An Examination of Self-defining Memories, Cognitive Avoidance and Metacognitive Processes in Depressed and Non-depressed Older Adults And Clinical Research Portfolio

Volume 1
(Volume 2 bound separately)

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Submitted in partial fulfilment of the requirements for the degree of
Doctorate in Clinical Psychology

Institute of Health and Wellbeing
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University of Glasgow

October 2015

ACKNOWLEDGMENTS

First and foremost, I would like thank the participants who took the time to take part in the research project. I would also like to thank my supervisors Dr Hamish McLeod and Dr Lisa Gadon for your expertise, guidance and time. I feel very grateful to have had such supportive supervisors. Hamish in particular, your support has been invaluable. Also thank you to The Psychological Therapies for Older People Team and the Elderly Community Mental Health Teams for your assistance with recruitment.

I would also like to thank my lovely friends, on and off the course (you know who you are), for supporting me over the last three years. In particular Amanda, thank you for your support over the last two years, deciding to move in with me was probably not one of your wisest decisions! Also to my mum and brother for your consistent encouragement, mum you have always been there for me, I really would be lost without you. Lastly thank you to Ronnie for proof reading this for me, looking after me and for making me laugh at the silliest of things.

This is dedicated to my dear friend Vicki. I am so glad that we started this journey together.

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MAJOR RESEARCH PROJECT

CHAPTER ONE:
SYSTEMATIC REVIEW

A Systematic Review of Memory Specificity Training on Depressive Symptoms Across the Age Range

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Written according to guidelines for submission to *Memory* (Appendix 1)
Declaration of interests: None

Word count: 8578

Submitted in partial fulfilment of the requirement for the degree of Doctorate in Clinical Psychology (DClinPsy)

ABSTRACT

Background: There is a growing body of research in training individuals to think in a concrete manner (specificity training), to treat depression. There is no systematic review that synthesises the data of these interventions on depressive symptoms.

Aims: This review aims to systematically examine and synthesise the literature on specificity training on depressive symptoms. It will examine the relationship of these interventions to particular cognitive mechanisms associated with depression. It also aims to critique the quality of included studies.

Methods: A systematic search was conducted using Medline, Embase, PsychINFO and Web of Science databases. The reference lists of eligible papers were manually searched. A narrative-synthesis approach was adopted and the quality of included studies was evaluated using the Crowe Critical Appraisal Tool.

Results: 241 studies were screened and eight studies were included. Three studies provided evidence that Concreteness Training (CNT) improved depressive symptoms. Two studies assessed depressive symptoms after the withdrawal of treatment and found improvements. Improved depression symptoms were associated with reduced rumination, overgeneralisation and self-criticism. All studies that assessed concreteness of thinking found improvements on this measure post treatment, and one study (out of two) found improvements in memory specificity. Five of the studies were rated as 'good quality' and three studies were rated as 'acceptable quality'.

Conclusions: There is some evidence that CNT improves depressive symptoms and mixed evidence whether CNT offers added therapeutic benefit to established treatments. Reductions in rumination, overgeneralisation and self-criticism were associated with improvements in mood. Due to the large variation in the demographic characteristics of the samples and the severity of depressive symptoms, generalisation to clinical samples experiencing Major Depressive Disorder needs to be done so with caution at present.

Keywords: memory specificity training; concreteness training; processing mode and depression.

1. INTRODUCTION

Depression is a common mental health disorder and is projected to be the largest source of health related disability in the world by 2030 (World Health Organisation, 2008). Depression affects one fifth of the worlds' population (lifetime prevalence 17%, Kessler et al., 1994) and is enormously costly to the individual, their family and the economy. It is a condition marked by substantial changes in beliefs, memories, and appraisals about the self and personal experiences. Past events are often recalled with a negative and self-critical bias, or the capacity to remember details of the past is often impaired (Gotlib & Hammen, 2014). These clinical-phenomenological features of depression have stimulated a range of studies examining the role of autobiographical memory dysfunction in the triggering and maintenance of depressive problems. More recently, there has been an increased focus to convert these insights into new psychological treatment techniques such as memory specificity training. This review systematically examined and synthesised the literature on different forms of memory specificity training on depressive symptoms.

1.1 The nature of autobiographical memory

Autobiographical memories (AMs) incorporate facts and knowledge about the self, and recollections of personal experiences (Williams, Conway & Cohen, 2008). Conway and Pleydell-Pearce (2000) proposed a Self Memory System (SMS) model to characterise the relationship between AM and self-identity. This model postulates that AMs are organised hierarchically based on the specificity of the memory (see Figure 1). The highest level 'lifelong periods' memories that constitute periods of time which have precise start and end points. The second level, 'general events' describes summaries of repeated types of events. The most detailed level 'event-specific knowledge', contains specific, single events that are marked by rich visual and sensory qualities. If the highest level of autobiographical information is activated, the search for a more detailed memory typically cascades down the hierarchy. This retrieval process is modulated by 'the working self' and is influenced by the goal state of the individual (Conway & Pleydell-Pearce, 2000).

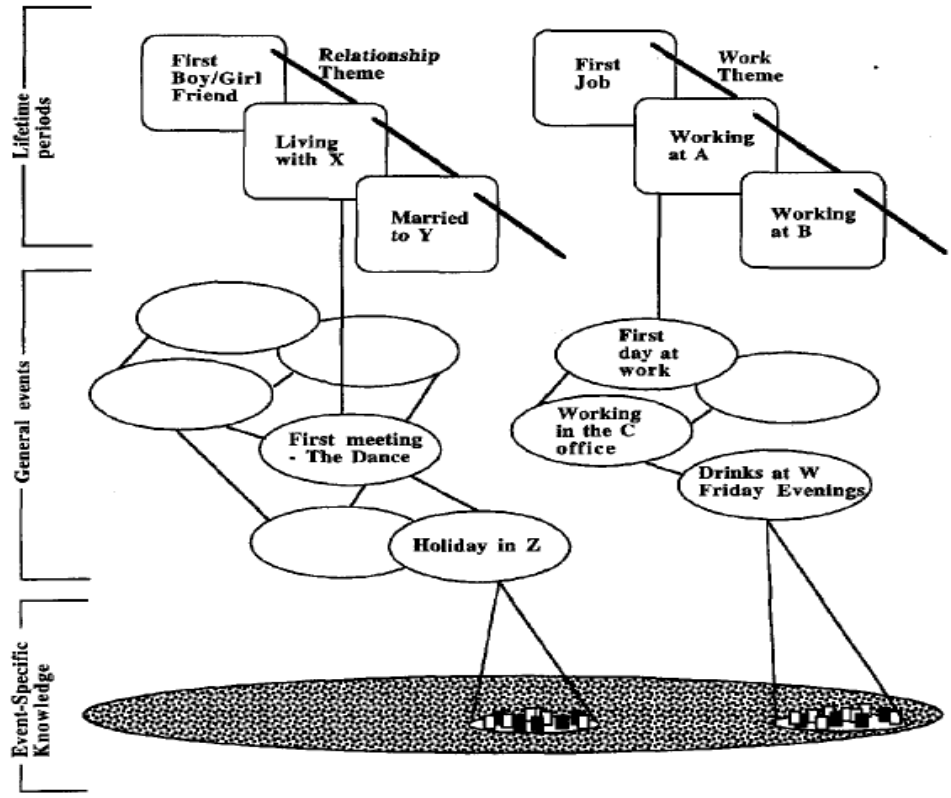


Figure 1. The hierarchical structure of autobiographical memory. Reprinted from "Autobiographical Memories and Autobiographical Knowledge", by M.A. Conway, 1996, in D.C. Rubin (Ed.), Remembering Our Past: Studies in Autobiographical Memory, (p.68), Cambridge, England: Cambridge University Press. Copyright 1996 by Cambridge University Press. Cited in "The Construction of Autobiographical Memories in the Self-Memory System", by M. A. Conway and C. W. Pleydell-Pearce, 2000, Psychological Review, 107 (2), p. 265.

