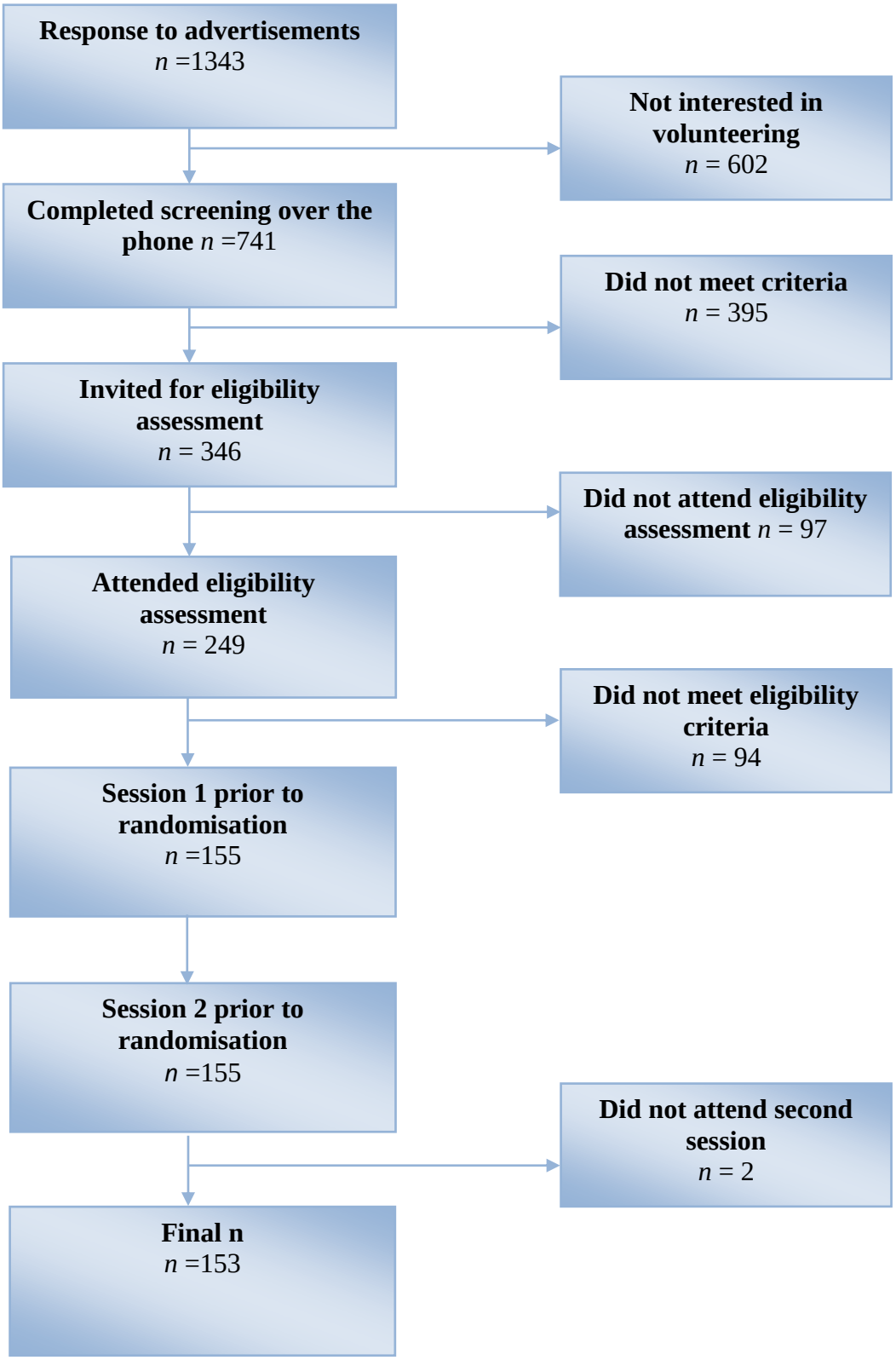
Participants were recruited over a period of two years through advertisements in the local community. This comprised posters in local shops, GP surgeries and clinics as well as local radio advertisements. Following letters, talks and professional meetings about the trial, GP's and other mental health professionals also referred interested and potentially eligible participants to a recruitment team. Figure 2 shows the flow and number of people that went through the trial[4]. There were a total of 153

[4] Over a two year recruitment phase individuals who expressed an interest contacted the recruitment team and completed an initial screening of main inclusion and exclusion criteria over the phone. In total, over 2 years of recruitment, 1343 people made contact with the research team. Of these, 741 were screened over the phone. Three hundred and forty six people met screening criteria and were sent an information sheet (see Appendix 5.1) and invited for an eligibility assessment. Two hundred and forty nine people attended the initial eligibility assessment. Prior to the start of the eligibility assessment, the researcher explained the process of the trial and participants were asked to read the information sheet for a second time and had the opportunity to ask questions. The researcher then took

participants who were eligible to take part in the trial. Participants' baseline characteristics are shown in Table 1 of the results section.

informed consent (see Appendix 5.2) and once consent was given the researcher then obtained socio-demographic background information (see Appendix 5.3) and conducted the eligibility assessment. Following the initial assessment, 94 participants were excluded for meeting one or more of the exclusion criteria's. Participants were required to attend two assessments prior to being randomised, 155 people attended the second assessment and two people withdrew following the second assessment. Prior to randomisation, consent was also obtained from the participant's General Practitioner. A hundred and fifty three people were randomised and analysis in this thesis uses data collected only for randomised participants who completed both baseline assessments.

Figure 2. Participant Flow Chart.



2.2.1 Inclusion and Exclusion criteria

Inclusion criteria for this trial included;

a) Participant currently meets NIMH criteria for recovery from major depression, as determined by the Structured Clinical Interview for DSM-IV-tr (e.g. participant reports a period of eight weeks where they have not experienced symptoms of depression. Participants were also deemed not in recovery if they had experienced one week out of the eight mentioned, in which they had a core symptom of depression (depressed mood or anhedonia) or suicidal feelings).
b) Participant reports prior symptoms of depression meeting SCID criteria for an episode of major depressive disorder.
c) Participant reports having experienced at least three episodes of major depression, two of which occurred in the past five years, and one of which occurred within the past two years.
d) Aged between 18 and 70 years.
e) Give informed consent.
f) The participant's General Practitioner agreed and consented to them taking part in the trial.

Exclusion criteria for this trial included;

a) A co-morbid disorder of schizophrenia, schizoaffective disorder, bipolar I disorder, alcohol or substance abuse or dependence, eating disorder or OCD as their main current problem.

b) Any ongoing meditation, counselling or psychotherapy more than once per month.
c) An inability to complete baseline assessments, for example through difficulties in English, or visual impairments.
d) A positive continuing response to CBT (e.g. participant had received CBT and not relapsed since).

2.3 Materials

The Structured Clinical Interview for DSM-IV-tr (SCID: First, Gibbon, & Spitzer, 2002). The SCID (see Appendix 5.4) is a semi-structured clinical interview that assesses symptoms for making diagnosis for Axis 1 disorders in Adults. It is one of the most widely used diagnostic assessments in research and for the purpose of the trial was completed by researchers who went through SCID training and regular supervision.

Hamilton Rating Scale for Depression (HRSD: Bedford, 1979). The HRSD is a state measure of depressed mood. It is a fifteen item interviewer rated measure that establishes current severity of depressive symptoms (see Appendix 5.5).

The Mini International Neuropsychiatric Interview (MINI) *Suicidality Tracking measure* (Sheehan et al., 1998). The MINI (see Appendix 5.6) is a 6 item interview questionnaire that tracks an individual's suicidal thoughts and behaviours in the past week.

Suicide Attempt Self-Injury Interview (SASSI; Linehan, Comtois, Brown, Heard, & Wagner, 2006). The SASSI (see Appendix 5.7) assesses features of non- fatal self

injury and suicide attempts including methods, lethality, intent, communication of intent, impulsivity and probability of intervention.

Beck Depression Inventory - II (BDI- II: Beck & Steer, 1996). The BDI-II is a widely used measure for the severity of depression in adults. The BDI-II yields a coefficient alpha of .92 for an outpatient population (as referred to in the manual). The BDI-II (see Appendix 5.8) is a 21 item self- report instrument that takes around five to ten minutes to complete. Participants fill out the BDI-II specifically referring to how they have been feeling in the past two weeks and today. Higher scores on the BDI-II indicate more severe depression.

Beck Scale for Suicide Ideation – present (BSSp: Beck, Kovacs, & Weissman, 1979). The BSSp is a 19-item self report questionnaire assessing the presence of suicidal desires, thoughts and plans in the past week including today (see Appendix 5.9). The BSSp yields a coefficient alpha of .89 (INSERT BECK, KOVACS & Weissman 1979 paper).

Beck Scale for Suicide Ideation – worst ever (BSSw: Beck, Brown, & Steer, 1997). The BSSw is a 21-item questionnaire used to gauge suicidal ideation and behaviour at the worst point in an individual's life. The BSSw yields a coefficient alpha of .88 (as referred to in the manual). The first 19 items are identical to those in the BSSp, but worded in the past tense. The participant is instructed to identify the time in their life when they have been at their most down and despairing. After identifying this time, individuals are instructed to complete five suicidal ideation screening questions. A score of zero on items 4 and 5 indicates that the participant does not need to complete a majority of the questionnaire and instructions lead the participant to the last two questions identifying any previous suicide attempts. There are no cut-off points on this questionnaire; a positive response on the last two

screening items may represent suicidal ideation and participants are asked to complete the whole questionnaire (see Appendix 5.10).

Anxiety (GAD -7: Spitzer, Kroenke, Williams, & Lowe, 2006). The GAD- 7 is a brief measure for assessing Generalised Anxiety in the past two weeks. The GAD-7 shows good internal consistency (INSERT Spitzer, Kroenke, Williams & Lowe 2006 paper). Seven items such as "*worrying too much about different things*" are completed on a four point scale from 0 *not at all* to 3 *nearly every day* (see Appendix 5.11).

The Ruminative Responses Scale (RRS; Treynor, et al., 2003). Rumination was measured using the RRS. INSERT Treynor et al 2003 demonstrated good reliability for the RRS (alpha coefficient at Time 1 was .90 and test retest correlation was .67).The scale assesses how often people respond to ruminative thoughts such as '*I think about how angry I am with myself*' on a four point scale from 1 *never* to 4 *always* (see Appendix 5.12).

The Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978). The DAS was developed to measure the negative attitudes that someone with depression may have towards themselves, the outside world or the future. Items such as "*I cannot be happy unless most people I know admire m*e" are rated on a seven point scale from *totally agree* to *totally disagree*. The DAS has good internal consistency with alpha's ranging from .84 upwards. The DAS consists of 40 items of which 30 items are reverse scored. Dysfunctional attitudes were measured using the DAS as total score and performance evaluation and approval by others sub-scales (see Appendix 5.13).

The Suicidal Thoughts Questionnaire (STQ: Williams, et al., 2010). To assess the way people react towards their thoughts of suicide, the STQ was developed (see Appendix 5.14). This measure includes twenty items such as "*I cannot erase images*

of suicide that come to mind" and "*I take comfort from thoughts of suicide*" rated on a five point scale from *1 strongly disagree* to 5 *strongly agree*. This new scale incorporates an amended version of the original 15 items from the White Bear Suppression Inventory (WBSI; D. M. Wegner & Zanakos, 1994) and 5 extra items, which were composed to address the possibility that suicidal thoughts are also a source of comfort. The STQ has good internal consistency, with a Cronbach alpha coefficient of α=0.83 (n=121) for the intrusion items, α=0.82 (n=121) for the comfort items and α=0.76 (n=121) for the suppression items (Williams, et al., 2010).

Timelines. Timelines were A3 charts marked with ages from ten up until seventy. Participants worked with the interviewer to identify and annotate the timeline with any major life events that have happened and any episodes of depression and /or suicidality that may have occurred (see Figure 2). The purpose of the timeline in the context of the trial was to inform therapists' understanding of participant's history in terms of pathology and life events.

2.4 Procedure

Participants who were screened over the phone and met initial screening criteria were sent an Information Sheet (see Appendix 5.1) and invited for an eligibility assessment. Prior to the start of the eligibility assessment, the researcher explained the process of the trial and participants were asked to read the information sheet for a second time and had the opportunity to ask questions. The researcher then took informed consent (see Appendix 5.2) and once consent was given the researcher then obtained socio-demographic background information (see Appendix 5.3) and conducted the eligibility assessment. The SCID was used initially to determine if

participants met inclusion criteria i.e. being in remission for a minimum of eight weeks. It was also used to verify prior episodes of major depression. The MINI was used in combination with the SCID and Hamilton to assess any current suicidality. Detailed information about clinical history and occurrences of suicidal ideation and behaviour were recorded using the SASSI. Participants were required to attend two assessments prior to being randomised. Before randomisation, consent was also obtained from the participant's General Practitioner. Analysis in this thesis uses data collected only from the 153 participants who completed both baseline assessments.

2.4 Data Collection and Identification of groups

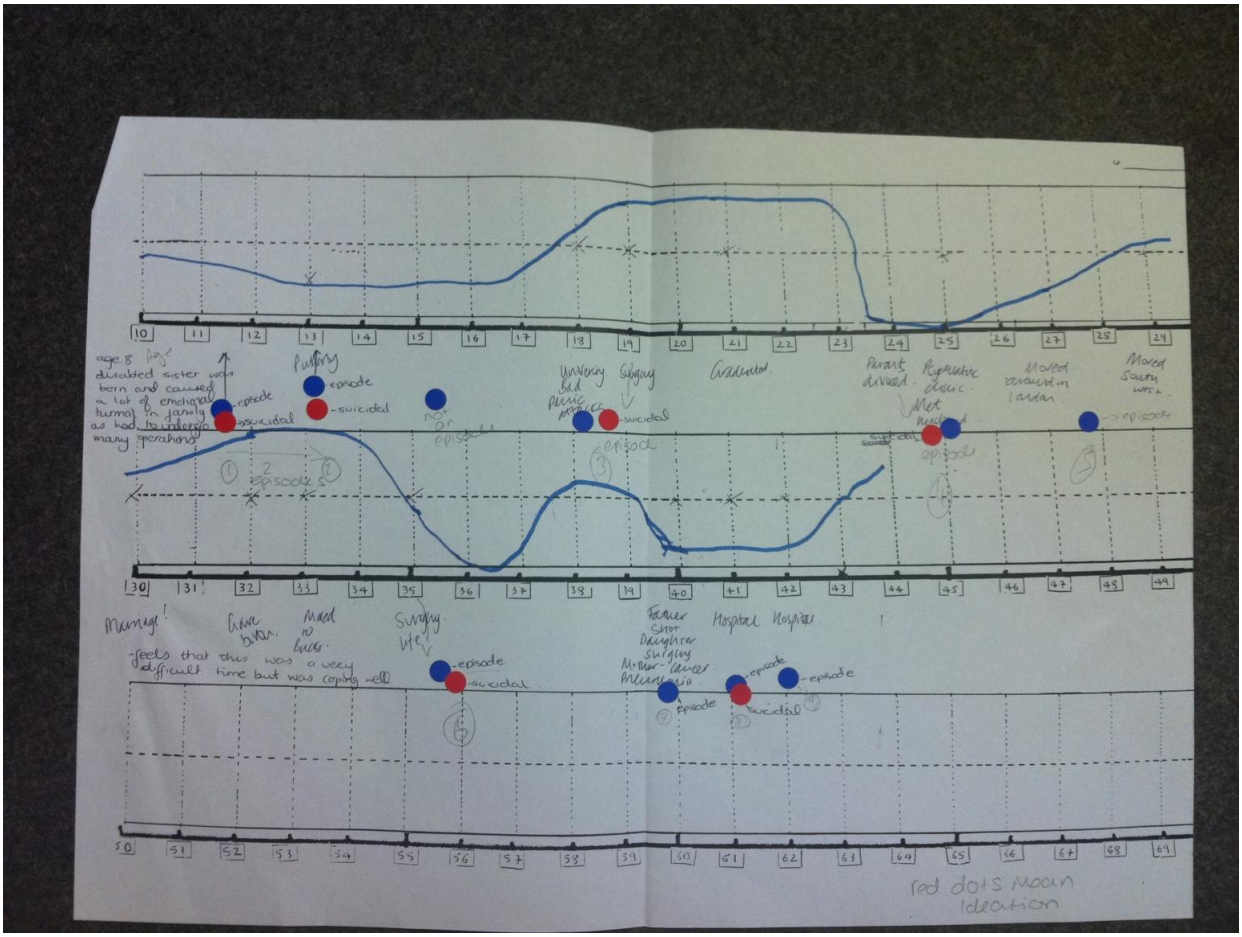
A major and novel aspect of this thesis is the process by which the timelines were systematically coded. The aim of gathering information from the timelines was to specify the nature of each episode of depression and age at which it occurred and therefore to identify the groups of interest. The SASSI, SCID and BSSw were used to validate the information collected from the timelines. For example, from the SASSI we can confirm the number of episodes of suicidal behaviour and then use the timeline to identify whether the behaviours occurred within a depressive episode and at what ages. It was important to combine information from all four instruments, as each has a different emphasis and collectively they provide comprehensive information on the history of depression and suicidality that the individual has experienced. The SASSI was useful in identifying number of suicide attempts and number of episodes of (non-suicidal) deliberate self harm. The SCID contained detailed information about the worst depressive episode and the nature of the episode i.e. if suicidal ideation was present. For the purpose of this study, thoughts of death

were not grouped with suicidal ideation; however a suicide plan was grouped with suicidal ideation[5]. The SCID and timeline were used collectively to identify the number of depressive episodes.