1.2 Depression and autobiographical memory

Research has shown that people with depression recall fewer specific memories by exhibiting an overgeneral memory (OGM) retrieval style (Williams et al., 2007). Therefore the AM search is truncated prior to reaching the specific details in the hierarchy (Conway & Pleydell-Pearce, 2000). Over time, this develops into a habitual retrieval style that affects the recall of positive and negative memories. Evidence suggests that an OGM style remains once depression is treated and is predictive of poorer outcomes (Brittlebank, Scott, Williams & Ferrier, 1993).

1.3 Depression and abstract cognitive bias

Information can be processed using abstract high level construals or concrete low level construals (Trope, 1989; Trope & Liberman, 2000). Low level construals are concrete mental representations used to describe specific information. They contain complex, contextualised and subordinate features (e.g. 'Amanda never washed the dishes after her friends came to stay'). High level construals, however, are abstract mental representations which describe information in general terms. They include simple characteristics containing superordinate features (e.g. 'Amanda is messy'). Processing information in an abstract manner is a characteristic of depression and is associated with other cognitive biases such as overgeneralisation and rumination. Overgeneralisation refers to "the pattern of drawing a general rule or conclusion on the basis of one or more isolated incidents and applying the concept across the board to related and unrelated situations" (Beck, 1967, p.49). Rumination is characterised by a repetitive thinking style that focuses on the causes, meaning and implications of difficulties (Nolen-Hoeksema, 1991). Rumination is associated with poor problem solving (Watkins & Moulds, 2005) and global negative self-evaluations (Rimes & Watkins, 2005). Depression is also characterised by self-focused attention which can be maladaptive if the focus is analytical (ruminative), or adaptive if it is mindful self-awareness (Teasdale, 1999).

1.4 Memory specificity/ concreteness/ processing mode training

Research has recently applied this knowledge of cognitive biases clinically by developing interventions such as mode of processing training (Moberly & Watkins, 2006), Memory Specificity Training (MEST, Neshat-Doost et al., 2013), and Concreteness Training (CNT, Watkins & Moberly, 2009). The interventions can be delivered by a wide range of professionals with minimal face to face therapist contact, therefore they offer potential advantages as a scaleable therapeutic intervention. The remainder of the review will use

the term ‘specificity training’ to refer to all three interventions.

1.5 Summary and aims

To date, specificity training interventions to improve depressive symptoms have not been systematically evaluated. This knowledge will be of important clinical value as it will be useful to understand the cognitive mechanisms which maintain depression so that therapies can be delivered more efficiently. As mode of processing and OGM are both connected to the development and maintenance of psychopathology, further research is warranted in this area.

This review aimed to answer the following questions;

1. Does specificity training improve depressive symptoms?
2. What cognitive mechanisms mediate changes in depressive symptoms following specificity training?

1.6 Objectives

1. To explore the impact of specificity training on depressive symptoms.
2. To assess the relationship between content of training and depressive symptom change.
3. To explore the relationship between cognitive mechanisms (e.g. rumination; overgeneralisation) and depressive symptoms.
4. To determine post-training changes in specificity of thinking.
5. To evaluate the quality of the studies that employed specificity training to target depressive symptoms.

2. METHODS

2.1 Search methodology

The following databases were searched for relevant studies on the 21st February 2015: Medline and Embase (via OVID online); PsychINFO (via EBSCOhost); and Web of Science (via Web of Knowledge).

The following search terms were used;

- Training

AND

- Concrete* OR overgeneral memor* OR over general memor* OR over-general memor* OR memory specificity OR autobiographical memor* OR autobiographical memor* (mapped) OR processing mode

AND

- Depress* OR depression (mapped)

No date limitations were added.

2.2 Inclusion criteria

Population: Participants across the age range.

Intervention: MEST/CNT/processing mode that focused on modification of depressive symptoms.

Comparators: Pre and post depressive symptom scores.

Outcomes: An outcome of depressive symptoms on a validated measure.

Study design: Randomised controlled trials and controlled trials.

2.3 Exclusion criteria

Non-English language papers; qualitative studies; non-peer reviewed publications; book chapters; review papers; interventions embedded in a broader training programme e.g. life review or mindfulness; interventions that primarily focus on treatment of another disorder.

2.4 Data synthesis

Following the recommendations of Popay et al. (2006), a narrative-synthesis approach was chosen for this review due to the heterogeneity between the participants, methods and interventions. This approach consists of three stages; 1) developing a preliminary synthesis, 2) exploring relationships between articles and 3) assessing the robustness of the synthesis. Narrative synthesis approaches can be criticised for lacking in transparency; being prone to bias; and varying in the quality of how they are conducted (Snilstveit, Oliver & Vojtkova, 2012). A narrative synthesis approach can, however, summarise and evaluate qualitative and quantitative findings from multiple studies that, due to the variation within the data, cannot be evaluated by more rigorous meta-analyses. Popay et al.'s (2006) recommendations were used to reduce bias, to increase transparency and inter-rater reliability in the selection and analysis of studies. A data extraction form (Appendix

2) was developed based on published guidance (Centre for Reviews and Dissemination, 2009).

2.5 Developing a preliminary synthesis

The preliminary synthesis of the studies entailed tabulation of the research data to include: intervention type, comparison groups, cognitive mechanisms explored, outcome on depressive symptoms and quality ratings.

2.6 Exploring relationships between articles

Information relevant to the systematic review's objectives was initially entered into a data extraction list (see Table 1). Vote counting was used to identify the frequency of which themes relevant to the review appeared across the studies.

2.7 Assessing the robustness of the synthesis

The robustness of the descriptive and analytical themes derived from the literature was assessed through reflecting critically on the synthesis process (as recommended by Popay et al., 2006).