Figure 3 shows an example of a timeline completed by a participant. The numbers in the boxes refer to age. For this participant the blue line represents mood, with low mood being closer to the bottom of the chart. This individual had experienced nine episodes of depression, each marked by a blue dot. Out of these nine episodes of depression, this participant had also experienced suicidal ideation on six occasions (marked by a red dot). From the timeline, we can also see that the onset of depression and suicidality was in adolescence and it continued into their adult life.

[5] Thoughts of death according to O'Carroll et al., (1996) that do not specify intent to kill one self are not considered suicidal ideation and as we were interested in observing patterns in a chronic sample with suicidal ideation thoughts of death do not meet our desired requirements. Secondly thoughts of death can be considered conceptually ambiguous and in comparison to a suicide plan they are less concrete to observe. Consequently, it becomes difficult to be consistent when trying to identify thoughts of death with the intent kill one self.

Figure 3. Example of a Participant Timeline.



On average the timeline took about thirty minutes to complete (this varied according to age, number of life events and number of depressive and suicidal episodes). On occasion participants would find they would recall events and or episodes during the course of the assessment period, and in this case the timeline was revisited.

The timelines were completed by two different assessors working for the trial and collated for this study by the author. When coding the other assessor's timelines on a few occasions clarity was needed regarding the nature and age of episodes. On thirteen occasions there was a discrepancy between the timeline and the other measures. This may be because the timeline could not encompass the number or nature of episodes and one occasion no timeline was completed as the participant was too distressed. On such occasions the SCID, SASSI and BSSw were used to identify the episodes. Twenty one participants reported experiencing too many episodes to count. For these individuals data was only available for episodes identified on the timeline and SCID as these were their worst episodes and therefore, most memorable and easy to identify. For four participants a discrepancy of one episode was found between the number of episodes reported on the SCID and timeline, in this case one episode was coded as missing.

2.5 Definitions of Resolved and Unresolved Suicidality

Various definitions of unresolved and resolved suicidality can be derived from prior research, so a major issue was how best to define unresolved and resolved suicidality within this sample of individuals all of whom had highly recurrent depression. In reality, one can never truly know if suicidality has completely resolved or if suicidality may reappear at some point in the future, however, some best assumptions are needed for the purposes of analysis. Therefore, following extensive discussions the best way to categorise the groups was decided as follows:

It was decided that to increase confidence, all participants should have experienced at least two episodes of depression since their first onset of suicidality, therefore giving ample opportunity for a recurrence of suicidality to recur. Thus, those who did not have the opportunity to re-experience suicidality i.e. they only had suicidality in either their last episode of depression or their last two episodes of depression were excluded. The unresolved suicidality group consisted of anyone who had also reported suicidality in the last episode of depression (as well as at first onset of suicidality). In contrast, the resolved suicidality group consisted of participants who reported no suicidality in their two most recent depressive episodes. Those that had suicidality in their penultimate episode of depression i.e. although they had the opportunity to re-experience suicidality in their last depressive episode they did not meet our criteria for resolved or unresolved suicidality were also excluded.

Age of onset of depression was defined as the age at which depressive symptoms were first reported for a period of two or more weeks, consistent with the DSM-IV criteria assessed by the SCID. Similarly, age of onset of suicidality was considered to be the first time suicidal ideation or behaviour was reported (usually within a depressive episode; for only 4 people this was not the case). In this study, we defined adolescent onset of depression and suicide as an onset aged 18 or younger and therefore, adult onset was considered after age 18.

Although most authors use cut-off age 18 there is no consistency within the literature and early onset varies from 17 to 30 (Jaffee et al., 2002; Thompson, 2008; Zisook et al., 2004).

2.6 Analysis Plan

A one-way Analysis of Variance (ANOVA) and/or *t*- tests were used to compare groups on baseline characteristics and clinical measures[6]. The exceptions to this were categorical variables where Kruskal-Wallis and Chi-Square tests for independence were used. A Fisher's exact test was used where at least 2 cells had counts of less than 5. Where analyses were comparing onset of depression and suicidality, adolescent onset was considered age 18 or younger and adult onset was coded from 19 years of age. The Statistical Package for Social Sciences version 18.0 for Windows was used for all statistical analyses.

[6] All statistics are reported to 2 decimal points, with the exception of *p* where the exact value is reported.

3 Results

One of the main aims of this thesis was to see if, within a sample of participants with major depression and a history of suicidality, specific groups existed, characterised by patterns of resolved versus unresolved suicidality. If within our sample these groups are present then a second aim was to identify and compare their sociodemographic and cognitive characteristics. Comparisons were also planned against a sample of participants who have also had major depression but have never been suicidal, a control group. The final overarching aims of this thesis were to explore the trajectories of suicidality with the main focus being on the role of onset of depression in adolescence, and then the role of onset of suicidality in adolescence (with comparisons made against adult onset in both cases). Presence or absence of suicidality was assessed using three measures, the SCID (suicidal ideation, having a suicide plan or making a suicide attempt), the SASSI (deliberately harming or injuring yourself or attempting suicide) and the BSSw (suicidal ideation or attempt).

3.1 Participant Characteristics

Characteristics of the sample as a whole are shown in table 1.

Table 1. Sociodemographic and Clinical Information for the Whole Sample.

Measure	Participants (N=153)		
		Median	
MDD onset		17.00	
# MDD		6.00	
	%	Mean	SD
Current age	-	43.98	12.22
Gender			
Male	30.70	-	
Female	69.30	-	
Ethnicity			
White	94.10	-	
Other	5.90	-	
Relationship status			
No	38.90	-	
Yes	61.10	-	
Years in education	-	16.00	3.60
Current employment			
Employed	66.70	-	
Retired	8.50	-	
Unemployed	20.90	-	

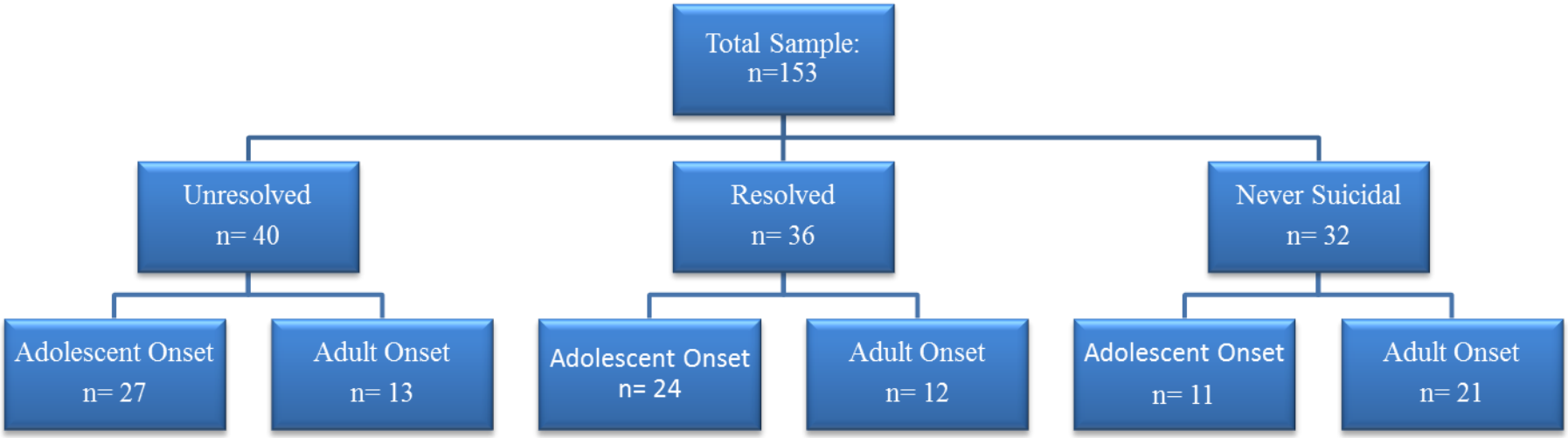
State Mood Measures			
BDI	-	8.30	7.74
BSS(p)	-	0.29	1.07
GAD-7	-	2.22	2.91
Prior Therapy			
Psychotherapy	77.80	-	
CBT	27.50	-	
Other disorders			
Current			
Anxiety	17.60	-	
Past			
Mania	3.30	-	
Substance	3.30	-	
Alcohol	9.20	-	
Anxiety	24.20	-	
Eating Disorder	11.10	-	

***Note*:** MDD onset= age of first major depression, # MDD = number of depressive episodes, Relationship status: Yes = participants that are currently in a relationship; No = participants not currently in a relationship, BDI-II = Beck Depression Inventory - II, BSS(p) = Beck Scale for Suicidal Ideation - present, GAD-7 = Generalised Anxiety Disorder, Prior Therapy: Psychotherapy = participants that have had psychotherapy; CBT = participants have had Cognitive Behavioural Therapy, Other disorders: Anxiety = A current or past anxiety disorder; Mania= a previous manic episode; Alcohol = a diagnosis of alcohol abuse or dependence; Substance = a diagnosis of substance abuse or dependence, Eating = a diagnosis of an eating disorder.

3.2 Identification of Groups.

A key question was what proportion of participants would show resolved and unresolved suicidality (Aim 1.1). The data showed that 40 people fell in the 'unresolved' group (i.e. had at least two episodes of depression since the first onset of suicidality and had suicidality in their most recent episode of depression) and 36 people fell in the 'resolved' group (i.e. those who had at least one episode of suicidality in their life time but had *not* reported suicidality in their last two depressive episodes) and the never suicidal group consisted of 32 people. Additionally, two intermediate groups were identified who did not fall clearly into either the resolved or unresolved group because, a) suicidality had occurred for the first time in the final or penultimate episode and therefore there were insufficient episodes since onset of suicidality to be clear whether suicidality was resolved or unresolved, this group consisted of 25 people and b) where suicidality was present in the penultimate episode, but not most recent episode (this group consisted of 20 people). These individuals were excluded from analysis observing the unresolved, resolved and never suicidal groups. Demographic and clinical characteristics of the unresolved, resolved and never suicidal groups are shown in Table 2 and Table 3 respectively. Suicidality often follows an intermittent pattern and we can never be sure of resolution (as noted above) and so the following analysis should be considered with the caveat that the resolved group may not be homogenous and only contain truly resolved individuals. The flow of participants though the different groups are shown in Figure 4.

Figure 4. Flow of Participants Through Suicidal and Non Suicidal Groups and Age of Onset for Depression



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Table 2. Sociodemographic Characteristics for Previously Suicidal and Non Suicidal Participants with Major Depression.

Characteristic	Unresolved (N=40)		Resolved (N=36)		Never (N=32)		Analysis		
	Mean	SD	Mean	SD	Mean	SD	F	df	p
Age (years)	40.91 [a]	11.50	46.98	12.11	46.08	13.09	2.57	105	0.05
Full-time education (years)	15.08	3.73	16.06	4.13	16.87	3.60	1.95	104	0.15
	N	%	N	%	N	%	χ^2	df	p
Female	26	65.0	27	75.0	21	65.6	1.06	2	0.59
Ethnicity									
White	38	95.0	35	97.2	31	96.9	0.46	2	0.79
Relationship status									
Yes	20	5.0	25	69.4	17	56.7	3.00	2	0.22
Employment									
Employed	25	67.6	25	71.4	22	68.8	1.97	2	0.37
Unemployed	3	8.1	4	11.4	4	12.5	-	-	-
Retired	9	24.3	6	17.1	6	18.1	-	-	-

***Note*:** Significant differences: [a]= unresolved is only different to resolved

Table 3. Clinical Information for Previously Suicidal and Non Suicidal Participants with Major Depression.

Characteristic	Unresolved (N=40)		Resolved (N=36)		Never (N=32)		Analysis		
	Median		Median		Median		H	df	p
MDD onset (years)	16.00		15.00		23.00		7.56	2	0.23
# MDD (episodes)	6.00		7.00		5.00		14.24	2	0.001
	Mean	SD	Mean	SD	Mean	SD	F	df	p
BDI-II	7.48[a]	7.34	12.11[b]	8.82	6.15	6.84	6.25	107	0.005
GAD-7	1.63[a]	1.90	3.41	3.74	1.81	3.60	3.99	104	0.04
	Mean	SD	Mean	SD	Mean	SD	t	df	p
BSSp	0.18	0.83	0.49	1.36	-	-	1.13	71	0.25
BSSw screen	6.95	2.49	6.25	2.85	-	-	1.14	74	0.26
BSSw	17.38	8.87	16.28	8.96	-	-	0.57	74	0.59
	N	%	N	%	N	%	χ^2	df	p
Co-Morbid disorders (current)									
Anxiety	5	12.5	6	16.7	3	9.4	0.81	2	0.67

Co-Morbid disorders (past)									
Anxiety	7	17.5	9	25.0	10	31.3	1.86	2	0.39
Alcohol	3	7.5	3	8.3	3	9.4	0.08	2	0.96
Substance	3	5.5	2	5.6	0	0.0	2.37	2	0.31
Eating	3	7.5	3	8.3	0	0.0	2.62	2	0.27

***Note*:** Significant differences: [a]= unresolved is only different to resolved, [b]= resolved is only different to never. MDD onset= age of first major depression, # MDD = number of depressive episodes, BDI-II = Beck Depression Inventory - II, BSS(w) screen = first five items of the Beck Scale for Suicidal Ideation - worstever, BSS(w) = all items of the Beck Scale for Suicidal Ideation – worstever, GAD-7 = Generalised Anxiety Disorder, Anxiety = A current or past anxiety disorder, Alcohol = a diagnosis of alcohol abuse or dependence, Substance = a diagnosis of substance abuse or dependence, Eating = a diagnosis of an eating disorder.

3.3 Comparisons of Clinical Characteristics in Unresolved, Resolved and Never Suicidal Groups

To determine whether there were differences between participants in the unresolved, resolved and never suicidal groups, participants were compared on sociodemographic characteristics, state mood, co-morbid disorders and clinical variables (Aim 2.1) using one-way ANOVA, Chi-Square and Kruskal-Wallis tests. There were no significant differences between the groups, for many sociodemographic characteristics (Table 2) including number of years in full time education, gender, ethnicity, relationship status or employment. However, there was a significant difference in current age; the unresolved group were on average 6.07 years younger than the resolved group, t (74) = 2.24, p = .03 and 5.17 years younger than the never suicidal group, t (70) = 1.79, p = .08, the resolved & never did not differ, t (66) = 0.29, p = .77 (Table 2). There were also no significant group differences in current suicidality or worst ever suicidality, but there were group differences in state BDI-II, the resolved group had significantly higher scores than the unresolved, t (74) = 2.44, p = .02 and never suicidal group, t (66) = 3.08, p = .003 (Table 2). The resolved group also reported as having slightly higher scores on the GAD-7 than the unresolved group, t (74) = 2.65, p = .01 (Table 2). However, scores are within the lower end of the mild range in all cases. The unresolved group had higher suicidal ideation at their worst time. There were no group differences in current or past co-morbid disorders. There were significant differences in age of onset of depression between the groups; the onset for the never suicidal group was 6 years later than the onset for the unresolved group and 8 years later than the onset for the resolved group (Table 2). There was also a significant difference between groups on the number of depressive episodes; the resolved group had more depressive episodes than the unresolved and never suicidal groups (Table 3).