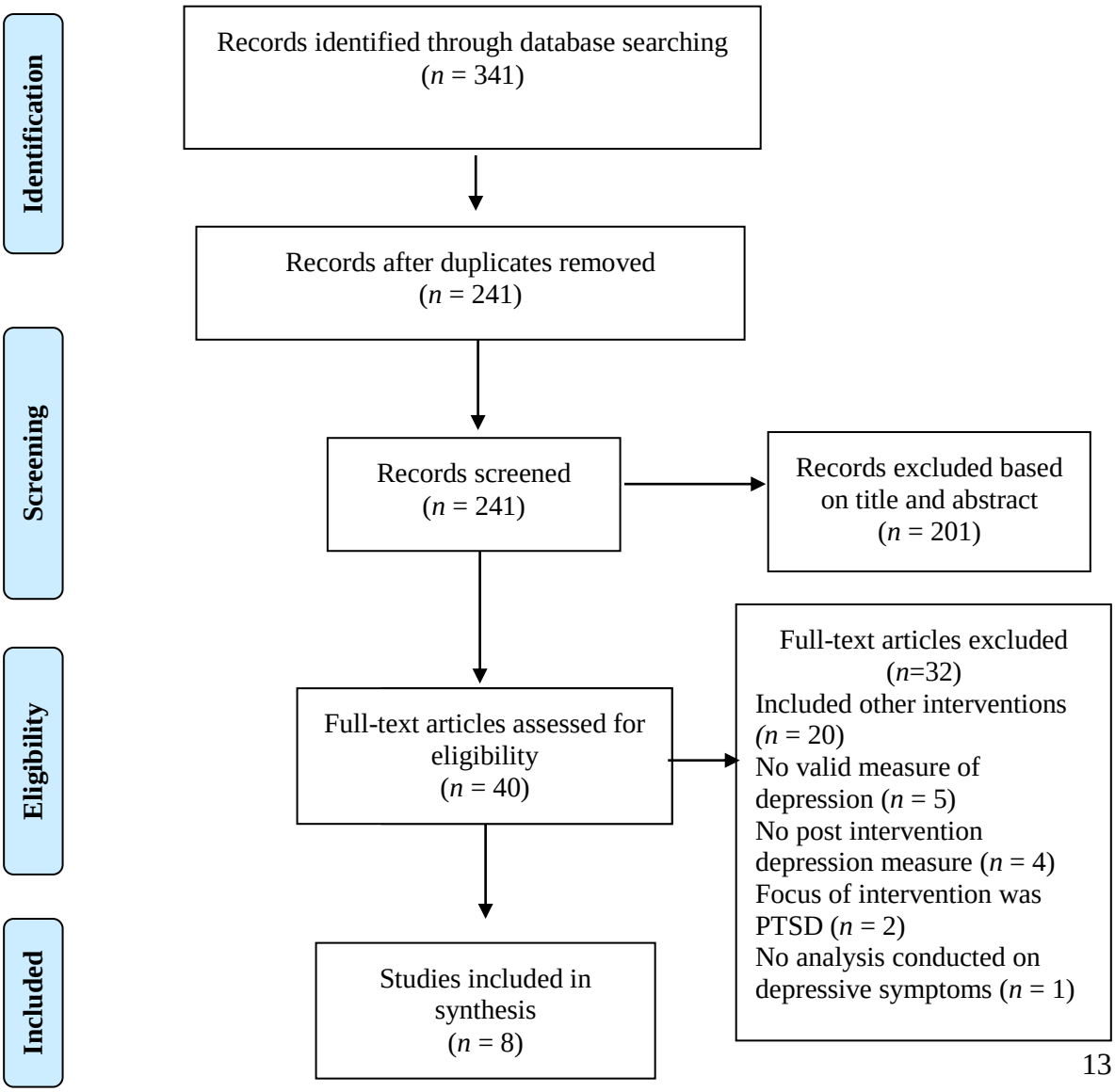
2.8 Methodological quality of studies

The quality of the included studies was appraised by using the Crowe Critical Appraisal Tool (CCAT, Crowe & Shepard 2011, Appendix 3). The CCAT assesses the quality of research studies through scoring 22 items in eight appraisal categories: preliminaries, introduction, design, sampling, data collection, ethical matters, results and discussion. Each category is given a score out of five, a total score and percentage. The CCAT does not offer qualitative descriptions of the scores. Other appraisal tools have concluded that >75% represents 'good quality', >50% is considered as 'acceptable quality' and <50% demonstrates 'poor quality' (Walsh & Downe, 2006). The author rated the studies. To ensure reliability, an independent rater also reviewed 5/8 of the papers. There was between 92.5% to 97.5% agreement on the scoring items, disagreements were resolved by discussion and consensus ratings were used.

3. RESULTS

Figure 2 summarises the study selection process. The electronic databases search identified 341 studies, 241 were reviewed once duplicates were removed. Of this total, 201 studies were rejected following screening of titles and abstracts, 40 full papers were assessed. A total of eight studies met the inclusion criteria. An independent rater assessed 15 papers (eight deemed appropriate for inclusion and seven for exclusion) to ascertain reliability of the inclusion criteria. There was 87% agreement between the two raters which led to an adjustment of the inclusion/exclusion criteria, following this there was 100% agreement. No additional papers were found through searching Google scholar (first 100 hits), from the references lists from eligible studies or by contacting key authors (two replied).

Figure 2. Flow diagram of study selection process



3.1 Preliminary synthesis of studies

See Table 1 for a description of the interventions and Table 2 for information regarding sample characteristics. Relevant information from the articles was collated on the data extraction form and a data extraction list see Table 3 (Appendix 4 contains references). Vote counting demonstrates the number of papers that recorded the relevant categories for this review. Table 4 contains the tabulation synthesis of the included studies.

Table 1. Description of specificity training interventions

Intervention	Authors	Abbreviated Description of Intervention
Processing mode	Moberly & Watkins (2006)	Single session, no homework. Presentation of pictures depicting HS. Participants in groups were taught how to focus on the scenarios in more concrete ways.
	Hetherington & Moulds (2013)	Modelled training on above, however only used verbal material.
MEST	Neshat-Doost et al. (2013)	Five weekly sessions and homework tasks. Practice recalling AMs with specific details.
CNT	Galfin et al. (2012)	Single 30 minute session. Four weeks of 10 minutes daily homework. Asked to recall and visualise AMs with concrete details. Given audio recording of intervention to practice.
	Mogoase et al. (2013)	Online intervention for seven days. Sent daily email of a 15 minute task to increase concreteness of thinking. Similar instructions as Watkins & Moberly (2009). Used HS.
	Watkins & Moberly (2009)	Single 70 minute session. 30 minutes homework for seven days. Included relaxation in session and homework. Asked to focus on thinking of events (HS and AMs) in more concrete ways using mental imagery. Given audio recording of intervention to practice.
	Watkins et al. (2009)	Single 1.5-2 hour session. Same duration as above and similar method. Additionally used problem solving techniques with events.
	Watkins et al. (2012)	Single 1.5-2 hour session and 30 minutes daily homework for six weeks. Identified a mildly upsetting difficulty and worked through standardised steps to enable concrete thinking. Mental imagery. Given audio recording of intervention to practice.

Note: HS =Hypothetical Scenarios; AM = Autobiographical Memories.

Table 2. Sample characteristics

Study	Status of Participants	Mean (*SD*) of Depressive Symptoms per Condition			Age Mean & (*SD*)	Gender	Total Sample (*n*)
		Treatment	Control	Alternative			
Moberly & Watkins (2006)	First year undergraduate psychology students	12.59[1] (10.28)	-	11.11[1] (6.12)	19.72 (3.69)	54 F	54
Hetherington & Moulds (2013)	Undergraduate psychology students & community members. Low and high dysphoric participants	3.04[1] (2.03) 20.83 (7.94)	3.10[1] (2.16) 20.83 (7.94)	3.48[1] (2.28) 21.29 (7.88)	17-53 (range)	47 M, 89 F	136
Neshat-Doost et al. (2013)	Bereaved adolescents who were recent refugee immigrants from a war zone	27.42[3] (13.63)	30.64[3] (15.47)	-	14.88 (1.89)	12 M, 11 F	23
Galfin et al. (2012)	Patients in palliative care	7.29[2] (4.23)	5.83[2,4] (2.55)	-	49-86 (range)	15 M, 19F	34
Mogoase et al. (2013)	Undergraduate students	21.15[1] (7.76)	17.90[1] (8.41)	-	22.87 (4.27)	2 M, 40 F	42
Watkins & Moberly (2009)	Students and community adults	25.8[1] (9.7)	-	25.2[1] (7.0)	Adults#	8 M, 28 F	36
Watkins et al. (2009)	Students or community adults who experienced depressive symptoms	25.50[1] (6.69)	26.45[1] (12.64)	25.85[1] (10.03)	Adults#	21 M, 39 F	70^
Watkins et al. (2012)	Primary care patients	32.90[1] (10.03)	32. 52[1] (9.68)	32.16[1] (9.65)	Adults#	43 M, 78 F	121

Note: [1]= Becks Depression Inventory–II (BDI-II); [2]= Beck Depression Inventory-Fast Scale (BDI-FS); [3=] Persian version of the Mood and Feeling Questionnaire (pMFQ); SD = standard deviation; # Studies only gave mean and SD per condition; ^ = 10 participants were allocation to treatment but dropped out, demographic information is not provided; [4]= Differences in means were controlled for in the analysis.