3.4 Investigation of the Differential Activation Theory in Unresolved and Resolved Suicidality

A primary aim of this thesis was to evaluate whether or not the processes that are thought to be implicated in the Differential Activation Theory could predict resolution versus persistence of suicidality in individuals with recurrent major depression. Two possible ways of exploring this are investigated below. The first was to observe differences in the presence of cognitive processes between groups and the second was to observe whether any suicidality during the *first* episode of depression predicted suicidality during their most recent depressive episode.

3.4.1 Cognitive Processes in Unresolved and Resolved Suicidality

We hypothesised that higher levels of rumination and dysfunctional attitudes would be more characteristic of the unresolved group (Aim 2, Hypothesis 1) A one-way between-groups analysis of variance was used to compare the unresolved (n= 40), resolved (n= 36) and never suicidal (n= 32) groups on their levels of rumination and dysfunctional attitudes. There were no significant differences between the groups on the rumination total score F (2, 103) = 1.51 p= .23, the reflection sub-scale F (2, 103) = 1.74, p= .18, brooding sub-scale F (2, 103) =1.90, p= .15 and depressive sub-scale F (2, 100) = 1.44, p= .24. There also were no significant differences between the groups on the dysfunctional attitudes total score F (2, 98) = .15, p= .86, the performance sub-scale F (2, 101) = .22, p= .81 or approval sub-scale F (2, 105) = .07 p= .93. Unexpectedly, results show that levels of rumination and dysfunctional attitudes were

not significantly higher in the unresolved group compared to the resolved or never suicidal groups[7].

We also predicted that those whose suicidality was unresolved would experience higher levels of intrusive suicidal thoughts, suppress more suicidal thoughts or find suicidal thoughts more comforting. An independent samples t-test was conducted to compare the scores for the unresolved and resolved groups on the thought suppression, intrusion and comfort sub-scales of the Suicidal Thoughts Questionnaire (the never suicidal group was not included in the analysis as the questionnaire only refers to suicidal thoughts). There was no statistical difference in scores for the suppression items between the unresolved group (*M*= 19.62, *SD*= 4.66) and resolved group (*M*= 19.03, *SD*= 5.80), *t* (71)= .48, *p* = .63. There was however a significant difference between the intrusion scores for the unresolved group (*M*= 23.93, *SD*= .7) and resolved group (*M*= 19.46, *SD*= 8.55) suggesting that participants whose suicidality had not resolved were experiencing more intrusive suicidal thoughts when low, *t* (73)= 2.49, *p* = .02, two-tailed. There was no statistical difference in scores for the comfort items for the unresolved (*M*= 11.80, *SD*= 5.21) and resolved groups (*M*= 9.64, *SD*= 4.84), however, there was a trend in the predicted direction, *t* (74)= 1.87, *p* = 0.07.

Results suggest the unresolved group are experiencing more intrusive suicidal thoughts than the resolved group. However, this result is not unexpected since, by definition, the unresolved group have experienced suicidal thoughts more recently. However results also showed a trend towards the unresolved group reporting that they found suicidal thoughts more comforting. This result is interesting because if suicidal thoughts are a source of comfort when low, this may suggest that their occurrence will be reinforcing, and that suicidal thoughts may

[7] A difference was found between groups on age therefore, analyses for rumination and dysfunctional attitudes were redone controlling for age. For all results, no effect of group was found: rumination total score *F* (2, 102) = .47 *p*= .62, the reflection sub-scale *F* (2, 102) = 1.11, *p*= .33, brooding sub-scale *F* (2, 102) =1.84, *p*= .16 and depressive sub-scale *F* (2, 102) = .52, *p*= .59 dysfunctional attitudes total score *F* (2, 97) = .34, *p*= .71, the performance sub-scale *F* (2, 100) = .25, *p*= .78 or approval sub-scale *F* (2, 104) = .27 *p*= .77.

Power analysis indicated sufficient numbers group and could not account for the insignificant findings.

actually be elaborated. Prior research has shown that the more comforting suicidal imagery is perceived to be, the more severe an individual's worst point suicidality (Crane, Shah, Barnhofer, & Holmes, 2011).

As described above, initial analyses indicated no significant difference between the resolved and unresolved groups in worst point suicidality screening, t (74) = 1.14, p = 0.26, or total scores, t (74) = 0.54, p = 0.59. However, we were interested in further exploring whether comfort and intrusions were associated to the worst point suicidality in the resolved and unresolved groups.

To explore the relationships in the unresolved and resolved group, the association between comfort and intrusion sub-scales and the total scores on the BSSw (Aim 2.2) was calculated for each group using a Pearson's correlation coefficient. In the unresolved group there was a significant positive correlation between comfort and BSSw total scores (r = .35, n=40, p = .02), and between intrusion and BSSw total scores (r = .40, n=40, p = .01). In the resolved group, there was also a positive correlation between comfort and BSSw total scores (r = .34, n=40, p = .04), and between intrusion and BSSw total scores (r = .36, n=40, p = .03). These results suggest that as severity of the worst point suicidality increases so do levels of comfort from suicidal thoughts and the presence of intrusive suicidal thoughts in both unresolved and resolved groups.

The results above suggest limited evidence for cognitive differences between individuals with resolved and unresolved suicidality. In part this may relate to the difficulties in differentiating between individuals who have genuinely resolved their suicidality and those who simply show an inconsistent pattern, with suicidality being present in some episodes but not others. Our timeline data also relies on individuals to report occurrence of suicidal episodes and individuals may differ in their thresholds for reporting suicidal ideation. Given the fact that the groups did not differ on worst point suicidality, a marker which is known to be

associated with long term risk of suicide, we next explored whether the resolved and unresolved groups were matched in the occurrence and severity of prior suicidal behaviour.

We were interested in exploring possible ways of testing the Differential Activation Theory of suicide; that early in the course of depression associations are formed between low mood and depressive symptomatology (including suicidality) and that this can become a recurrent feature. One possible way of testing this assumption was through observing whether any suicidality was present in the *first* episode of depression and then seeing if suicidality was present *in their most recent* depressive episode within the resolved and unresolved groups (Aim 2.3). To determine the proportion of participants within the unresolved and resolved groups who had experienced suicidality in their first episode of depression, a chi-square test was conducted. For two individuals in the unresolved group we were unable to determine whether suicidality was present in their first episode of depression and so they have been coded missing and excluded from this analysis. Results showed there were no significant relationships: 42.5% (n = 17) of the unresolved group had suicidality in their first episode of depression whereas in the resolved group, 30.6% (n= 11) had suicidality in their first episode of depression, χ^2 (2) = 3.43, p =.18. Results suggest that *the presence of suicidality in the first episode of depression did not predict whether suicidality recurred in the most current depressive episode.*

3.5 Nature of Suicidality in Unresolved and Resolved groups

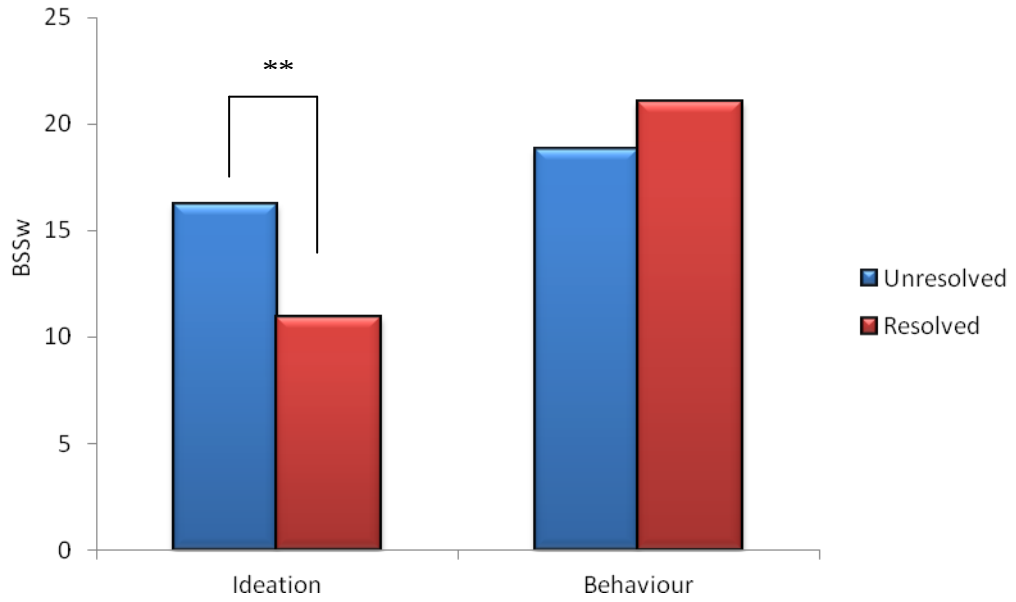
To explore the proportion of participants within the unresolved and resolved groups who had only experienced suicidal *ideation* compared to those who had *ideation and behaviour* (Aim 3.1) a chi-square test was conducted. Results showed that 55% (n= 22) of the unresolved group had experienced suicidal ideation only and 45% (n= 18) had reported

ideation and behaviour. Interestingly, the proportions in the resolved group were opposite to the unresolved group, 47.2% (n=17) had experienced suicidal ideation only and 52.8% (n= 19) had reported ideation and behaviour. These results appeared to suggest that more people in the unresolved group were experiencing only ideation. However, there was no significant relationships, χ^2 (2) = .76, p =.33.

Results so far seem to suggest that when comparing the unresolved and resolved groups there is limited difference between the groups. Although non-significant, one of the more unexpected observations was the higher proportion of people within the resolved group that had made a suicide attempt compared to the unresolved group. In contrast, a non-significant higher percentage of people within the unresolved group had had suicidal ideation only. Although not part of the planned comparisons, we were interested in further exploring this unanticipated finding. One possible way of investigating this was to split the sample into a) those that have only ever had ideation and b) those who have engaged in behaviour. We might then observe any differences within the unresolved and groups on clinical and cognitive measures.

A t-test was conducted to see if the unresolved and resolved groups differed in severity at their worst point firstly for those who had ideation only and then for those who had engaged in behaviour. Results showed that *in those who have only ever experienced suicidal ideation*, there was a significant difference in severity between the resolved and unresolved groups during their worst suicidal point, *the unresolved groups (M= 16.23, SD= 8.26) reported higher severity during their most severe point than the resolved group* (*M*= 10.94, *SD*= 6.84), *t* (37) = 2.13, *p* = .04. However, in those who had behaviour, there was no significant difference in severity between the resolved and unresolved groups during their worst time point, *t* (35) = .76, *p* = .44 (see Figure 4).

Figure 4. Nature of Unresolved and Resolved Groups.

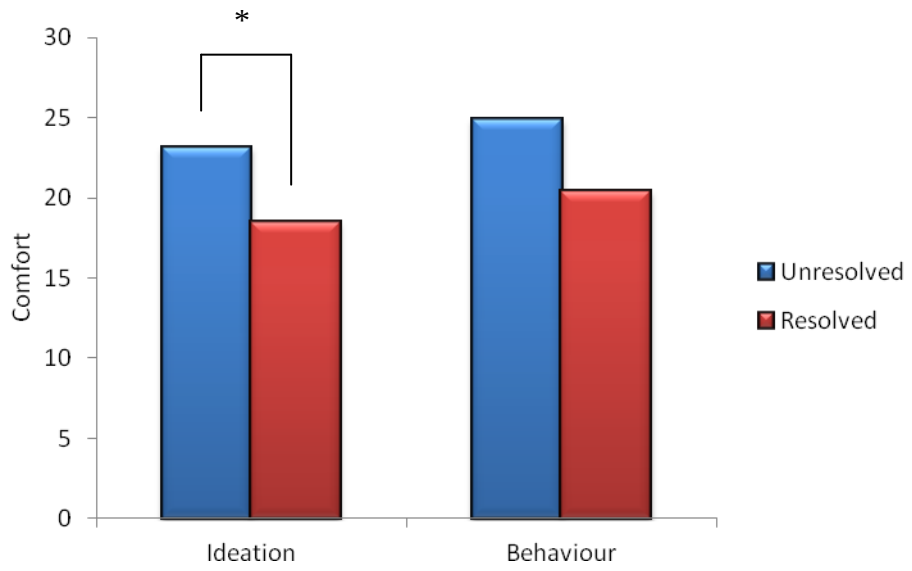


Note. BSSw = Beck Scale for Suicidal Ideation – Worst ever, ***p* <.05

The relationship between those who only had ideation and those who engaged in behaviour within the unresolved and resolved groups on two sub-scales of the STQ (intrusion and comfort) were assessed through t-tests. The suppression sub-scale was not assessed as previous findings in this thesis had not yielded significant results.

In *people who had only ever experienced ideation, the unresolved group reported having more comforting suicidal thoughts (M= 11.36, SD= 5.57) than the resolved group* (*M*= 8.41, *SD*= 3.89), *t* (37) = 1.86, *p* = .06. However, this trend was not present in those who had engaged in suicidal behaviour (see Figure 5) although the unresolved group did report slightly though non-significantly higher levels of comfort (*M*= 12.33, *SD*= 4.83) than the resolved group (*M*= 10.74, *SD*= 5.43), *t* (35) = .94, *p* = .35.

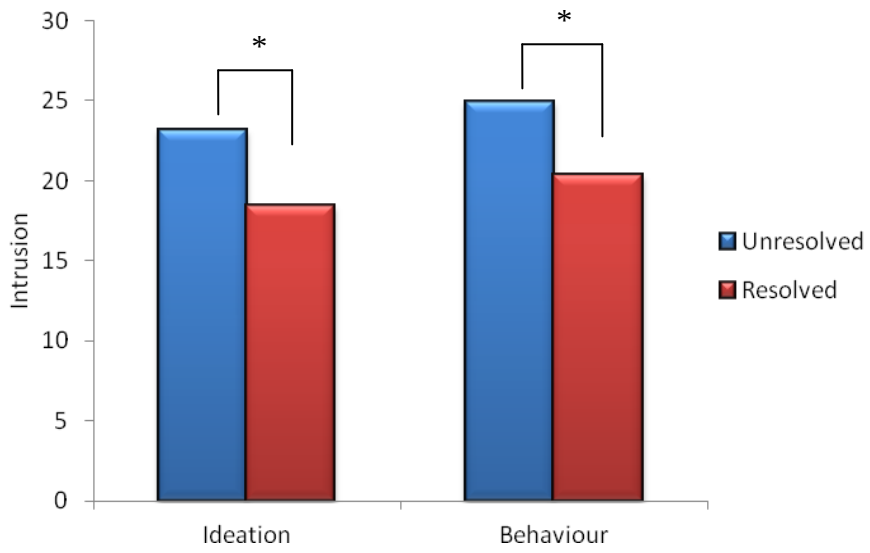
Figure 5. Levels of Comfort from Suicidal Thoughts for Ideation Only and Behaviour in Unresolved and Resolved Groups.



Note. Comfort = Suicidal Thoughts Questionnaire comfort sub-scale, *p =.06 (trend)

We then looked to see if there were any differences in the intrusion related items of the STQ. When looking at *people who had only ever experienced ideation, the unresolved group reported having more intrusive suicidal thoughts (M= 23.14, SD= 8.06) than the resolved group* (*M*= 18.47, *SD*= 8.20), *t* (37) = 1.78, *p* = .08. Furthermore, this trend in the intrusion items was also present at a marginal level in those who have had engaged in suicidal behaviour (see Figure 6) with the unresolved (*M*= 24.89, *SD*= 5.52) and resolved group (*M*= 20.39, *SD*= 9.00), *t* (34) = 1.80, *p* = .08.

Figure 6. Amount of Intrusive Suicidal Thoughts in Those who have had Ideation Only and Behaviour in Unresolved and Resolved Groups.



Note. Intrusion = Suicidal Thoughts Questionnaire intrusion sub-scale, *p =.08 (trend)

Results suggest that for those who have only ever had suicidal ideation people in the unresolved group have a significantly more severe worst episode than the resolved group. The unresolved group also reported experiencing more comforting suicidal thoughts then the resolved group (at a trend level) and more intrusive suicidal thoughts (at a trend level). These findings were not always mirrored in those who had engaged in behaviour. No difference was found between the groups at the worst ever point, there were also no differences in scores from the comfort sub-scale however, there was a trend in the intrusion subscale as the unresolved group reported higher scores. The pattern seems to be that, once there has been an attempt, the severity of the worst point does not predict whether someone remains suicidal across recurrent depressive episodes.

3.6 Trajectories of Depression and Suicidality in Participants with Different Onset Profiles.

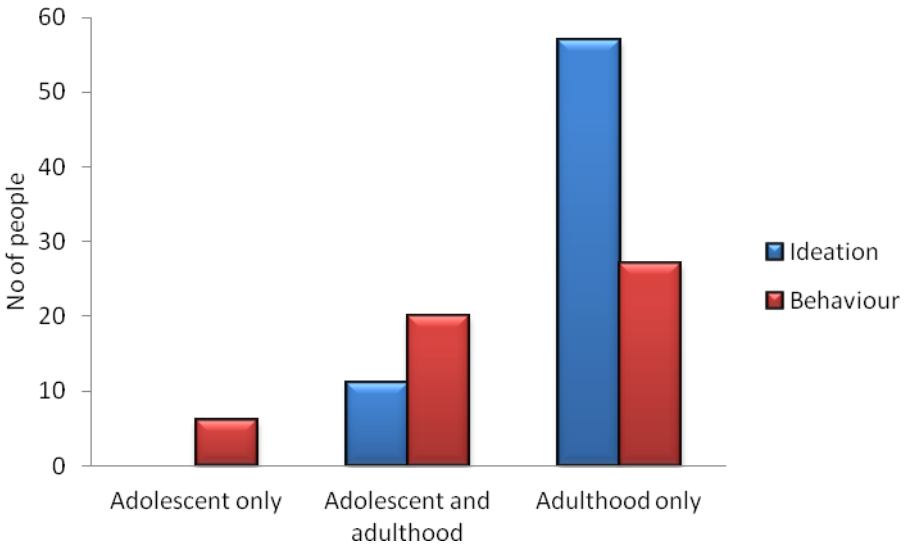
Within the sample of participants with recurrent depression, one of the aims was to observe the patterns of onset in depression and suicidality, paying particular attention to the role of adolescent onset (Aim 4). This is of particular interest as it has been suggested that depression occurring in adolescence is associated with worse long term outcome including higher rates of suicidality. However, we do not know whether this increased risk of suicidality actually manifests itself in adolescence or later in the course of the illness, in those with an adolescent onset of depression, and analysis of the time line data may provide important and novel information in this regard.

Confirming previous findings, it has already been demonstrated that the resolved and unresolved suicidal groups both have a significantly earlier age of onset of depression than the non-suicidal group. However, is suicidality evident from early in the course of depression for those people with adolescent-onset depression that ultimately becomes suicidal? We examined the proportion of participants with (1) suicidality that was confined to adolescence, (2) suicidality that emerged in adolescence and continued into adulthood, and (3) suicidality with an onset in adulthood (Aim 4.1). For analysis referring to onset of depression the whole sample of n = 153 was used. For analysis referring to the onset of suicidality, those who had reported suicidaltiy were included (n = 121).

Interestingly, we found that only 6 people in our sample had suicidality confined to adolescence. A further 31 people had suicidality both in adolescence and in adulthood and 84 participants reported suicidality that had emerged in adulthood. Of these 84 people who had experienced suicidality only in adulthood, 38 participants had their onset of depression in adolescence. We were interested in observing the nature of suicidality in each of these groups.

Results (Figure 7) suggest that a higher proportion of suicidal behaviour (as opposed to ideation only) is present for those whose suicidality has been confined to adolescence, in fact all 6 people had engaged in behaviour. In those who have been suicidal in their adolescence and have also re-experienced suicidality in their adulthood, a significantly higher proportion of people had engaged in behaviour than had ideation only. The opposite pattern was found in those who have only been suicidal in adulthood. Results suggest that they tend to be experiencing more suicidal ideation than behaviour (see Figure 7). A Chi-Square test showed that the proportion of people who have engaged in behaviour is higher in those who have an onset of depression in adolescence; 71.7% of behaviours come from those who have had an onset of depression in adolescence compared to 28.3% of those who have engaged in behaviour have had their onset of depression in adulthood, χ^2 (1) = 4.41, p = .04.

Figure 7. Nature of Suicidality Experienced According to Onset.



3.7 Identifying Onset of Depression and Suicidality.

Adolescent onset in this sample is associated with increased risk of suicidality. Specifically 87% of people who had adolescent onset depression became suicidal at some point in the course of their illness in comparison to only 70% of individuals with adult onset depression. However, only 43.5% of those with an onset of depression in adolescence were actually also suicidal in adolescence.

These findings suggest that the increased risk of suicidality in individuals with adolescent onset depression does not necessarily manifest itself in adolescence. However, in a recurrently depressed sample, suicidality, once present in adolescence is rarely confined to adolescence, and more often than not it will reappear in adulthood. To further explore the trajectories and patterns of onset, we initially observed characteristics in those with an onset of depression in adolescence versus adulthood and then also for those with an onset of suicidality

in adolescence versus adulthood. For this set of analyses, where appropriate (i.e. when not analysing unresolved and resolved suicidality) we used the complete sample (N = 153).

3.7.1 Trajectories and Patterns of Onset in Depression.

To see if an onset of depression in adolescence would also indicate a more severe worst ever suicidality than on onset of depression in adulthood (Aim 4.3) a t-test was conducted. Results showed that within this sample those who have an onset of depression in adolescence (*M*= 17.06, *SD*= 9.48) also reported more severe worst ever suicidality than those whose onset of depression is in adulthood (*M*= 11.13, *SD*= 9.72), *t* (151) = 3.80, *p* = <0.001.

We were also interested in exploring cognitive mechanisms that have been implicated in depression. We used a t-test to compare scores of the adolescent and adult onset groups on their levels of rumination (RSQ), dysfunctional attitudes (DAS) and the thought suppression, intrusion and comfort sub-scales of the STQ (Aim 4.3).

There were no significant differences between the groups on the rumination total score *t* (149)= .20 *p*= .57, the dysfunctional attitudes total score *t* (142)= .06, *p*= .36 and the suppression items of the STQ, *t* (151)= 5.90, *p* = .95. Results show that levels of rumination and dysfunctional attitudes or suppression items of the STQ were not significantly higher in the adolescent onset group compared to the adult onset group. There was however a significant difference between the intrusion scores for the adolescent onset group (*M*= 22.16, *SD*= 8.82) and adult onset group (*M*= 19.10, *SD*= 8.09) suggesting that participants whose onset of depression was in adolescent were more likely to experience intrusive suicidal thoughts when low, *t* (148)= .75, *p* = .03, two-tailed. There was also a statistical difference in scores for the comfort items between the adolescent onset group (*M*= 11.14, *SD*= 5.08) and

adult onset groups (*M*= 8.90, *SD*= 4.28), *t* (151)= 9.22, *p* = .004, suggesting that participants whose onset of depression was in adolescent were more likely to find suicidal thoughts comforting when low.

A series of Chi-Square tests was conducted to see if there were any differences in past comorbid disorders (including alcohol, substance, eating disorders and anxiety) and current anxiety disorders between the adolescent onset and adult onset of depression groups. Results showed the two groups did not differ, for all cases χ^2 (1) = < 1.25, p = >.35 except for current anxiety which was a trend χ^2 (1) = 2.91, p = .07.

3.7.2 Trajectories and Patterns of Onset in suicide.

We were interested to explore the findings that have been observed in depression onset and see if they also extended to suicidality onset.

A t-test was conducted to see if there were any differences in scores on the BSSw between the adolescent onset of suicidality group and the adult onset suicidality group (Aim 4.4). Results showed that the adolescent onset group (*M*= 20.05, *SD*= 8.15) reported a more severe worst ever suicidality than the adult onset group (*M*= 15.95, *SD*= 8.90), *t* (118) = 2.43, *p* = .02. These results suggest that those who have experienced suicidality in adolescence are more likely to have a more severe worst point than those who have only experienced suicidality in adulthood.

To investigate the cognitive variables that are were found in onset of depression we followed the same pattern of t-tests to compare levels of rumination, dysfunctional attitudes and thought suppression, intrusion and comfort sub-scales of the Suicidal Thoughts Questionnaire in the adolescence versus adult onset of suicidality groups (Aim 4.5). There

were no significant differences between the groups on the rumination total score *t* (116)= .34 *p*= .74. There were no significant differences between the groups on the dysfunctional attitudes total score *t* (113)= .52, *p*= .61. Results show that levels of rumination and dysfunctional attitudes were not significantly higher in the adolescent onset group compared to the adult onset group. There was also no statistical difference in scores for the suppression items, *t* (115)= 1.02, *p* = .31. Unexpectedly there was also no statistical difference in scores for the comfort items, *t* (115)= 1.02, *p* = .31. However, there was a significant difference between the intrusion scores for the adolescent onset group (*M*= 24.92, *SD*= 7.92) and adult onset group (*M*= 21.86, *SD*= 7.69) suggesting that participants whose onset of suicidality was in adolescence were more likely to experience intrusive suicidal thoughts when low, *t* (117)= 2.00, *p* = .04, two-tailed.

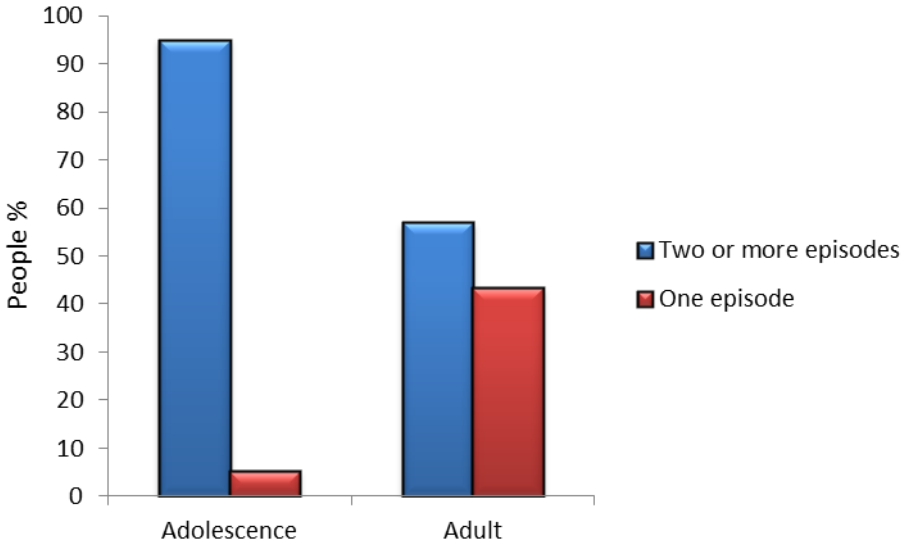
A series of Chi-Square tests was conducted to see if there were any differences in comorbid disorders (including alcohol, substance, eating disorders and anxiety past and current) between the adolescent onset and adult onset of suicidality groups. Results showed the two groups did not differ χ^2 (2) = < .18, p = >17.

3.8 Adolescent onset and recurrent suicidality.

Only approximately half of those individuals with adolescent onset of depression were also suicidal in adolescence. However outcomes for this severely affected group may be particularly poor. Before investigating whether those who had an onset of suicidality in adolescence experience increased numbers of episodes of suicidality, we initially checked to

see if there were differences in the number of depressive episodes between the adolescent and adult onset groups overall. A independent samples *t*- test showed there were no significant differences between the number of depressive episodes, t (101)= 1.82, p = 0.07, two-tailed, although there was a trend towards an increased number of depressive episodes in the *adult* onset group. We found that *94.9% (n= 35) of people who had onset of suicidality in adolescence (n= 37) had at least two or more further suicidal episodes* (see Figure 8). In contrast, in *those who had onset of suicidality in adulthood (n= 84) only 56.8% (n= 48) had two or more suicidal episodes*. This result was highly significant χ^2 (1) = 17.90, p= <0.001. This result remained significant when adults whose first episode of suicidality occurred within the last two depressive episodes were excluded, χ^2 (1) = 14.25, p= <0.001. Thus suicidality occurring in adolescence it is associated with a much higher likelihood of recurrence of suicidality, even in a highly recurrent sample.

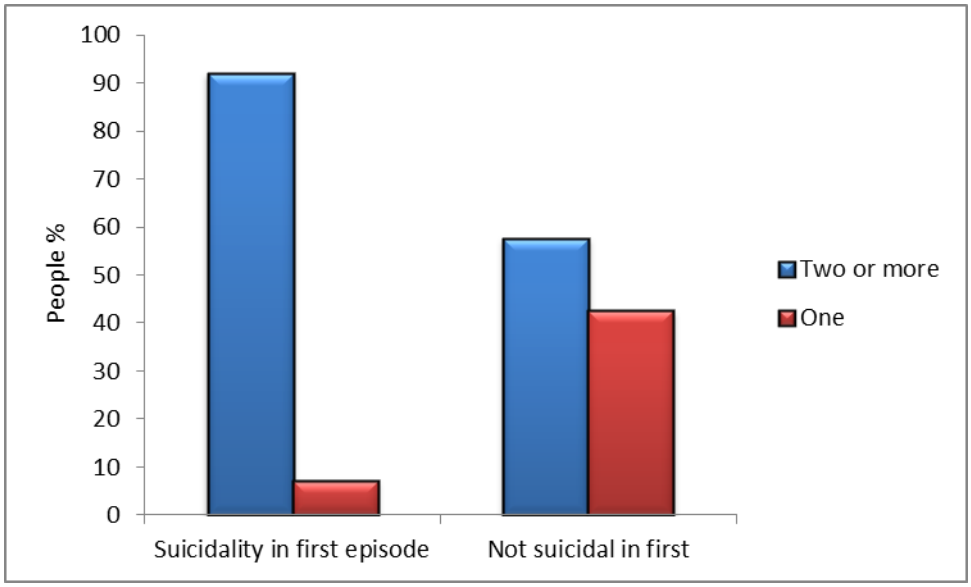
Figure 8. Percentage of People in Adolescent and Adult Onset of Suicidality with Repeated Suicidal Episodes.



It was hypothesised that individuals who have been suicidal in their first episode of depression would be more likely to experience repeated episodes of suicidality. Four people in the group who had repeated episodes of suicidality were coded as missing from the analysis as the nature of their first episode was unclear. As predicted results showed that *91.9% of people who had suicidality in their first episode of depression had at least two more suicidal episodes*. In contrast, *in those who had not experienced suicidality in their first episode of depression 57.5% had at least two or more suicidal episodes* (see Figure 9)[8]. This difference was statistically significant χ^2 (1) = 13.84, p= <.001. This result also remained significant when those with suicidality in their last two episodes were removed, χ^2 (1) = 8.50, p= .003. Results indicate that irrespective of whether depression occurs for the first time in adolescence or adulthood, experiencing suicidality in the first episode is predictive of recurrent suicidality over the later course of the condition.

[8] It is important to note that although the percentages are similar for onset of suicidality and suicidality in first episode, we are observing two entirely different phenomena. The former is concerned with onset of suicidality and the latter is concerned with being suicidal in the first depressive episode regardless of when onset is.

Figure 9. Percentage of People Who Experienced Further Suicidal Episodes Following Either Suicidality in Their First Episode or Not.