Table 3. Data extraction list

Category	Sub Category	Count (/8)
Type of training	MEST	1
	CNT	5
	Processing mode	2
Format of sessions	Group	2
	Individual	4
	Individual or group	1
	Online	1
Duration of intervention	One session only	2
	One session and seven days homework practice	3
	One session and four weeks homework practice	1
	One session and six weeks homework practice	1
	Five weekly sessions and homework practice	1
Telephone contact	Telephone contact	3
	No telephone contact	5
Components	Problem solving	2
	Relaxation	2
	Mental Imagery	5
Sample characteristics	Clinical sample with depression	1
	Inclusion criteria above cut off for depression symptoms	5
	Stable dysphoria	3
Status	Students (included adolescents)	3
	Community members	2
	Mixed students and community members	3
Age	Adolescents	1
	Adults	6
	Mixed adults and older adults	1
Content of intervention (i.e. what the intervention focused on increasing the specificity of)	Hypothetical scenarios	3
	Autobiographical memories	3
	Hypothetical scenarios and autobiographical memories	2
Cognitive mechanisms explored	Memory specificity	2
	Concreteness of thinking	5
	Rumination	6
	Self-focus	2
	Global evaluations (irrational cognitions)	1
	Overgeneralisation	2
	High standards	1
	Self criticism	1
Outcome on depressive symptoms	Improvement post training	3
	No improvement post training	5
	Improvement at follow up	2/3

3.2 Exploring relationships between articles

3.2.1 Outcome of training on depressive symptoms

There are many variations in the components of training; the content used (HS, AMs or both); length of intervention sessions (some not reported, others ranged from 15 to 120 minutes); length of follow-up (1 day to 6 weeks); format (online, one to one or group); homework length (not reported, none, 15 or 30 minutes); materials used for homework (CD, diary, workbook, telephone contact). Therefore, it is difficult to make clear conclusions about the results of the training as a whole on depressive symptoms. Furthermore, 50% of the studies were conducted by the same research group (Watkins et al.) and were published within six years of each other, therefore this might introduce potential experimenter bias. Although the studies were conducted in the same area, from the wording of the inclusion/exclusion criteria, there is nothing to indicate that the samples were not independent. Similar results from different research groups increases the validity and reliability of the results found. Although significant results have been largely found by one research group, there are also significant findings in other samples (Hetherington & Moulds, 2013; Neshat-Doost et al., 2013), however these findings are weaker.

Moberly and Watkins (2006) investigated how processing mode training changed rumination and mood state following a failure task. The failure task involved participants completing difficult problems. Positive affect did not alter following training, however, there was a reduction in negative affect across both concrete and abstract conditions. After the failure task, mood was negatively affected in both conditions. High trait rumination, however, was only associated with reduced positive affect for the abstract condition. Hetherington and Moulds (2013) examined whether processing mode training following a success task (an easy task), would influence affect in low and high dysphoric individuals. No changes in affect were found, except an increase in positive affect and a decrease in negative affect in the controls. Processing mode did not alter affect following the success task in low or high dysphoric individuals. These studies demonstrate inconsistent results. Concrete processing mode training showed no impact on mood in one study and reduced negative affect in the other. As negative affect also decreased significantly for participants in the abstract condition, there is limited evidence for the improvements in mood observed in the experimental group being solely due to concreteness of thinking. There is initial evidence however that following a failure experience, concrete processing mode training is protective of positive affect. This finding suggests potential benefits for processing mode

to be manipulated as part of a larger intervention (e.g. CNT) which was then later developed and investigated.

Galfin et al. (2012) and Mogoase et al. (2013) did not find significant reductions in depression following CNT. Watkins et al. (2009) found depression symptoms significantly reduced in the CNT and BGT (Bogus Concreteness Training, active control condition), compared to the Waiting List (WL) condition. There were significantly greater reductions on one measure of depression for those in the CNT condition compared to the BGT condition. It should be noted that there were no significant differences between the groups on another measure of depression (although there was a trend towards a significant reduction). This difference demonstrated a medium effect size. Watkins and Moberly (2009) found significant reductions in depression symptoms for both the CNT+ Relaxation Therapy (RT) and RT conditions, however the CNT condition demonstrated greater reductions, with a small-medium effect size. Watkins et al. (2012) recruited the only clinical sample (current episode of Major Depression or subthreshold) in this review. They found that CNT+Treatment As Usual (TAU) compared to TAU demonstrated significant reductions in depressive symptoms. There were no differences however, between the CNT and RT conditions. Therefore the majority of CNT studies (3/5) found significant reductions in depression symptoms. Whether CNT provides greater reductions in depression symptoms relative to comparison treatments is still unknown. Watkins and Moberly's (2009) results should be interpreted with caution as the groups were not matched for intervention factors (e.g. intervention duration) that could have confounded these results.

Two studies conducted follow up assessments. Neshat-Doost et al. (2013) utilised MEST. Depression symptoms did not improve compared to the controls. The MEST group, however, demonstrated improvements in depressive symptoms eight weeks post intervention whereas the control group's scores did not differ. Watkins et al. (2012) found that reductions in depressive symptoms remained significant at three and six months follow up for CNT+TAU compared to TAU. This treatment effect was only significant for mild-moderate levels of depression. Improvements in depression symptoms on the interviewer rated HAMD were only borderline significant at six months compared to TAU (per protocol analysis). There were no significant differences in depressive symptoms compared to the RT group. Therefore there is initial evidence that training individuals to

think in a concrete manner provides long term benefits in mood. MEST demonstrated a delayed treatment response, whereas improvements in depression following CNT remained stable overtime.

3.2.2 Content of training

Two main types of material were used as the focus for training. Hypothetical scenarios (HS) involved a description of an event (e.g. 'it is your birthday. Your family organised a party for you at home'). Scenarios using autobiographical memories (AMs) involved the participants recalling personally experienced events. None of the three studies that used only HS found significant reductions in depression symptoms (Mogoase et al., 2013; Hetherington & Moulds, 2013; Moberly & Watkins, 2006). Three studies used AMs. Two found significant reductions in depression (Neshat-Doost et al., 2013; Watkins et al., 2012) and one did not (Galfin et al., 2012). Studies that used both HS and AMs found significant improvements in depression symptoms (Watkins & Moberly, 2009; Watkins et al., 2009). Therefore the majority of evidence suggests that improving the concreteness of AMs improves mood.

3.2.3 Relationships between cognitive mechanisms and depressive symptoms

Rumination

Rumination was assessed by examining the extent to which individuals dwelled on things that had happened. Six studies investigated rumination. Watkins et al. (2012) found CNT significantly reduced rumination compared to RT. Watkins and Moberly (2009) found a marginally significant reduction in rumination in the CNT condition compared to RT. Watkins et al. (2009) found a significant reduction in rumination for CNT and BGT but not for the WL condition. The reduction in rumination in the CNT condition was not greater compared to the BGT condition. The findings for the above studies were also associated with significant reductions in depression symptoms.

Mogoase et al. (2013) found no reductions in depression symptoms or rumination. Moberly and Watkins (2006) found that trait rumination significantly predicted positive affect post failure induction, after level of positive affect post training was controlled. Rumination was not a significant predictor of negative affect post failure induction. Higher levels of rumination were associated with reduced positive affect after the failure task, but only in the abstract condition. Hetherington and Moulds (2013) only assessed rumination

post intervention. Unsurprisingly, high dysphoric individuals scored higher in rumination than low dysphoric individuals.

The results from the Watkins et al. (2009) study need to be interpreted with caution as an intention to treat or per protocol analysis was not adopted for rumination scores, therefore this could have biased the results. Overall, however, all the studies that showed reductions in depression symptoms showed reductions in rumination, suggesting that this is a key mechanism that mediates change in depressive symptoms.