4 Discussion

4.1 Overview

The relationship between unipolar depression and suicide is evident (Beautrais et al., 1996). However, the sociodemographic and cognitive mechanisms that underlie recurrent versus resolved suicidality are yet to be studied. Distinctive cognitive factors that contribute to adolescent onset of depression and suicidality are also poorly understood. The overall aims of this thesis were to investigate whether distinct suicidal groups, characterised by different patterns of recurrence of suicidality, could be identified within a sample of participants who all had recurrent major depression. Specifically, we wanted to identify individuals who did or did not show resolution of their suicidality across successive depressive episodes. If these specific groups existed within our sample, then another aim was to also compare the socio-demographic and clinical characteristics of each group to those who had never been suicidal. Finally we were interested in exploring the nature and correlates of adolescent onset versus adult onset depression and suicidality.

The main findings of the thesis were that it was possible to delineate resolved and unresolved groups within our sample of recovered depressed people. That is, once suicidal ideation or behaviour emerged within the course of recurrent major depression it was not inevitable that it would re-emerge with each subsequent depressive episode. However, comparisons showed only limited differences in socio-demographic and clinical characteristics between the unresolved and resolved groups. Results also showed that more than half of our sample had an onset of depression during their adolescence. Those with an onset of suicidality in adolescence experienced a greater number of subsequent suicidal episodes. Finally, the presence of suicidality within the first episode of depression rendered individuals more

vulnerable to experiencing recurrent suicidality in the future. This was irrespective of age of onset.

This study makes a unique contribution to existing research by investigating a novel set of specific predictions made by the Differential Activation Theory that have not previously been studied. This section proceeds with a more detailed presentation of the findings from this study, followed by a discussion of the strengths and limitations, clinical implications and suggestions for further research.

4.2 Main Findings

4.2.1 Unresolved Versus Resolved Suicidality

In order to explore in more detail the factors associated with resolution or persistence of suicidality within depression, this study used data collected from clinical materials and self-reported questionnaires to identify sub-groups within the population of participants with recurrent depression. The Differential Activation Theory of Suicide suggests that suicidality once it has emerged in one depressive episode, is likely to become part of a recurrent pattern. However, other research suggests that suicidality can also resolve over time. The cognitive factors hypothesised to be associated with the recurrence of depressive episodes were assessed to determine whether these factors also differentiated groups with recurrent (non-resolved) versus non-recurrent (e.g. resolved) suicidality. Within a sample with recurrent depression, both resolved and non-resolved suicidality groups exist. However, the unresolved, resolved and never suicidal groups did not appear to be different in their sociodemographic presentation except for their current age. The unresolved group were younger than the other groups. Further examination of the three groups showed that levels of rumination and dysfunctional attitude were similar across all groups and suppression of suicidal thoughts was similar between the

suicidal groups. Although rumination has been implicated in previously suicidal and depressed individuals, in this sample rumination appears not be predictive of recurrent suicidality across depressive episodes. Rather it may be that rumination generally is representative of individuals who have depression and/ or suicidality. By definition a ruminative style is associated with focus on depressive symptoms and as this sample is currently well and as such currently experiencing little negative content they may be not actively engaging in a ruminative style of thinking and the measure used may not be sensitive enough to show differences (even compared to a never suicidal group). Similarly, dysfunctional cognitions are not as easily measureable in between episodes (Miranda, et al., 1990; Segal, et al., 1996) .

Interestingly both suicidal groups, when low, report suppressing similar amounts of suicidal thoughts. However, the unresolved group reported that during low mood they have more intrusive suicidal thoughts. Theoretically, thought suppression can be differentiated from unwanted intrusive thoughts; intrusive thoughts may occur without any prior attempt to suppress thoughts or on the other hand they can occur as a consequence of failing to suppress thoughts. It has also been postulated that unwanted intrusive thoughts are linked to more psychological distress than thought suppression (Höping & de Jong-Meyer, 2003).

The unresolved group found more comfort from suicidal thoughts than the resolved group. If suicidal thoughts are more comforting for the unresolved group then this might explain why suicidality remains present (e.g. via a process of reinforcement). It may also be that comforting suicidal thoughts when re-experienced have a sense of familiarity. The previous link between comfort and worst-point suicidality (Crane, et al., 2011) was also present within the unresolved and resolved groups: as the severity of the worst point suicidality increased so did the levels of comfort and intrusive suicidal thoughts.

In the unresolved group more people had experienced suicidal ideation than had engaged in suicidal behaviour. In contrast, in the resolved group, a higher proportion of people had

engaged in suicidal behaviour than had experienced suicidal ideation only. Amongst those who only reported suicidal ideation, the unresolved group had a more severe worst ever suicidality score and reported having more comforting and intrusive suicidal thoughts than the resolved group, however, this was not found in those who have engaged in behaviour (i.e amongst those who had engaged in suicidal behaviour at some point, no differences were observed between resolved and unresolved suicidality in comfort associated with suicidal thoughts). One possibility is that the experience of suicidal behaviour is traumatic and results in lower levels of comfort in suicidal ideation, and less reinforcement of suicidality. This may account for the greater apparent resolution of suicidality in those with prior suicidal behaviour. The resolved group also had slightly more depressive episodes than the unresolved group consistent with previous findings (Ahrens, Berghöfer, Wolf, & Müller-Oerlinghausen, 1995).

4.2.1 Pre-adult onset of depression and suicidality – implications

Analysis of the time line data provided important and novel information. In line with previous findings (that show the onset of depression is significantly younger for those who have been suicidal) the resolved and unresolved suicidal groups both had a significantly earlier age of onset of depression than the non-suicidal group (Claassen, et al., 2007).

It is known that pre-adult onset of depression is associated with increased risk of suicidality (Zisook, et al., 2007). Previous research, to the best of our knowledge, has not established whether this increased risk of suicidality associated with pre adult onset actually *manifests* itself in adolescence or only manifests itself later in the course of the illness. The

normal assumption might be that if depression starts early so would suicidality (see page 23 for risk factors). In this sample we were able to look at this in more detail.

A majority of people who had adolescent onset depression became suicidal at some point in the course of their illness. However, only roughly half of those with an onset of depression in adolescence were actually also suicidal in adolescence. This suggests *that the increased risk of suicidality in individuals with adolescent onset depression does not necessarily manifest itself in adolescence.* However, in a recurrently depressed sample, once present in adolescence, suicidality is rarely confined to adolescence, and more often than not it will reappear in adulthood (only six individuals showed suicidality confined to adolescence). This is consistent with the Differential Activation Theory of Suicide; it appears that once suicide becomes part of a toxic recurrent pattern (in this case in adolescence) suicidality will tend to reappear again when low mood is re-experienced (in adulthood). Furthermore, we found that *almost all of those who had their onset of suicidality in adolescence had a further two or more suicidal episodes whereas the proportions dropped to just over half in the adult onset of suicidality group.*

To further understand the nature of suicidality in individuals with different patterns of onset it is interesting to note that suicidality that presents itself in both adolescence and in adulthood was largely behavioural in nature. Interestingly, more than half of those whose suicidality had emerged in adulthood reported suicidal ideation only, although about half of this group had their onset of *depression* in adolescence. The proportion of people who have engaged in suicidal behaviour is therefore higher in those who have an onset of depression in adolescence, however the adult onset of depression group report having slightly more depressive episodes. This suggests that *in adolescent onset depression, although the risk of suicidality is elevated - and suicidality may emerge in adulthood - if its emergence is delayed until adulthood it tends to be part of a less severe pattern.*

Those with an onset of *depression* in adolescence (with or without suicidality at that point) ultimately reported more severe worst ever suicidality and more intrusive suicidal thoughts than those with an onset of depression in adulthood, indicating increased distress in the adolescence onset group. This pattern is also observed in those with an onset of *suicidality* in adolescence. Again, as described above, adolescent onset suicidality is ultimately associated with more severe worst ever suicidality and more intrusive suicidal thoughts, than onset of suicidality in adulthood. Despite this, an onset of depression or suicidality in adolescence was not associated with differences in co-morbid disorders, levels of rumination, dysfunctional attitudes or thought suppression.

Interestingly, a large proportion of people who had experienced suicidality in their first episode of depression also experienced a further two or more episodes of suicidality and this again decreased to just over half for those who did not experience suicidality in their first episode of depression. This is consistent with Differential Activation Theory in the sense that it suggests that when suicidality is present during the initial establishment of depressogenic cognitive patterns it may take a more central role, or be more closely enmeshed with other symptoms, increasing the risk of its recurrence. Our data suggest a development of the Differential Activation Model: that when suicidality occurs *later* in the course of a recurrent depression, it may be a more peripheral feature, not so closely tied in with other associated features of the depressive pattern. Future episodes of depression will therefore vary in regard to whether suicidality is shown. If this is the case, then it ought also to be true of other aspects of depression and future research should address this (see below).

4.3 Strengths, Limitations and Future Research

The current study has a number of limitations. The pattern of suicidality was not as straightforward as anticipated and roughly a quarter of the sample of people could not be classified into our three groups (unresolved, resolved and never suicidal) as their suicidal episodes were intermittent. Furthermore, one can only approximate if someone has resolved their suicidality. This raises difficulties in defining what 'resolved suicidality' really entails. This study was restricted to data that was already determined by the needs of the trial and therefore we could not at the outset recruit groups with particular characteristics. However, this latter limitation also has the benefit that we have an insight into naturally occurring patterns of onset and recurrence of suicidality, albeit in a sample with specific characteristics.

This study employs a cross sectional design and therefore results are confined to the time that participants entered the trial. Further research should aim to adopt a longitudinal design to expand on these current findings. Additionally, it may also be of interest to have a follow-up period to fully ascertain the trajectories of suicidality in both unresolved versus resolved suicidality, for example to determine whether cognitive factors predict 'persistent resolution' versus re-emergence. Specifically, longitudinal research may be used to examine if initial levels of rumination and dysfunctional attitudes at onset are predictive of changes in suicidality over time.

This study was also limited by the fact that the sample is currently well. Differences between groups on cognitive measures may only be apparent when observing a currently depressed patient group. Additionally, participants in this study had at least three previous depressive episodes and were in remission, so findings may be applicable to a clinical sample with highly recurrent depression. However, this clinical history also renders the participants at very high risk and thus identifying patterns of suicidality in this group is crucial for treatment

interventions. Reducing suicide risk entails improving the outcomes for the at most risk groups for suicidal ideation and behaviour. Nevertheless, future research should aim to also draw observations from other groups known to be at high risk for suicidality, such as those with borderline personality disorder.

The study is also limited by the exclusion of other factors such as hopelessness, problem solving, guilt and failure, which are known to be involved in the maintenance and persistence of depression and suicidality. These should be explored in future research. Again, a longitudinal design might provide interesting insights in ascertaining what is central to the associative structure for these individuals.

One other final limiting factor is that we did not know the type and length of treatment that individuals may have had. Typically those who have a pre-adult onset of depression remain untreated for a longer period of time than those who have an onset of depression in adulthood (Coryell et al., 2009), so we cannot be sure that we are observing the effects of pre-adult onset only or the effect of untreated episodes of major depression.

Despite these limitations, the use of timelines was a highly valuable tool in obtaining information with regards to many aspects of this thesis, especially, depicting the unresolved and resolved groups and suicidality across numerous episodes. The additional advantage of having other measures that validated the information in the time lines meant that we can be fairly confident that the data was robust.

4.4 Clinical and Theoretical Implications

Understanding the psychological and sociodemographic variables associated with trajectories of suicidality can inform a variety of assessment, treatment and prevention interventions. Results from this study indicate that individuals that present with an onset of

depression in their adolescence do not always show signs of suicidality until later on in the course of their illness. Clinically, care needs to be given since as depression recurs, the risk of becoming suicidal remains, with half of those with an adolescent onset of depression in this sample becoming suicidal only in adulthood.

The Differential Activation Theory of suicide in its simplest form accounts for the pattern of suicidality experienced by some of the individuals in this sample, specifically it appears that *when suicidality has started early in the course of the illness it remains a persistent and stable feature.* However, for others the emergence of suicidality later in the course of their illness may be attributed to a secondary component. The Differential Activation Theory may account for 'pre-priming' individuals whose onset of *depression* is in adolescence but the onset of *suicidality* is in adulthood. One possibility may be that during this early phase (around onset of depression) cognitive mechanisms are established and later in the course of the illness external factors that trigger distressing memories can activate suicidality e.g. memories of being abused when seeing something on the TV or in the media. Yet, we can see in our data that suicidality in this form seems to be unstable in comparison to suicidality that emerges as an initial feature. Treatment for this at-risk group needs to focus on early warning signs and how do deal with prevention even though suicidality is unstable in this group.

Within therapy, efforts should also be made to target levels of comfort from suicidal thoughts as well as intrusive suicidal thoughts, as these seem to be associated with whether suicidality remains a constant feature in those who have had suicidality in their past depressive episodes and in their most current depressive episode.

Understanding and management of suicidal relapse should also consider adopting a similar activation paradigm (discharge policy) to that of Brown et al., (2005) whereby following 10 sessions of Cognitive Behavioural Therapy patients were only discharged on the basis of their ability (within a treatment session) to respond adequately to deliberately-

activated thoughts, feelings and images associated with prior suicidal times. This allowed patient and therapist to observe if individuals responded in an adaptive manner. Discharge and completion of treatment therefore depended on being able to employ a successful management strategy.

Importantly, results from this study, showing that a large proportion of people with suicidality in their first episode of depression in this study had a further two or more suicidal episodes, entail that assessment of future suicidal risk should also include the question of whether suicidality was present in *initial* depressive episodes.

4.6 Conclusion

This thesis takes advantage of exploring naturally occurring patterns within a community population and therefore produces highly applicable findings for both research and clinical settings. The results and be categorised into three main sections that are summarised. Firstly, to our best knowledge this was the first study within a recurrently depressed sample that observed cognitive and sociodemographic patterns that would characterise those who have appeared to have resolved their suicidality and those who appear to continue experiencing suicidality versus those who have never been suicidal using timelines. We found that in a recurrently depressed sample although specific patterns of suicidality were present (unresolved and resolved) it was difficult to observe differences between suicidal and non-suicidal groups. Investigation of cognitive (e.g. rumination, dysfunctional attitudes) and clinical (e.g. comorbid disorders) or socieodemographic (employment status, gender) characteristics of the unresolved, resolved and never suicidal groups showed limited differences. However, the unresolved group did report experiencing intrusive suicidal thoughts as well as finding suicidal thoughts as comforting than the resolved group. The unresolved group also had a higher proportion of people who had only experienced suicidal

ideation, whereas the resolved group had a higher proportion of people who had engaged in behaviour. Secondly, this study yielded very interesting findings with regards to onset of depression and suicidality. An earlier age of onset of depression is more characteristic of those who have experienced suicidality. Those with an onset of depression in adolescence became suicidal at some point in their lives, suggesting that risk for becoming suicidal doesn't always manifest in adolescence for this group although adult onset of suicidality was less sever in nature. If suicidality was present in adolescence, in this sample it was rarely confined to adolescence and was indicative of experiencing a further two or more suicidal episodes. Individuals with an onset of depression in adolescence also reported their worst ever point as being more severe than those with an onset of depression in adulthood this finding was also echoed in those with an onset of suicidality in adolescence. The third main findings suggested that regardless of onset of depression those who had experienced suicidality in their first episode of depression were more likely to re-experience suicidality on a further two occasions. This study has begun to open up important questions about the time course of suicidality in recurrent major depression, and our preliminary results suggest ways in which both theory and clinical perspectives may need to change.

5 Appendix

5.1 Information Sheet

UNIVERSITY OF OXFORD
DEPARTMENT OF PSYCHIATRY

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*call is free (from landlines only)

Staying well after depression: a randomised trial

INFORMATION FOR PARTICIPANTS

Invitation

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. *Part 1 of this information sheet tells you about the purpose of this study and what will happen to you if you take part. Part 2 gives you more detailed information about the conduct of the study.* Take time to decide whether or not you wish to take part. Thank you for reading this.

What is the purpose of the study?

Each year in the United Kingdom a large number of people get depressed. We are very keen to find out more about the reasons for this and how we can prevent it happening again. We are particularly interested in the ability of two treatments to *help people stay well in the future* (by reducing future episodes of depression), when they have been depressed in the past. The treatments, a Cognitive Psycho-Education programme (CPE) and Mindfulness Based Cognitive Therapy (MBCT), are described below. What we learn from this study will be used to improve the care of patients in the future.

Why have I been chosen?

We are asking people to take part who have been depressed **several times in the past**, but who are now feeling better, in order to compare the ability of different treatments to help people stay well in the future. We are contacting people directly through posters and adverts. We are also asking doctors, psychologists and other people caring for those with depression to mention this study to any patients they think might be interested in finding out more. We hope that about 350-400 people will take part in this study.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time without giving a reason. Withdrawal will not affect any care you are receiving outside of this research in any way.

The Design of the Study
We are interested in whether CPE and MBCT can help people stay well and prevent future depression. To see whether the treatments are helpful we need to compare people in the two treatment groups with a group of people who are not receiving treatment at the moment. We will also compare the two treatment groups to see if one treatment is more effective than the other.

Everyone joining the study will be chosen at random by a computer program to receive either CPE or MBCT, or to wait for treatment. We will use a ratio of 2:2:1: this means that for every five people who enter the study two will join the CPE group, two will join the MBCT group and one will be asked to wait for treatment. All three groups will be followed up in the same way (see below). The *wait for treatment* group will be offered CPE or MBCT at the end of the study (after about 15 months). Everyone in the study will continue to receive other treatments and seek extra help (e.g. from their GPs) in the usual way.

What is Cognitive Psycho-Education (CPE)?
CPE is a new treatment. It is a group-based adaptation of cognitive therapy. Cognitive therapy is a psychological treatment focusing on the negative thinking that is central to depression and despair. Previous research has shown that cognitive therapy reduces the risk of depression recurring. People randomised to CPE will take part in eight weekly classes. These classes will be given by an experienced teacher to small groups of about 12 people. There they will learn ways of handling difficult thoughts and feelings differently. Homework activities and exercises will encourage them to try out new ways of responding to their thoughts and feelings. CPE also includes basic education about depression, with exercises that show the links between thinking and feeling, and that help to establish how best to look after yourself when your moods threaten to overwhelm you. In addition to the 8 weekly classes, you will be invited to two follow-up 'reunion' sessions, 6-8 weeks and approximately 6 months after the end of treatment. These will allow you to refresh the skills you have learnt and reflect on how things have been going since the last class.

What is Mindfulness Based Cognitive Therapy (MBCT)?
MBCT is a new treatment. It combines mindfulness meditation with cognitive therapy techniques. Previous research has shown that MBCT can reduce the risk of recurrence of depression in people who have suffered several episodes of depression in the past. People randomised to MBCT will take part in eight weekly classes given by an experienced teacher to small groups of about 12 people. There they will learn the practice of mindfulness meditation. MBCT includes breathing exercises and homework activities to help you become more aware of the present moment, including getting in touch with moment-to-moment changes in the mind and the body. It also includes basic education about depression, and several exercises from cognitive therapy that show the links between thinking and feeling and how best to look after yourself when your moods threaten to overwhelm you. In addition to the 8 weekly classes, you will be invited to two follow-up 'reunion' sessions, 6-8 weeks and approximately 6 months after the end of treatment. These will allow you to refresh the skills you have learnt and reflect on how things have been going since the last class.

Please be aware that both treatments involve homework assignments. In particular meditation homework practices in MBCT can take up to an hour per day. It can be difficult to make time for this,

so you must think carefully about whether you are able to make this commitment, before agreeing to take part.

What will happen to me if I take part?

Initial Assessment: If you decide to take part in the study we will arrange a **first interview** within the next few days at a time convenient for you. This interview will last about 2.5 hours. We will ask you a standard set of questions about your mood and any suicidal thoughts you may have experienced **(as this is a common symptom of depression)**. We will ask for background information about your past experiences, including traumatic events in the past and during childhood, any drugs or medicines you may be taking at the moment and so on. You will also be asked to complete some standard questionnaires. If after this session you are still interested in the research and the psychologist thinks the treatment is likely to be suitable for you, you will be invited to a second research assessment which will take about 1 hour. This will be arranged at a time convenient for you, and will include more questionnaires and short paper and pencil activities.

Allocation to CPE, MBCT or to wait for treatment: After these two sessions you will be randomly allocated to one of the three groups. If you are in the CPE or MBCT group you will meet the teacher running your class to discuss the classes in more detail. If you are in the *wait for treatment* group you will be invited to talk about the waiting period with a researcher from the team.

During the initial treatment period: Everyone will be asked to complete questionnaires regularly over the eight week period of treatment. CPE and MBCT groups will do this at the treatment classes. The *wait for treatment* group will fill in the same questionnaires at home and post them back to us using a freepost address.

After the initial treatment period: You will be asked to come back for a further research assessment of about two hours. This will be very like the assessments at the beginning of the study. This will tell us whether anything has changed. Changes may be due to CPE or MBCT, or (in the *wait for treatment* group) normal changes over time.

Follow-up: There will be four more follow-up assessments every three months for the next 12 months. Each research assessment will take about 1-2 hours. People allocated to MBCT or CPE will be invited to two follow-up 'reunion' sessions, 6-8 weeks and approximately 6 months after the end of treatment. After the final assessment people in the *wait for treatment* group will be able to choose to take part in a class of CPE or MBCT. These will be exactly the same as the original CPE and MBCT classes.

Expenses and payments: Modest expenses are available. For each research assessment attended £5 will be given plus travel expenses. For the treatment sessions, travel expenses will be paid.

If I agree to take part, what am I agreeing to do? – A summary

If you agree to take part in the study you must attend two initial assessments before allocation to CPE, MBCT or the *wait for treatment* group, and a total of five further assessments over the next 15 months. Research assessments will be audio-taped to check they

are being carried out consistently and a sample will be checked for accuracy of assessments by an independent psychiatrist. You must also complete a short weekly questionnaire during the initial 8 week study treatment period.

If you are allocated to immediate CPE or MBCT treatment you will be asked to attend an initial meeting with a teacher, followed by eight weekly sessions, each of about two hours, and to complete activities between the classes at home. You will also be asked to attend two reunion sessions, 6-8 weeks and 6 months following the end of the initial treatment period. The class teacher will be videotaped each week to check that the treatments are being delivered effectively to everyone. If you are in the *wait for treatment* group you will be asked to speak to a researcher about your role in the study. It is important that you think carefully about whether or not you are willing to make the considerable commitment of time needed for both treatment and research assessments.
It is also important to remember that although you are agreeing to take part in the study -

- You can decide to stop any interview at any point.
- You need not answer questions that you do not wish to.
- Anything you tell us will be absolutely confidential. Your name will be removed from the information and it will not be possible to identify anyone from our reports on the study.
- Audiotapes of research assessments and videotapes of treatment sessions taken during this study will be stored securely (with ***no*** identifying information to ensure confidentiality). They will be erased at the end of the study.

A flow-diagram showing the study outline is attached at the back of this information sheet to help make this information clearer.

PART 2
This section describes in more detail how the research will be conducted.

Contacting your GP
If you are interested in taking part in this research and the initial interview with the research psychologist indicates that the treatment is likely to be suitable for you we will need to tell your GP that you are taking part. This means that your GP will know you are involved in this project and can help you to take it into account when planning other treatments. We may ask your GP for some information from your medical notes at the beginning and end of the study, and to keep us updated about your progress over the duration of the trial. This information will be used to reduce the number of questions we have to ask you, and to monitor the safety and wellbeing of the people involved in the study.

What are the possible risks and benefits of taking part?
Possible Risks: You will be asked some quite detailed questions about your mood and your past experiences. Occasionally these questions can be a bit upsetting so it is important to remember that you will not have to answer any questions you do not want to. As well as this, part of the process of CPE and MBCT involves facing past difficulties which can sometimes bring up negative feelings. These difficulties are often part of the therapeutic process and the trained therapists will be available to offer advice on overcoming these difficulties during the treatment period.

Possible Benefits: Everyone taking part in the research will at some point have the opportunity to receive a new treatment designed to reduce symptoms of depression, and reduce the risk of depression coming back. We hope that, by carrying out this research, we can get a better understanding of how to prevent recurrence of depression.

What will happen if I withdraw from the study?

You are free to withdraw from the study at any time, simply by telling a researcher your wishes. You do not have to give a reason. If you withdraw completely from the study, we still need to use the data collected before your withdrawal. If you withdraw from the research assessments before treatment begins, we cannot offer you treatment, as your place will have to be made available for another person who can complete the research assessments. However, if you begin treatment but then decide that the treatment is not right for you and stop attending classes we would still like you to complete the remaining research assessments. This is important so that we can get a balanced comparison of the treatments, and find out which groups of people they help. Even if you feel unable to do further assessments, we would be very pleased to keep in contact with you anyway to let us know your progress. However you do not have to do so if you do not want to.

What if something goes wrong?

The University of Oxford is acting as the sponsor of this trial. If you wish to complain about any aspect of the way in which you have been approached or treated during the course of this study, you can either contact the Principal Investigator directly (Professor Mark Williams, University of Oxford, Department of Psychiatry, Warneford Hospital, Oxford, OX3 7JX) or contact the University of Oxford Clinical Trials and Research Governance office on 01865 743005. As well as this the normal NHS complaints mechanism is available and the University procedure for reporting misconduct will also be open to you. Allegations of misconduct can be reported to:

The Registrar, University Offices, Wellington Square, Oxford, OX1 2JD.

If you are harmed due to someone's negligence then you may have grounds for legal action for compensation against University of Oxford (in respect of any harm arising out of the participation in the clinical trial) or the NHS (in respect of any harm which has resulted from the clinical procedure being undertaken).

Will my taking part in this study be kept confidential?

All information collected about you during the course of the research will be kept strictly confidential within the limits of the law. If you join the study, some parts of your medical records and the data collected for the study may be looked at by authorised persons from the University of Oxford and NHS Trust to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and nothing that could reveal your identity will be disclosed outside the research site. Any information about you will be assigned a number, and will not have your name on it, so you could not be recognised from it. Data will be stored for 10 years and will be destroyed after this time.

Confidentiality would be only be breached if it was judged that someone was at immediate risk of serious harm (for example if someone was seriously planning to end their life). In these rare circumstances we would disclose to a third party (normally the participant's GP)

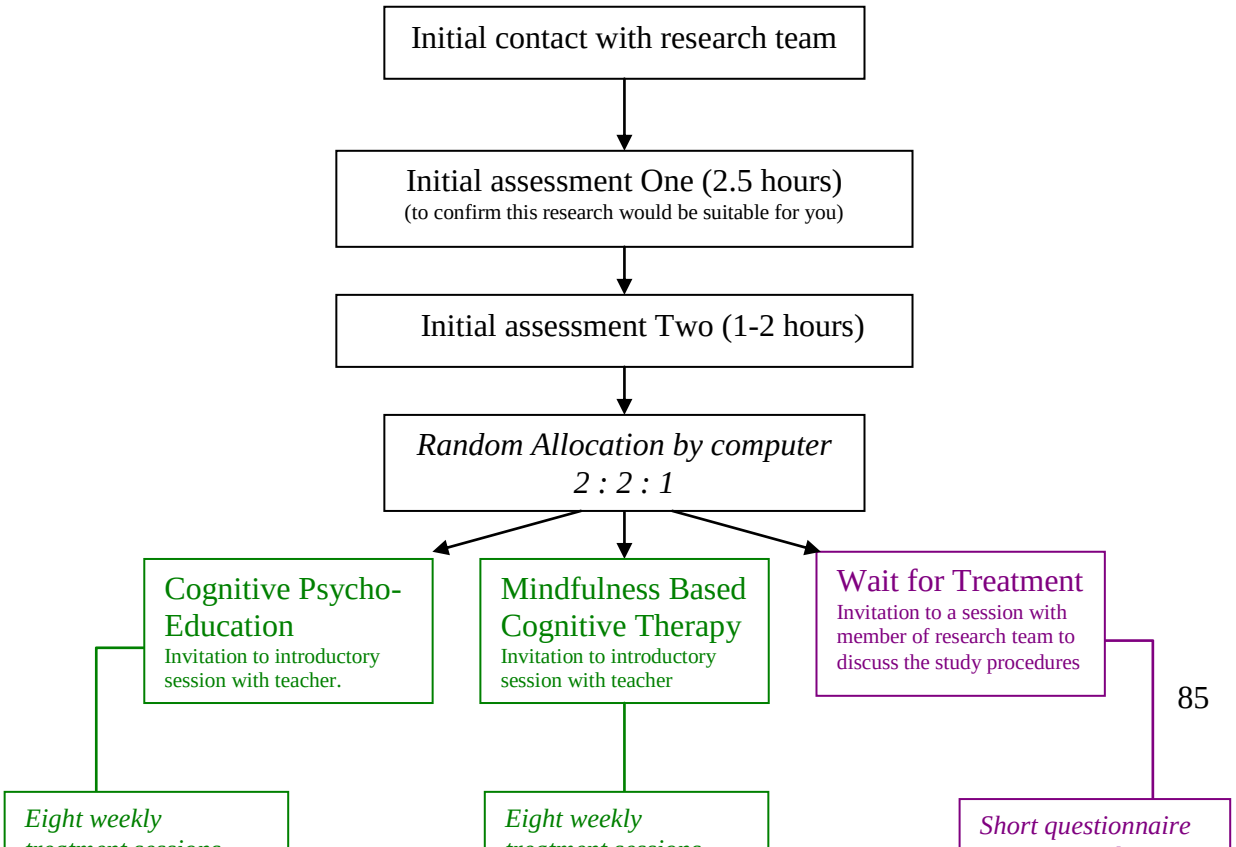
only information essential to ensure the safety of the person at risk and would always discuss all alternative options with the person in question first.

What will happen to the results of the research?
Any research publications will not identify you individually. If you would like a copy of the published results, let one of the researchers know, and we will be delighted to send them to you when they became available.

Who is organising and funding the research?
This is one of a series of studies that has been funded by The Wellcome Trust (a medical charity).

Who has reviewed the study?
This study has received ethical approval from the National Research Ethics Service, Oxfordshire REC C Ref: 08/H0606/56

Contact for Further Information
If you have any further questions about this research, please feel free to speak to one of our research psychologists on 01865 226468, or e-mail recruiters@staying-well.org



THANK YOU FOR TAKING THE TIME TO READ THIS INFORMATION SHEET AND CONSIDERING WHETHER TO TAKE PART IN THIS RESEARCH.

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET AND A SIGNED CONSENT FORM TO KEEP IF YOU DO TAKE PART. FEEL FREE TO SHOW IT TO ANY DOCTOR INVOLVED IN YOUR CARE.

5.2 Consent Form

UNIVERSITY OF OXFORD
DEPARTMENT OF PSYCHIATRY

WARNEFORD HOSPITAL
OXFORD
OX3 7JX

TEL: (01865) 226468
FAX: (01865) 793101
FREE PHONE: 0800 0836130*
*call is free (from landlines only)

CONSENT FORM

Project Title: Staying well after depression: a randomised trial
Principal Investigator: Professor Mark Williams

	Please initial box
I confirm that I have read and understand the information sheet dated ..... (version .....) for the above study. I have had the opportunity to consider the information, ask questions and have had any questions I asked answered satisfactorily.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without my medical care or legal rights being affected.	☐
I agree to the assessment sessions being audiotaped.	☐
I agree to the treatment sessions being videotaped for supervision and training purposes. I understand that no participant will be visible on the tapes, and no identifying information about participants will be given when using the tapes.	☐
I understand that relevant data collected during the study may be looked at by individuals from the research team, as well as from responsible members of the University of Oxford and the NHS Trust for the purpose of audit and monitoring, and where it is relevant to my taking part in this research, I give permission for these individuals to have access to my record. I understand that personal data will be identified using only a number code and will be destroyed after a period of 10 years.	☐
I understand that all information will be kept strictly confidential within the limits of the law except in the rare circumstances in which it is judged that I or someone else is at immediate risk of serious harm.	☐
I agree to my GP being informed of my participation in the study and to additional information required for monitoring my progress in the trial to be accessed by the research team	☐
I agree to be randomly allocated to receive either CPE, MBCT or to wait for treatment	☐
I agree to take part in the above study.	☐

_____	_____	_____
Name of Patient	Date	Signature
_____	_____	_____
Researcher	Date	Signature

5.3 Sociodemographic Information

Date ___/___/_____ *Participant ID* _____

Time: _____

Sociodemographic Data

Current Age:_____

Date of birth: ___/___/_____

Gender: female ❒
male ❒

Participant Details:

Landline:

Mobile:

Preferred number:

Time to call:_____

- No message
- Name and number only
- Full message ok

Email:

Address:

Alternative Contact (only to be contacted if we lose touch with you)

Name:

Relationship to participant:

Telephone number/email/address:

Should we:

- Leave name only with this person
- Mention why we are calling (e.g. re stress reduction classes

["Sometimes it is helpful if your contact knows that we have their details so that they are happier to pass on a message or give us new contact details for you. If you're not happy to talk about the project with them we will just ring up and leave a message for you with our name and number"].