Self focus

Two studies assessed self-focus. Participants were asked 'how much are you focusing on yourself right now?' Moberly and Watkins (2006) found no change in self-focus between the abstract and concrete conditions. Hetherington and Moulds (2013) found that participants in the control condition showed a significant reduction in self-focus post training compared to those in the abstract and concrete conditions. In conclusion, concrete processing mode training did not elicit changes in self-focus. Therefore, this evidence suggests that concrete processing mode does not change self focus implying that self-focus does not mediate reductions in depression symptoms in these studies.

Overgeneralisation

Two studies assessed overgeneralisation. Watkins et al. (2009) assessed the inclination to generalise from a bad experience to a broader negative sense of self-worth. They found significant reductions in overgeneralisation in the CNT condition, but not in the BGT or WL conditions. Watkins et al. (2012) assessed negative overgeneralisation in terms of a negative event being rated as due to the self, stable and global. They found that CNT significantly reduced negative overgeneralisation compared to RT and TAU conditions. Overall there is evidence to suggest that CNT targets overgeneralisation more so than alternative treatments and controls. Also it seems that improvements in overgeneralisation underlie improvements in depressive symptoms.

Self-criticism and high standards

Watkins et al. (2009) assessed self-criticism and high standards. They found a significant reduction in self-criticism in the CNT condition, no significant change in the BGT condition and a significant increase in the WL condition. No significant reductions were

found in high standards for any condition. Therefore evidence suggests that processing information in a more concrete manner allows individuals to be less critical of themselves, which is associated with a significant reduction in depressive symptoms.

Global evaluations

Mogoase et al. (2013) assessed global evaluations (irrational cognitions). They found a marginally significant decrease in global evaluation in the CNT group but a significant increase in the control group. This was associated with a non-significant reduction in depression symptoms. It might be that change in irrational cognitions requires a longer treatment to elicit significant reductions in depressive symptoms.

Problem solving

Watkins et al. (2009) found that problem solving ability did not improve in any of the conditions; however they found an improvement in depressive symptoms. Therefore this initial evidence demonstrates that CNT does not target problem solving ability, and therefore change in this cognitive mechanism may not be required for improvements in depressive symptoms.

Concreteness of thinking post training

Galfin et al. (2012) and Watkins and Moberly (2009) did not assess memory specificity or concreteness of thinking. Two studies assessed AM specificity. Neshat-Doost et al. (2013) demonstrated that MEST improved memory specificity. This was not associated with an improvement in depressive symptoms immediately post training, although depressive symptoms were significantly reduced eight weeks post intervention. Mogoase et al. (2013) found that CNT did not reduce depressive symptoms or increase AM specificity, but concreteness of thinking did improve.

All studies that assessed concreteness of thinking, found improvements post intervention. For two studies this was associated with improvements in depressive symptoms (Watkins et al., 2009; Watkins et al., 2012). However the results from the Moberly and Watkins's (2006) study suggest this improvement in depression symptoms was not solely due to increased concrete thinking. Watkins et al. (2009) however, demonstrated that concreteness of thinking only showed a trend towards being significantly correlated with depressive symptoms. Two studies demonstrated that

although concreteness of thinking improved, depressive symptoms did not (Hetherington & Moulds, 2013; Mogoase et al., 2013). Therefore preliminary evidence suggests that, as intended, specificity training does improve concreteness in thinking. Evidence to suggest that improvements in concrete thinking mediate improvements in depressive symptoms is inconclusive. There is mixed evidence for improvements in AM specificity following specificity training, and whether such changes are associated with improvements in depression.

Together the results present mixed evidence of whether concrete processing mode training improves mood after one session. It seems however, that concrete mode training is protective of positive affect for individuals with high trait rumination after a failure task. MEST provided five sessions in comparison to a single session for the other interventions, suggesting that more face to face therapist contact is not required to produce significant results. Most of the evidence suggests that CNT delivered face to face improves depressive symptoms compared to controls, however, it is inconclusive whether CNT has added therapeutic benefit to alternative treatments. CNT delivered online did not produce reductions in depression symptoms, and the group interventions produced less clear results, suggesting that there may be added benefit from these interventions being delivered on an individual basis.

There is mixed evidence about what durations of interventions (including time spent on homework) produce significant reductions in depressive symptoms. Although evidence suggests that one to one CNT with seven days practice produces significant reductions in depressive symptoms, the differences in results may be accounted for by differences in format, content or sample characterises. Nothing is known about the stability and durability of improvements in depressive symptoms following seven days practice of CNT. There is initial evidence of long term benefits in depressive symptoms from engagement in CNT and a delayed response effect from MEST interventions.

All studies that assessed concreteness of thinking found improvements post intervention, and one study (out of two) found improvements in memory specificity. There is mixed evidence whether thinking with more concrete construals is associated with improvements in mood. Improved depression symptoms were associated with reduced

rumination, overgeneralisation and self-criticism. This suggests that CNT targets these cognitive mechanisms, which has positive implications for low mood.

The different components of the CNT training may also have implications for the results. The studies with additional components (e.g. problem solving ability and relaxation skills) found reductions in depressive symptoms. The majority of evidence suggests that interventions using autobiographical memories produce the best results. It is unclear whether level of depressive symptoms affected the results. Based on Watkins et al. (2012) it is possible to conclude that CNT works best for mild-moderate levels of depression. It is unclear however, which category of severity of depression CNT is most effective for.

3.3 Assessing the robustness of the synthesis

The robustness of the themes derived from the literature was assessed through reflecting critically on the synthesis process by including a critical discussion above. This discussion took into account the limitations and potential sources of bias from the conclusions drawn from the studies.

3.4 Methodological quality of papers

The quality of the data was appraised using the CCAT (Crowe & Shepard, 2011, see Table 4 for the total and percentage scores). All the studies were randomised controlled trials. Using the qualitative descriptions, five studies were rated as 'good quality' and three as 'acceptable quality'. Only three studies stated how the groups were randomised (Galfin et al., 2012; Watkins et al., 2012; Neshat-Doost et al., 2013). Additionally, only two studies (Watkins et al., 2012; Neshat-Doost et al., 2013) stated that the researchers assessing the participants were blind to the treatment allocation. Watkins et al. (2009) and Watkins et al. (2012) included interviewer rated measures to assess depression symptoms, which reduces the bias of over stating symptoms in self reporting measures. Therefore the lack of details in the randomisation, within the Watkins et al. (2009) and Watkins and Moberly (2009) studies could have inflated the true effect of the results.

As the Hetherington and Moulds' (2013) and Moberly and Watkins' (2006) studies involved one session, they were not required to use intention to treat analyses. Of the remaining studies, three studies (Watkins et al., 2012; Galfin, et al., 2012; Neshat-Doost et

al., 2013) used intention to treat or per protocol analyses. Three studies (Moberly & Watkins, 2006; Watkins et al., 2009; Mogoase et al., 2013) only analysed the participants that were tested. On the basis of this information, there needs to be an improvement in studies reporting randomisation methods, using intention to treat/per protocol analyses and blinding to reduce the risk of bias. Further reflections on the strengths and weaknesses of the studies are detailed in the discussion.