GP Contact Information (to send info sheet about study)

Name of GP:_____

Practice:_____

Education and Work History
How many years did you spend in full-time education? E.g., age 5-16 would be 11 years. Add on any years spent in full time education as an adult.
_____ years in full-time education

Do you have any qualifications or exams?

Qulifications
Please rate highest educational achievement:

1. PhD, Dr, Dphil
2. MA, MSc, Mhil, MBA
3. Professional qualification – Please specify & ask what level it is equivalent to if unclear
4. BA, BSc, Bed
5. A levels or equivalent
6. GCSE, O levels, GNVQ
7. No formal qualifications
8. Other (specify)

(age achieved_____)

If started but then did not complete a qualification-why?_____

Are you working now? Is that full-time?

If so, what kind of work do you do?
(Do you work outside of your home?)

Job title: _____

Brief description of duties:_____

Current employment: employed/ / retired/ unemployed

Ethnic background:

- ❒ Asian or Asian British
  - Indian
  - Bangladeshi
  - Pakistani
  - Other Asian background
- ❒ Black or Black British
  - Caribbean
  - African
  - Other Black background
- ❒ Chinese or other ethnic group
  - Chinese
  - Any other ethnic group
- ❒ Mixed
  - White and Black Caribbean
  - White and Black African
  - White and Asian
  - Any other Mixed background
- ❒ White
  - British
  - Irish
  - Any other White background

5.4 The Structured Clinical Interview for DSM-III-R (SCID)

1. … has there been a period of time when you were feeling depressed or down most of the day nearly every day (What was that like?) IF YES: *How long did it last? As long as one week?*	(1) depressed mood most of the day, nearly every day, as indicated either by subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful).	**? 1 2 3**	RA1
2…. what about losing interest or pleasure in things you usually enjoyed? IF YES: *Was it nearly every day? How long did it last? (As long as one week)*	(2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated either by subjective account or observation made by others).	**? 1 2 3**	RA2

IF (1) OR (2) IS CODED "3", say *'I'd like to ask you now about some other symptoms you may have experienced over the past two months……'*

IF NEITHER (1) OR (2) IS CODED "3" CHECK (9) *** *and if presence of suicidal thoughts is endorsed return here to ask about other symptoms of depression…….*

For the following SCID questions, focus on the worst week in the past two months. *During this (one-week period)…* *3…. did you lose or gain any weight? (How much?) (Were you trying to lose weight?)* IF NO: *How was your appetite compared to your usual appetite? (Did you have to force yourself to eat?) (Eat [less/more] than usual?) (Was that nearly every day?)*	(3) significant weight loss when not dieting, or weight gain (e.g., a change of more than 5% of body weight in a month) or decrease or increase in appetite nearly every day. Check if: ❒ weight loss or decreased appetite ❒ weight gain or increased appetite	**? 1 2 3**	RA3 RA4 RA5
4…. how were you sleeping? (Trouble falling asleep, waking frequently, trouble staying asleep,	(4) insomnia or hypersomnia nearly every day	**? 1 2 3**	RA6

waking too early, OR *sleeping too much? How many hours a night compared to usual? Was that nearly every night?)*	Check if: ❒ insomnia ❒ hypersomnia		RA7 RA8
5.… were you so fidgety or restless that you were unable to sit still? (Was it so bad that other people noticed it? What did they notice? Was that nearly every day?) IF NO: *What about the opposite – talking or moving more slowly than is normal for you? (Was it so bad that other people noticed it? What did they notice? Was that nearly every day?)*	(5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down) Note: Consider behavior during the interview Check if: ❒ retardation ❒ agitation	**? 1 2 3**	RA9 RA10 RA11
6.… what was your energy like? (Tired all the time? Nearly every day?)	(6) fatigue or loss of energy nearly every day	**? 1 2 3**	RA12
7.… how did you feel about yourself? (Worthless?) (Nearly every day?) IF NO: *What about feeling guilty about things you had done or not done? (Nearly every day?)*	(7) feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick) Check if: ❒ worthlessness ❒ inappropriate guilt	**? 1 2 3**	RA13 RA14 RA15
8.… did you have trouble thinking or concentrating? (What kinds of things did it interfere with?) (Nearly every day?)	(8) diminished ability to think or concentrate, or indecisiveness, nearly every day Check if: ❒ diminished ability to think ❒ indecisiveness	**? 1 2 3**	RA16 RA17 RA18
9.… were things so bad that you were thinking a lot about death or that you would be better off dead? What about thinking of hurting yourself? IF YES:	(9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide	**? 1 2 3**	RA19

Did you do anything to hurt yourself?	NOTE: Code "1" for self-mutilation w/o suicidal intent Check if: ❒ thoughts of own death ❒ suicidal ideation ❒ specific plan ❒ suicide attempt		
	A. IF TWO OR MORE ITEMS ARE CODED "3" AND ONE OF THEM IS (1) OR (2) OR (9) SCORE "3"	**? 1 3**	
IF UNCLEAR: *Has* (depressive episode/OWN EQUIVALENT) *made it hard for you to do your work, take care of things at home, or get along with other people?*	B. The symptoms cause clinically significant distress or impairment in social occupational, or other important areas of functioning	**? 1 2 3**	LA20
Just before this began, were you physically ill? IF YES: *What did the doctor say?* *Just before this began, were you using any medication?* IF YES: *Any change in amount you were using?* *Just before this began, were you drinking or using any street drugs?*	C. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or to a general medical condition (e.g., hypothyroidism)	**? 1 3**	LA21
Did this begin soon after someone close to you died?	D. Not better accounted for by [Simple] Bereavement	**? 1 3**	LA22
	PARTICIPANT DOES NOT MEET RECOVERY CRITERA (CRITERIA A, B, C AND D ARE CODED "3")	**YES NO**	
When did this episode begin?	Begin: ___/____ (mm/yy)		
	IF PARTICIPANT DOES NOT MEET RECOVERY CRITERIA	=> **EXCLUDE**	

5.5 Hamilton Rating Scale for Depression.

Now I'd like to ask you some more about your mood during the last two weeks…

*HRSD1: How would you describe your feelings over the **past two weeks**? Cheerful/depressed/low spirited/moody? Do they come and go? How often? Do you feel better if you are with someone else? Have you wanted to cry? Does crying relieve it? Do you feel beyond tears?*

0 - absent (mild or occasional feelings)
1 – mild (persistent gloomy attitude, pessimism, occasional more intense feelings, feelings may be relieved
by company/work)
2 – moderate (persistent or frequent depression bouts, often feels like crying, weeps occasionally)
3 – marked (more consistent and intense feelings, may be frequent weeping)
4 - severe (patient reports virtually only these feelings in spontaneous verbal/nonverbal communication)

HRSD2: Have you been affected in your capacity do carry out work or other social activities? What have you been doing in housework/hobbies/interests/social life?

0 - absent (no difficulty)
1 – mild (thoughts/feelings of incapacity/fatigue related to activities. Essential tasks performed)
2 – moderate (impaired performance and loss of interest reported or implied by listlessness, indecision e.t.c., feels has to push self to work or activities)
3 – marked (decrease in actual time spent on activities, loss of efficiency impossible to hide)
4 - severe (stopped working because of illness, unable to care for self, or admitted to hospital)

HRSD3: Loss of weight (over past two weeks)

0 - absent (no loss or claimed loss of less than 4 lb)
1 – mild (probable weight loss associated with current illness (4-14lb over previous 8 weeks or clothes slack around waist))
2 – marked (definite loss according to patient or noticeable thinning)
3 –not assessed

HRSD4: How has your appetite been?(over past two weeks)

0 - normal
1 – mild (lost appetite but eats without encouragement from others, food intake ok)
2 – moderate to severe (marked reduction of appetite and food intake, difficulty eating without urging from others)

HRSD5: Have you felt that life was not worth living? Have you wished you were dead? Have you had any thoughts of taking your life? Have you gone so far as to make any plans to do so?

0 - absent
1 – mild (has felt life not worth living-a persistent thought which recurs)
2 – moderate (has wished they were out of it, dead or any thoughts of possible death to self)
3 – marked (has thoughts of taking own life, may include planning or suicide gestures e.g. cut on wrist, taken up to 2 tablets)
4 – severe (suicide attempt of any but the most minor kind)

HRSD6: Has there been any change in your interest in sex? Have you had less sexual

drive than usual?
Assess deterioration related to present illness
0 - absent
1 – mild (some loss of interest or decrease in activity)
2 – moderate to severe (total absence of interest or activity)

HRSD7: Have you been feeling nervous, anxious or frightened? Have you felt tense or found it hard to relax? Have you had a feeling of dread as though something terrible were about to happen?
0 - absent
1 – mild (subjective tension and irritability)
2 – moderate (worrying about minor matters-concerns patient for much of the time)
3 – marked (apprehensive attitude apparent in face and speech, avoidance and risk of panic)
4 – severe (fears expressed without questioning, persistent state of intense anxiety)

HRSD8: Have you suffered from any of the following: trembling, shakiness, excessive sweating, feelings of suffocation or choking, attacks of shortness of breath, dizziness, palpitations, faintness, headaches, stomach problems, e.t.c?
0 - absent
1 – mild (one or two physical symptoms definite but mild, occurring less than twice a week)
2 – moderate (increased severity, more symptoms, more than twice a week)
3 – marked (persisting & frequent i.e. everyday. Occasional severe episodic symptom which incapacitates
while it lasts)
4 – severe (several persisting and frequent symptoms, result in disabling attacks)

HRSD9: Hypochondriasis –have you been worried about your health?
0 - absent
1 – mild (self absorption (bodily) -patient discusses when asked but does not return spontaneously)
2 – moderate (much preoccupation with health and thoughts of organic disease which are volunteered)
3 – marked (frequent complaints, requests for help, strong irrational conviction of presence of physical disease accounting for patients condition)
4 – severe (delusions of disease e.g. rotting, blockage, riddled with tumour)

HRSD10: Have you been taking sleeping pills? Have you had any difficulty sleeping or getting off to sleep? When you do get to sleep do you sleep well? Are you restless or do you keep waking?
(if not every night rate insomnia as present if it occurs at least every third night)

Early Insomnia (10A)
0 - absent (none or only occasional delay in falling asleep)
1 – mild (some difficulty falling asleep i.e. over 30 mins, recognised to be a change from normal)
2 – severe (nightly difficulty falling asleep, may take over 1 hour)

Middle Insomnia (10B)
0 – absent (or habitual nocturnal wakening to void bladder)
1 – mild (complaints of being restless and disturbed in night, may wake once/twice but falls asleep again)
2 –severe (wakes frequently or occasionally with difficulty falling asleep again-getting out of bed (except for bathroom) rates '2')

Late Insomnia (10C)
0 - absent (usual waking time)
1 – mild (wakes 30-60 mins before usual waking time or wakes early but gets back to sleep)

2 – severe (wakes more than 60 mins before usual waking time or unable to fall asleep again if out of bed)

HRSD11: Agitation-have you felt agitated or restless?
0 - absent (or minimal)
1 – mild (fidgety, moving excessively in chair, tapping fingers)
2 – moderate (playing with hands, hair, twisting handkerchief or clothes)
3 – marked (moving about, can't sit still, may rise during interview)
4 - severe (hand wringing, nail biting, hair pulling, biting of lips)

HRSD12: Psychomotor retardation-rate observed behaviour(no need to ask question directly- just observation)
0 - absent (or minimal)
1 – mild (flattening of emotional response or fixity of expression)
2 – moderate (voice is monotonous, delayed answering, tendency to sit motionless)
3 – marked (slowness of response sufficient for interview to be difficult and prolonged)
4 - severe (interview impossible)

HRSD13: Do you feel tired easily? All the time? Have you much energy? Is it an effort to do anything? Do you spend a lot of time resting? In bed? Does it interfere with your everyday life?
0 - absent
1 – mild (disproportionate fatigue and loss of energy, heaviness in limbs, back or head, interferes with day to day activity)
2 – moderate to severe (any clear-cut symptom, marked complaints requiring frequent rests after bursts of energy, body feels heavy, exhausted.

HRSD14: Have you had a low impression of yourself? Have you blamed yourself for things you have done in the past or recently? Have you felt guilty about things? Have you felt you have let your friends or family down? Have you felt you are to blame for your illness? In which way? A little? A lot? Is your condition a punishment?
0 - absent (or very mild feelings of self blame)
1 – mild (self-reproach, feels they have let people down, lowered opinion of self with feelings of regret)
2 – moderate (more intense or pervasive feelings of guilt/self-blame. Ideas of guilt or rumination over past errors or sinful deeds)
3 – severe (pervasive feelings of gult, worthlessness over many areas of existence. Feeling that present illness is a punishment.)
4 – delusions of guilt (beliefs of pathological guilt with or without auditory hallucinations emphasizing guild in accusatory/denunciating voices, threatening visual hallucinations.)

HRSD15: What do you think the matter is with you?
0 – absent (full appreciation of situation, acknowledges being depressed and ill
1 – mild (partial loss, acknowledges illness but attribute to bad food, climate, overwork, virus)
2 – moderate to severe (full loss, denies the possibility of a mental illness or nervous disorder)

5.6 The Mini International Neuropsychiatric Interview (MINI) Suicidality Tracking Measure

Over the past week how much did you….?

1. Think you would be better off dead or wish that you were dead?
0 – not at all
1 – a little
2 - moderately
3 - markedly
4 – extremely

2. Want to harm yourself or to hurt or to injure yourself?
0 – not at all
1 – a little
2 - moderately
3 - markedly
4 – extremely

3. Think about suicide
0 – not at all
1 – a little
2 - moderately
3 - markedly
4 – extremely

4. Plan for a suicide
0 – not at all
1 – a little
2 - moderately
3 - markedly
4 – extremely

5. Take active steps to prepare for a suicide attempt in which you expected or intended to die?
0 – not at all
1 – a little
2 - moderately
3 - markedly
4 – extremely

6. Over the past week did you injure yourself intentionally?
0 – no
1 – yes

5.7 The Suicide Attempt Self-Injury Interview (SASSI)

LINEHAN SUICIDE ATTEMPT SELF-INJURY INTERVIEW (SASII) – STANDARD (SHORT) VERSION

S1____ At any time in your life have you deliberately harmed or injured yourself or attempted suicide?
0 = No
1 = Yes

S2____ How many times have you deliberately harmed or injured yourself or attempted suicide in your lifetime?

S3____ INTERVIEWER: HOW RELIABLE IS THIS NUMBER?
0 = Unreliable
1 = Somewhat reliable
2 = Reliable

S4____ HOW MANY EPISODES WERE COUNTED AS THRESHOLD "SUICIDE ATTEMPT/INTENTIONAL SELF-INJURY"?
(Answer at end of interview)

//

01____ SASII SEQUENCE NUMBER (Always do most serious episode- If numerous episodes of equal severity do most recent)
0 = No SASII (STOP INTERVIEW)
1 = Most recent SASII
2 = Most serious episode

BEGINNING OF DETAILING EACH EPISODE

02____ **Think back to the worst time you harmed yourself. Was this a single event or a series or cluster of events?**

INTERVIEWER: RATE EPISODE AS A SINGLE EVENT OR CLUSTER OF EVENTS

0 = Single event. An act clearly remembered and/or distinguishable from another act by any detail

1 = Cluster of events. A repetitive or habitual series of low lethality acts in which all circumstances were identical, or a series of acts so poorly recalled by subjects such that acts cannot be differentiated from each other in any way other than count

DESCRIBE BASIS FOR LABELLING AS A CLUSTER

2a_____

_____

03____ **Was the meaning of your action to (<u>method</u>)/(self-injury/suicide attempt/overdose) deliberate, accidental or somewhere in between?**

1 = Accidental

2 = Semi-deliberate

3 = Deliberate

INTERVIEWER: IF INTITIATION OF ACT ITSELF WAS AN ACCIDENT, BEHAVIOUR IS NOT A SASII

04____ **Exact/estimated number of suicide attempts or self-harm events in this cluster?**

IF SINGLE EVENT, ENTER "1"

4a__ __ / __ __ / __ __ First date of cluster

IF SINGLE EVENT, ENTER DATE OF EVENT

4b__ __ / __ __ / __ __ Last date of cluster

IF SINGLE EVENT, ENTER DATE OF EVENT

05____ **How accurate is this date?**

1 = Exact

2 = Within two weeks

3 = Within one month

4 = Anytime in the last year

5.8 Beck Depression Inventory - II

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness
0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all of the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism
0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure
0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure
0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings
0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings
0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike
0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness
0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal thoughts or Wishes
0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying
0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

Continue on the next page, please

11. Agitation
0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.

17. Irritability
0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest
0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

13. Indecisiveness
0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness
0 I do not feel I am worthless.
1 and 2 I don't consider myself as worthwhile useful as I used to.
I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy
0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern
0 I have not experienced any change in my sleeping pattern

1a I sleep somewhat more than usual
1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.
2b I sleep a lot less than usual.

3a I sleep most of the day.
3b I wake up 1-2 hours early and can't get back to sleep.

18. Changes in Appetite
0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.
2b My appetite is much greater than usual.

3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty
0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue
0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

5.9 Beck Scale for Suicide Ideation - present

Please carefully read each group of statements below. Circle the one statement in each group that best describes how you have been feeling for the past week, including today. Be sure to read all of the statements in each group before making a choice.

1.

0 I have a moderate to strong wish to live.

1 I have a weak wish to live.

2 I have no wish to live

2.

0 I have no wish to die.

1 I have a weak wish to die.

2 I have a moderate to strong wish to die.

3.

0 My reasons for living outweigh my reasons for dying.

1 My reasons for living or dying are about equal.

2 My reasons for dying outweigh my reasons for living.

4.

0 I have no desire to kill myself.

1 I have a weak desire to kill myself.

2 I have a moderate to strong desire to kill myself.

5.

0 I would try to save my life if I found myself in a life-threatening situation.

1 I would take a chance on life or death if I found myself in a life-threatening situation.

2 I would not take the steps necessary to avoid death if I found myself in a life-threatening situation.

If you have circled the zero statements in both Groups 4 and 5 above, then skip the next page and go to Group 20. If you have marked a 1 or 2 in either Group 4 or 5, then please go to Group 6 on the next page.

6.

0 I have brief periods of thinking about killing myself which pass quickly.

1 I have periods of thinking about killing myself which last for moderate amounts of time.

2 I have long periods of thinking about killing myself.

7.

0 I rarely or occasionally think about killing myself.

1 I have frequent thoughts about killing myself.

2 I continuously think about killing myself.

8.

0 I do not accept the idea of killing myself.

1 I neither accept nor reject the idea of killing myself.

2 I accept the idea of killing myself.

9.

0 I can keep myself from committing suicide.

1 I am unsure that I can keep myself from committing suicide.

2 I cannot keep myself from committing suicide.

10.

0 I would not kill myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.

1 I am somewhat concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.

2 I am not or only a little concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.

11.

0 My reasons for wanting to commit suicide are primarily aimed at influencing other people, such as getting even with people, making people happier, making people pay attention to me, etc.

1 My reasons for wanting to commit suicide are not only aimed at influencing other people, but also represent a way of solving my problems.

2 My reasons for wanting to commit suicide are primarily based upon escaping from my problems.

12.

0 I have no specific plan about how to kill myself.

1 I have considered ways of killing myself, but have not worked out the details.

2 I have a specific plan for killing myself.

13.

0 I do not have access to a method or an opportunity to kill myself.

1 The method that I would use for committing suicide takes time, and I really do not have a good opportunity to use this method.

2 I have access or anticipate having access to the method that I would choose for killing myself and also have or shall have the opportunity to use it.

14.

0 I do not have the courage or the ability to commit suicide.

1 I am unsure that I have the courage or the ability to commit suicide.

2 I have the courage and the ability to commit suicide.

15.

0 I do not expect to make a suicide attempt.

1 I am unsure that I shall make a suicide attempt.

2 I am sure that I shall make a suicide attempt.

16. 0 I have made no preparations for committing suicide. 1 I have made some preparations for committing suicide. 2 I have almost finished or completed my preparations for committing suicide. **17.** 0 I have not written a suicide note. 1 I have thought about writing a suicide note or have started to write one, but not completed it. 2 I have completed a suicide note.	**18.** 0 I have made no arrangements for what will happen after I have committed suicide. 1 I have thought about making some arrangements for what will happen after I have committed suicide. 2 I have made definite arrangements for what will happen after I have committed suicide. **19.** 0 I have not hidden my desire to kill myself from people. 1 I have held back telling people about wanting to kill myself. 2 I have attempted to hide, conceal, or lie about wanting to commit suicide.

5.10 Beck Scale for Suicide Ideation – worst ever

The statements below are about your thoughts on life and death. They refer to how you felt at a **previous** time in your life, when you were **the most down about life**, and **the most depressed that you have ever been**.

When would you estimate this time in your life to have been?

Please read each group of statements below carefully. Circle the statement in the group that best describes how you felt **at your worst time**. If several statements in the group seem to apply equally well, circle the highest number for that group.

1.

0 I had a moderate to strong wish to live.

1 I had a weak wish to live.

2 I had no wish to live

2.

0 I had no wish to die.

1 I had a weak wish to die.

2 I had a moderate to strong wish to die.

3.

0 My reasons for living outweighed my reasons for dying.

1 My reasons for living or dying were about equal.

2 My reasons for dying outweighed my reasons for living.

4.

0 I had no desire to kill myself.

1 I had a weak desire to kill myself.

2 I had a moderate to strong desire to kill myself.

5.

0 I would have tried to save my life if I had found myself in a life-threatening situation.

1 I would have taken a chance on life or death if I had found myself in a life-threatening situation.

2 I would not have taken the steps necessary to avoid death if I had found myself in a life-threatening situation.

If you have circled the zero statements in both Groups 4 and 5 above, then skip the next two pages and go to the next questionnaire. If you have marked a 1 or 2 in either Group 4 or 5, then please go to Group 6 on the next page.

6.

0 I had brief periods of thinking about killing myself which passed quickly.

1 I had periods of thinking about killing myself which lasted for moderate amounts of time.

2 I had long periods of thinking about killing myself.

7.

0 I rarely or occasionally thought about killing myself.

1 I had frequent thoughts about killing myself.

2 I continuously thought about killing myself.

8.

0 I did not accept the idea of killing myself.

1 I neither accepted nor rejected the idea of killing myself.

2 I accepted the idea of killing myself.

9.

0 I felt that I could keep myself from committing suicide despite the thoughts.

1 I was unsure that I could keep myself from committing suicide if the thoughts continued.

2 I could not keep myself from acting on the thoughts to commit suicide.

10.

0 I would not have killed myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.

1 I was somewhat concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.

2 I was not or only a little concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt, etc.

11.

0 My reasons for wanting to commit suicide were primarily aimed at influencing other people, such as getting even with people, making people happier, making people pay attention to me, etc.

1 My reasons for wanting to commit suicide were not only aimed at influencing other people, but also represented a way of escaping from life.

2 My reasons for wanting to commit suicide were primarily based upon escaping from life.

12.

0 I had no specific plan about how to kill myself.

1 I had considered ways of killing myself, but had not worked out the details.

2 I had a specific plan for killing myself.

13.

0 I didn't have access to a method or an opportunity to kill myself.

1 The method I would have used for committing suicide would take time, and I really didn't have a good opportunity to use this method.

2 I had access or anticipated having access to the method I would have chosen for killing myself and also had the opportunity to use it.

14.

0 I did not have the know-how, the courage or the ability to commit suicide.

1 I was unsure whether I would have the courage and the ability to commit suicide.

2 I had the courage and the ability to commit suicide.

15.

0 I did not expect to make a suicide attempt.

1 I was unsure whether I would make a suicide attempt.

2 I was sure that I would make a suicide attempt.

16.	
0	I made no preparations for committing suicide.
1	I made some preparations for committing suicide.
2	I almost finished or completed my preparations for committing suicide.
17.	
0	I did not write a suicide note.
1	I thought about writing a suicide note or started to write one, but never not completed it.
2	I completed a suicide note.

18.	
0	I made no arrangements for what would happen after I had committed suicide.
1	I thought about making some arrangements for what would happen after I had committed suicide.
2	I made definite arrangements for what would happen after I had committed suicide.
19.	
0	I did not hide my desire to kill myself from other people.
1	I held back telling people about wanting to kill myself.
2 to	I attempted to hide or lie about wanting commit suicide.

5.11 Generalised Anxiety Disorder -7

Over the last 2 weeks, how often have you been bothered by any of the following problems? *(please circle the relevant answer)*		Not at all	Several days	More than half the days	Nearly every day
1	Feeling nervous, anxious or on edge	0	1	2	3
2	Not being able to stop or control worrying	0	1	2	3
3	Worrying too much about different things	0	1	2	3
4	Trouble relaxing	0	1	2	3
5	Being so restless that it is hard to sit still	0	1	2	3
6	Becoming easily annoyed or irritable	0	1	2	3
7	Feeling afraid as if something awful might happen	0	1	2	3

5.12 The Ruminative Responses Scale

Please indicate what you *generally* do, **not** what you *think* you should do.

		Never	Sometimes	Often	Always
1.	I think about how alone I feel.	1	2	3	4
2.	I think "I won't be able to do my job if I don't snap out of this".	1	2	3	4
3.	I think about my feelings of fatigue and achiness.	1	2	3	4
4.	I think about how hard it is to concentrate.	1	2	3	4
5.	I think "What am I doing to deserve this?"	1	2	3	4
6.	I think about how passive and unmotivated I feel.	1	2	3	4
7.	I analyze recent events to try to understand why I am depressed.	1	2	3	4
8.	I think about how I don't seem to feel anything anymore.	1	2	3	4
9.	I think "Why can't I get going?"	1	2	3	4
10.	I think "Why do I always react this way?"	1	2	3	4
11.	I go away by myself and think about why I feel this way.	1	2	3	4
12.	I write down what I am thinking and analyze it.	1	2	3	4
13.	I think about a recent situation, wishing it had gone better.	1	2	3	4
14.	I think "I won't be able to concentrate if I keep feeling this way."	1	2	3	4
15.	I think "Why do I have problems other people don't have?"	1	2	3	4
16.	I think "Why can't I handle things better?"	1	2	3	4

17.	I think about how sad I feel.	1	2	3	4
18.	I think about all my shortcomings, failings, faults, and mistakes.	1	2	3	4
19.	I think about how I don't feel up to doing anything.	1	2	3	4
20.	I analyze my personality to try to understand why I am depressed.	1	2	3	4
21.	I go somewhere alone to think about my feelings.	1	2	3	4
22.	I think about how angry I am with myself.	1	2	3	4

5.13 The Dysfunctional Attitudes Scale

ATTITUDES **Remember, answer each statement according to the way you think most of the time**	totally agree	agree very much	agree slightly	neutral	disagree slightly	disagree very much	totally disagree
1. It is difficult to be happy unless one is good looking, intelligent, rich and creative							
2. Happiness is more a matter of my attitude towards myself than the way other people feel about me							
3. People will probably think less of me if I make a mistake							
4. If I do not do well all the time, people will not respect me							
5. Taking even a small risk is foolish because the loss is likely to be a disaster							
6. It is possible to gain another person's respect without being especially talented at anything							
7. I cannot be happy unless most people I know admire me							
8. If a person asks for help it is a sign of weakness							
9. If I do not do as well as other people it means I am an inferior human being							
10. If I fail at my work, then I am a failure as a person							
11. If you cannot do something well, there is little point in doing it at all							
12. Making mistakes is fine because I can learn from them							
13. If someone disagrees with me, it probably							

indicates he does not like me							
14. If I fail partly, it is as bad as a complete failure							
15. If other people know what you are really like, they will think less of you							
16. I am nothing if a person I love doesn't love me							
17. One can get pleasure from an activity regardless of the end result							
18. People should have a reasonable likelihood of success before undertaking anything							

ATTITUDES

Remember, answer each statement according to the way you think most of the time

	totally agree	agree very much	agree slightly	neutral	disagree slightly	disagree very much	totally disagree
19. My value as a person depends greatly on what others think of me							
20. If I don't set the highest standards for myself, I am likely to end up as a second rate person							
21. If I am to be a worthwhile person I must be truly outstanding in at least one major respect							
22. People who have good ideas are more worthy than those who do not							
23. I should be upset if I make a mistake							
24. My own opinions of myself are more important than other's opinions of me							
25. To be a good, moral, worthwhile person, I must help everyone who needs it							
26. If I ask a question it makes me look inferior							

	totally agree	agree very much	agree slightly	neutral	disagree slightly	disagree very much	totally disagree
27. It is awful to be disapproved of by people important to you							
28. If you don't have other people to lean on, you are bound to be sad							
29. I can reach important goals without slave driving myself							
30. It is possible for a person to be scolded and not get upset							
31. I cannot trust other people because they might be cruel to me							
32. If others dislike you, you cannot be happy							
33. It is best to give up your own interests in order to please other people							
34. My happiness depends more on other people than it does on me							
35. I do not need the approval of other people in order to be happy							

ATTITUDES

Remember, answer each statement according to the way you think most of the time

	totally agree	agree very much	agree slightly	neutral	disagree slightly	disagree very much	totally disagree
36. If a person avoids problems, the problems tend to go away							
37. I can be happy even if I miss out on many of the good things in life							
38. What other people think about me is very important							
39. Being isolated from others is bound to lead to unhappiness							
40. I can find happiness without being loved by							

another person						

5.14 The Suicidal Thoughts Questionnaire

When I feel very low and things get too much for me:

	Strongly disagree				Strongly agree
1 My thoughts frequently return to the idea of suicide	1	2	3	4	5
2 I cannot erase the images of suicide that come into mind	1	2	3	4	5
3 Suicidal thoughts come into my mind but do not bother me	1	2	3	4	5
4 Suicidal thoughts keep jumping into my head.	1	2	3	4	5
5 I wonder why I have the suicidal thoughts I do	1	2	3	4	5
6 I wish I could stop thinking about suicide.	1	2	3	4	5
7 I take comfort from thoughts of suicide.	1	2	3	4	5
8 I try not to tell anyone about the suicidal thoughts I have.	1	2	3	4	5
9 I prefer not to think about suicide.	1	2	3	4	5
10 I try to avoid suicidal thoughts.	1	2	3	4	5
11 Thinking about suicide makes me feel calm.	1	2	3	4	5
12 The suicidal thoughts sometimes come so fast I wish I could stop them.	1	2	3	4	5
13 I sometimes stay really busy just to keep suicidal thoughts from intruding on my mind.	1	2	3	4	5
14 I have suicidal thoughts I cannot stop.	1	2	3	4	5
15 Thinking about suicide makes me feel better.	1	2	3	4	5
16 I try not to think about suicide.	1	2	3	4	5
17 I often do things to distract myself from my suicidal thoughts.	1	2	3	4	5

18 My suicidal thoughts sometimes make me really wish I could stop thinking altogether.	1	2	3	4	5
19 I think about suicide to help myself cope.	1	2	3	4	5
20 I always try to put suicidal thoughts out of my mind.	1	2	3	4	5

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