Table 4. *Tabulation synthesis of results for <u>significant</u> findings*

Study	Groups	Effect on Depressive Symptoms	Mechanism(s) of Change Examined	CCAT /40 (%)
Moberly & Watkins (2006)	Concrete process -focused processing mode Abstract, evaluative processing mode	*Post training: Negative affect: PANAS* Significant reduction in affect across both concrete (d = 0.35#) and abstract conditions (d = 0.20#) *After failure manipulation:* Significant decrease in positive affect, and increase in negative affect, however analysis was not computed between conditions	*Rumination* Higher levels trait rumination associated with less positive affect post failure for abstract condition	29 (73%)
Hetherington & Moulds (2013)	Concrete processing mode Control Abstract processing mode - think about the meanings and implications of each situation.	*Post training: Positive affect: PANAS* Significantly lower in the control condition to the concrete/abstract conditions ^ *Negative affect: PANAS* Significantly higher in control condition compared to the concrete/abstract conditions^	*Concreteness of thinking* Abstract condition used more abstract, evaluative responses than the concrete condition^ *Rumination (only assessed post success)* Higher dysphoric individuals scored significantly higher in rumination than the low dysphoric group *Self focus* Post training, the control condition was significantly less self-focussed than the concrete and abstract conditions. Controls were less self-focused from pre to post training ^	27 (68%)
Neshat-Doost, et al. 2013)	MEST Control	*Follow up (8 weeks)* MEST group's depression symptoms decreased compared to controls (ITT d = 0.97). Also MEST group were less depressed at follow up compared to post training (ITT d = 0.47)	*AM specificity- Post training* The MEST group reported an increase in specific memories compared to controls (d = 2.56). The MEST group's memory specificity improved from pre to post intervention (d = 2.14)	30 (75%)

Table 4 continued

Study	Groups	Effect on Depressive Symptoms	Mechanism(s) of Change Examined	CCAT /40 (%)
Galfin, et al. (2012)	CNT Control			36 (90%)
Mogoase, et al. (2013)	CNT Control		*Concreteness of thinking* Significant increase in the CNT condition (d = 0.61) *Global Evaluations (irrational cognitions)* Global evaluation demonstrated a marginally significant decrease (d = 0.46) from pre-to-post intervention in the CNT group and significantly increased in the control group (d = 0.61). This difference became significant post intervention (d = 0.64)	30 (75%)
Watkins & Moberly (2009)	CNT + Relaxation Training (RT, progressive muscle relaxation) RT	Significant reductions from pre to post in CNT+RT (d= 1.31#) and RT (d= 0.82#) conditions. The reduction was greater from pre to post for CNT+ RT (d=1.30#) compared to RT (d= .45#)	*Rumination* Reduction in rumination from pre to post in CNT+RT (d= 1.40#) and RT (d= 0.46#) conditions. Greater reduction pre to post in RT + CNT than RT (d= 0.58#)	27 (68%)

Table 4 continued

Study	Groups	Effect on Depressive Symptoms	Mechanism(s) of Change Examined	CCAT /40 (%)
Watkins, et al. (2009)	CNT Bogus Concrete Task (BGT) Computerised task – active control condition Waiting List	BDI-II: Significant reduction from pre to post for the CNT group and BGT group but not the WL. The reduction was greater in the CNT condition compared to the WL (d=1.36), but not compared to BGT HDRS: Significant reductions from pre to post for in the CNT condition, but not the BGT or WL conditions. The CNT condition demonstrated greater reductions pre to post compared to the WL (d = 1.00) and BGT (d= -.59#) and there were no differences between the BGT and WL conditions	*Rumination* Main effect of time. The CNT and BGT conditions demonstrated significant reductions from pre to post, but not in the WL condition. The CNT condition only demonstrated greater reductions compared to the WL(d=0.82#) condition and no differences were found between the BGT and WL conditions *Overgeneralisation* Only the CNT condition significantly reduced overgeneralisation from pre to post *Self criticism* Significant reduction pre to post in the CNT condition and a significant increase in the WL condition *Concrete thinking* Only the CNT condition demonstrated a greater increase pre to post. Significantly greater increase from pre to post in CNT relative to the BGT (d = 0.62#) & WL conditions (d = 0.62#)	30 (75%)

Table 4 continued

Study	Groups	Effect on Depressive Symptoms	Mechanism(s) of Change Examined	CCAT /40 (%)
Watkins, et al. (2012)	CNT +TAU TAU RT +TAU Progressive muscle relaxation and breathing training	Post treatment, TAU+CNT compared to TAU showed significant reductions on HAMD (ITT: d =0.76), BDI-II (ITT, d=1.07) and PHQ-9 (ITT: d=0.89) TAU+CNT compared to TAU+RT significant reductions only for PHQ-9 (PP: d= -.62#) *Follow up* From post treatment to follow up, TAU+CNT compared to TAU was borderline significant at six months on HAMD PP^. TAU+CNT compared to TAU demonstrated a reduction in BDI-II and PHQ-9 at 8 weeks, 3 and 6 months follow up^. Significant treatment effect between TAU+CNT compared to TAU for mild to moderate levels of depression	*Rumination* Post intervention, TAU+CNT compared to TAU demonstrated a greater reduction (ITT, d= -0.73#) *Negative overgeneralisation* Post intervention, TAU+CNT compared to TAU demonstrated a greater reduction (ITT, d= -0.46#) also compared to TAU+RT (ITT, d= -0.62#) *Concrete thinking* Post intervention, TAU+CNT compared to TAU demonstrated a greater increase (ITT, d= 0.84#)	37 (93%)

Note: CNT= Concreteness Training; RT = Relaxation Training; TAU = Treatment As Usual; MEST = Memory Specificity Training; BDI-FS = Becks Depression Inventory - Fast Scale; BDI-II = Becks Depression Inventory – II; HAMD/HDRS= Interviewer rated Hamilton Depression Rating Scale; PANAS= Positive and Negative Affect Schedule; PEQ = Problem Elaboration Questionnaire; AMT = Autobiographical Memory Test; RRS = Ruminative Response Scale; ABS-II = Attitude and Belief Scale; ASQ = Attributional Style Questionnaire (negative overgeneralisation); AM = Autobiographical Memories; HS =Hypothetical scenarios; H/W = homework; PP = Per Protocol analysis; ITT = Intention to Treat analysis; # = effect size calculated by researcher; ^information not available to calculate effect size.

4. DISCUSSION

The presence of cognitive biases in depression is well known. Research into specificity training for depression is one attempt at applying this knowledge. This is the first systematic review to synthesise this limited evidence base. This review has highlighted that a lot of heterogeneity exists across the studies in terms of methods of interventions, samples and results. There are many variations in the components of the training, the content used, duration of sessions, length of follow-up and homework details. Additionally there is a wide range of baseline levels of depression. Six of the studies used student samples which leads to further questions of the generalisability of the results.

Three studies (Watkins et al., 2012; Watkins et al., 2009; Watkins & Moberly, 2009) present evidence that CNT improves depressive symptoms compared to TAU. There is mixed evidence as to whether CNT produces greater reductions in depression compared to other treatments. Watkins et al. (2012) found that CNT was not more effective than relaxation training, however the study was not powered to detect differences to an active condition. Watkins and Moberly's (2009) results found a greater treatment effect for CNT compared to RT, however these results need to be interpreted with caution as the groups were not matched for intervention factors that could have confounded these results. The quality of the studies that produced significant results were of 'good quality' (Watkins et al., 2012; Watkins et al., 2009) and one of was 'acceptable quality' (Watkins & Moberly, 2009). Although the samples appear to be independent, half of the included studies were conducted by the same research group and therefore some caution should be taken when generalising these findings.

MEST demonstrated a delayed treatment response. Neshat-Doost et al. (2013) found that a reduction in depressive symptoms only became significant at an eight week follow up in refugee war migrants. Due to a delayed response to the intervention, it could be that there was a spurious effect e.g. natural recovery. The study did not provide detail of comorbidities or length of time since the bereavements which may have affected the results. Galfin et al. (2012) found that CNT did not reduce depressive symptoms in cancer patients. These patients however would be experiencing deteriorating health and increased fatigue which could contribute to depressive symptoms. This finding is consistent with

previous research of patients in palliative care receiving cognitive behavioural therapy from nurses (Moorey et al., 2009).

Of the four studies that did not find significant reductions in depressive symptoms, two did not provide a power calculation (Moberly & Watkins, 2006; Hetherington & Moulds, 2013), and two reached less than optimal power (Mogoase et al., 2013; Galfin et al., 2012). Therefore larger samples could elicit different findings. Three of the studies assessed the success of the intervention after a week (two with significant findings). Therefore it seems that a one week intervention in CNT can produce significant reductions in depression measures but the longer term benefits are still unknown. Due to the variation in the interventions it is difficult to conclude which severity level of depression CNT is most effective for.

Interventions that included AMs reduced depressive symptoms at post intervention or follow up. Therefore, interventions using self-relevant events (e.g. AMs) may be more effective, perhaps because it is easier to generalise skills to other self relevant events in the participants' lives which could reduce rumination. Rumination is focused on personal past experiences but in an insufficiently specific way, to promote effective problem solving. Using AMs and teaching specificity may break this cycle by switching to a more productive problem solving mode. Linked to this hypothesis, two out three studies that found reductions in depression used problem solving in their intervention. Only one, however, investigated the impact of training on problem solving ability which found no improvements. In line with previous research, significant reductions in depression symptoms were associated with reductions in rumination, overgeneralisation (Rimes & Watkins, 2005) and self-criticism (Shahar, 2015). Therefore this suggests that these cognitive processes are involved in the maintenance of depression, and training individuals to thinking more concretely improves these mechanisms, which also positively impacts on mood. Furthermore, training to think in a concrete manner was protective of positive mood after a failure task for individuals with high trait rumination. Therefore initial research demonstrates that adopting concrete construals limits the emotional response to failure tasks.

All studies that assessed concreteness of thinking post intervention found an improvement, demonstrating that training produced a reduction in abstract construals as intended. This, however, was not always associated with an improvement in self-rated depression scores. This finding might be due to subgroup effects that influenced depression scores. For example, there might need to be a threshold of concreteness that needs to be passed in order to get an effect, or individuals might have to exceed a threshold of severity of abstract processing that is then 'fixed' by concreteness training.

Conway and Pleydell-Pearce's (2000) SMS model highlights that OGM is a result of individuals abandoning their search for a specific memory prematurely. Previous research has shown that OGM is a cognitive marker of depression (Williams et al., 2007). The results provide mixed evidence of whether improvements in concreteness of thinking are associated with improvements in depressive symptoms. This might relate to do the duration of intervention. As OGM becomes habitual over time, it might take longer for this style to convert back to the retrieval of specific details. As discussed there may also be a threshold/severity effect which impacts on outcome.

4.1 Limitations

The data extraction list was developed through systematically analysing the themes and connections within the literature. Due to time constraints, however, it was not possible to have this independently examined as recommended for best practice (e.g. Popay et al., 2006). Furthermore, this review attempted to describe associations between cognitive mechanisms of change and depression, but most studies did not provide the statistical analyses that would allow confident conclusions in this domain. Another limitation of the review is that only studies in English language were included, therefore the results and inferences made may be biased.

4.2 Future research

Although some of the studies in this review have shown that training individuals to think in a more concrete manner reduces depressive symptoms, this result has not been consistent. Therefore future research is warranted in this area to allow for more definite conclusions to inform clinical practice. More randomised controlled trials are required to account for the feasibility of CNT and MEST as evidence based interventions to treat depression. Studies

should use clinical samples; be adequately powered; detail methods of randomisation and blinding; and use intention to treat analyses. It would be helpful for future studies to conduct mediation analyses to explore the effects of cognitive mechanisms on depressive symptoms. Additionally research should compare CNT to an alternative intervention and assess the longer terms effects with follow up trials. Furthermore, it would be useful to directly test the impact of using AMs against HS within the same study. Finally, studies should assess abstract overgeneral bias by utilising a measure of AM specificity such as the Autobiographical Memory Test (Williams & Broadbent, 1986).

4.3 Conclusions

This review highlights that the evidence for specificity training as a treatment for depressive symptoms is inconsistent at present. There is some evidence that CNT improves depressive symptoms and mixed evidence whether CNT offers added therapeutic benefit to established treatments. Specificity of thinking improved in specificity training, however, this was only associated with improved mood in three studies. In order to see a reduction in depressive symptoms, a threshold of concreteness in thinking may need to be exceeded. Alternatively, individuals may have to surpass a threshold of severity of abstract processing that is then 'fixed' by concreteness training. Beck's Cognitive Theory of depression (1967) highlights the importance of cognitive biases in the maintenance of depression. In support of this, improvements in rumination, overgeneralisation and self-criticism were associated with significant reductions in depression symptoms.

This review highlights that heterogeneity exists across the included studies in terms of methods of interventions, protocols and samples. This variation makes it difficult to draw conclusions about the outcome of the interventions on depressive symptoms. The literature is of an acceptable to good quality which bolsters some conclusions, but methodological limitations (e.g. low power, bias in design and analysis) could have impacted on the findings of these studies. Due to the large variation in the samples' characteristics and level of depressive symptoms, generalisation of the results to individuals experiencing Major Depressive Disorder should be done so with caution at present.

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CHAPTER 2:
MAJOR RESEARCH PROJECT

An Examination of Self-defining Memories, Cognitive Avoidance and Metacognitive Processes in Depressed and Non-depressed Older Adults

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Written according to guidelines for submission to *Memory* (see Appendix 1)

Declaration of interests: None

Word count: 8990

Submitted in partial fulfilment of the requirement for the degree of Doctorate in Clinical Psychology (DClinPsy)

PLAIN ENGLISH SUMMARY

Background: Depression is projected to be the largest source of health related disability in the world by 2030 (World Health Organisation, 2008). Key events in one's life, and the way that they are recalled can have a dramatic impact on sense of self, and this can contribute to poor mental health. Self-defining memories (SDMs) are memories that explain how a person has come to be the person they currently are (Singer & Moffitt, 1991-1992). No previous research has assessed SDMs in depressed older adults and only three studies have assessed SDMs in older adults. Also, none of these studies have accounted for potential explanations of what processes affect the recall of these memories.

Aims: This study aimed to characterise depressed and non-depressed older adults' SDMs. Processes that might affect SDMs were also examined. In particular, how avoidance of 'thinking about thoughts' (cognitive avoidance) and the ability to 'think about thinking' (metacognition) affects the recall of SDMs.

Methods: Depressed patients in Older Adult Community Mental Health Teams and inpatient wards were compared to older adults without depression. The research involved one appointment where participants completed three questionnaires. One questionnaire measured depression symptoms, the second measured cognitive avoidance and the third measured metacognition. Participants also completed a short test which assessed factors like memory and attention, to detect difficulties in these areas that were not age related. Participants then described five SDMs and scored how important and vivid the memories were, what emotion they felt at the time of recalling each memory and how long ago the memory took place.

Results: Older adults with depression recalled fewer specific memories than non-depressed older adults. They also took less meaning from their memories (e.g. their recollections contained fewer statements such as 'this memory taught me that…'). However, the two groups had not had the same number of years of education. When this was taken into account, the differences in meaning making and memory specificity between the groups were no longer apparent. This raises the possibility that the number of years of education, not the presence of depression, caused the differences in memory specificity and meaning

making between the two groups. But, given that no other research has reported such an effect of education, it remains for future research to clarify this relationship. Cognitive avoidance was not associated with how specific the memories were and metacognition was not associated with the ability to derive meaning from the memories. Depressed older adults reported memories of the same importance and vividness as older adults without depression, the memories were also from the same timeframe. Depressed older adults however reported more negative memories whereas non-depressed older adults reported more happy memories. Both groups recalled the majority of memories that described relationships. Non-depressed older adults recalled more memories concerning achievements or recreation, whereas depressed older adults recalled more memories concerning life threatening events.

Conclusions: This study showed that depressed older adults recalled less specific memories and took less meaning from their memories than older adults without depression. Cognitive avoidance and metacognition were not associated with either of these aspects. If depressed older adults continue to define themselves by these negative key memories, recall memories in a less specific way, and do not integrate these memories in a way that shows greater self-understanding, then these factors may maintain low mood. Years of education cannot be ruled out as a factor that caused the differences in memory specificity and meaning making between the two groups. Future studies need to explore *why* depressed older adults recall less specific memories and take less meaning from their memories, and also to further examine the role of years of education on these factors.

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ABSTRACT

Background: Self-defining memories (SDMs) are key memories that describe how a person has come to be the person they currently are. Key events in one's life, and the way that they are recalled can have a dramatic impact on sense of self, and this can contribute to depression. Therefore understanding SDMs and the processes that affect their recall is of important clinical value. This research extends Singer et al.'s (2007) research by examining OAs with depression.

Research questions: This study examined the characteristics of depressed and non-depressed OAs SDMs along the dimensions of content, affective valence, memory specificity and the ability to derive meaning from memories. Additionally, the study explored contributors to overgeneral memory by measuring cognitive avoidance and assessing metacognitive factors in meaning making ability.

Methods: A cross-sectional between groups study of 16 depressed and 19 non-depressed OAs. Participants completed the Montreal Cognitive Assessment, the Geriatric Depression Scale, the Metacognitions Questionnaire-30, the White Bear Suppression Inventory, the Self-defining Memory Task and the Self-defining Memory Rating Sheet. The groups were reasonably well matched on demographic variables except for education, gender and physical health problems.

Results: Depressed OAs recalled fewer specific memories than non-depressed OAs and were less able to derive meaning from their memories. However, when years of education was controlled for in a partial correlation, the correlations between depression scores, memory specificity and meaning making ability were no longer significant. Cognitive avoidance was not significantly correlated with memory specificity and metacognition was not significantly correlated with meaning making ability.

Conclusions: These results are broadly consistent with previous studies of overgeneral memory in individuals with depression. The results raise the possibility that years of education also contributed to the differences between the two groups and so potential interpretations of this finding are also presented. None of the psychological mechanisms investigated were significantly correlated with memory specificity or integrative meaning. Larger samples and demographically matched

groups are required to conduct mediation analyses on factors influencing over general memory and meaning making ability in SDMs.

Keywords: Depression; self-defining memories; memory specificity; avoidance; and metacognition.

1. INTRODUCTION

Depression is a prominent cause of disability worldwide (World Health Organisation, 2008), and a prevalent problem for older adults (OAs). Pachana and Laidlaw (2014) highlight that depressive symptoms are common (6% to 15%) in community dwelling OAs, and 1% to 6% fulfil criteria for Major Depressive Disorder. Additionally, due to an aging population in the UK (Lutz, Sanderson & Scherbov, 2008) the number of OAs experiencing depression is expected to rise. Depression causes substantial changes in beliefs, memories, appraisals about the self and personal experiences, and therefore has a significant impact on wellbeing. The way that people remember key events from their life has been demonstrated to influence depressed mood, but this relationship needs to be better understood. The current study examined the characteristics of depressed and non-depressed OA's memories that are important to their sense of self, and assessed the potential psychological mechanisms that could affect the recall of these memories.

1.1 The nature of self-defining and autobiographical memories

Autobiographical memories (AMs) incorporate facts and knowledge about the self and recollections of personal experiences (Williams, Conway & Cohen, 2008). It is well known that AMs and the self are intertwined psychological constructs (Singer & Salovey, 1993; Conway & Pleydell-Pearce, 2000). Self-defining memories (SDMs) are a subtype of AMs that help describe how a person has come to be the person they currently are (Singer & Moffitt, 1991-1992). SDMs have five characteristics: high affective intensity (of any emotion), vividness, high levels of rehearsal, links to other similar memories and a connection to an enduring concern or conflict (Singer & Moffitt, 1991-1992).

1.2 The functions of AM and SDMs

AMs help individuals to problem solve, regulate moods (Williams et al., 2007) and maintain social relationships (Alea & Bluck, 2003). SDMs allow individuals to pursue goals and enable reflection on the meaning of previous experiences (Singer & Blagov, 2004). In healthy populations, an individual's sense of self and their memories coalesce into a coherent story. Motivational factors, such as the psychological need to maintain a stable sense of self influence how AMs are encoded and retrieved (Conway & Pleydell-Pearce, 2000). Individuals form and modify memories to make accurate predictions about

the world (adaptive correspondence) but also filter what is encoded to maintain a stable sense of self (self-coherence) (Conway & Pleydell-Pearce, 2000).

1.3 Implications of AM/SDM disturbance

AMs and SDMs play a vital part in the development and maintenance of a range of psychological disorders. Depression can arise when individuals do not attain their desired goals, leading to rumination on memories which remind them of their failures. Depressed individuals' recall of mood congruent memories can perpetuate depressive mood states (Matt, Vazquez & Campbell, 1992). In contrast, non-depressed individuals tendency to preferentially recall positive memories is thought to counteract negative mood states (Josephson, 1996).

Through time, depression affects the organisation and retrieval of memories which leads to a less specific retrieval style that becomes habitual and generalises across situations (Williams et al., 2007). Conway and Pleydell-Pearce's Self Memory System Model (SMS, 2000) states that AMs are stored and retrieved in a hierarchy based on the specificity of the memory. It is hypothesised that individuals with depression recall more general memories as they truncate their search prior to retrieving a specific memory. Williams et al.'s (2007) review highlights eleven studies which demonstrated that adults with depression exhibit more overgeneral memories (OGMs) than matched controls. The overgeneral retrieval pattern persists when depression has been treated, suggesting that OGM is a vulnerability factor for depression (Brittlebank, Scott, Williams & Ferrier, 1993). Blagov and Singer (2004) investigated personality traits and SDMs. They found that higher scores of repressive defensiveness were significantly correlated with less specific memories. Suggesting that through a process of avoidance, individuals who have an increased tendency to repress, recall less specific details of memories, perhaps to protect the self from threatening material. This is consistent with the SMS model (Conway & Pleydell-Pearce, 2000). Individuals with depression tend to engage in cognitive avoidance in an attempt to maintain psychological wellbeing by suppressing negative material (Beevers, Wenzlaff & Hayes, 1999), therefore this avoidance affects the recall of AMs and SDMs.

In addition to personal memories being more or less specific or self-defining, they are also able to be an object of appraisal in their own right. That is, individuals can make sense of their AMs/SDMs by taking an observer (metacognitive) perspective. Metacognition refers to "the psychological structures, knowledge, events and processes that are involved in the control, modification and interpretation of thinking itself" (Wells & Cartwright-Hatton, 2004, p. 386). Research has demonstrated that metacognition plays an important role in the development and maintenance of depression (Wells & Cartwright-Hatton, 2004; Corcoran & Segal, 2008). Distress can arise when individuals are not able to adaptively make sense of their experiences and this can be a reason for seeking therapy. Therefore knowledge of the specificity of memories is important, but it also important to understand the appraisal of memories for drawing conclusions about the meaning of key experiences. For successful aging to occur, the reminiscence literature highlights the importance of OAs recalling past experiences to facilitate the maintenance of stable sense of self (Webster, Bohlmeijer & Westerhoff, 2010).

1.4 AMs and SDMs in OAs

The memory and aging literature concludes that OAs are predisposed to OGM due to the aging process (Levine, Svoboda, Hay, Moscovitch & Winocur, 2002; Piolino, 2002). Also, it is well documented that an OGM style is characteristic of depression in adults (Williams et al., 2007), however, only three studies have investigated OGM in OAs with depression (Birch & Davidson, 2007; Ricarte et al., 2011; Burns, 2014). All studies found that depressed OAs provided more OGMs than healthy aged matched controls.

Over the last decade, researchers have utilised SDMs to explore the relationship between AMs and the self. For example, Singer et al. (2007) compared OAs memories to college students in the United States in a non-clinical sample. The results showed that OAs recalled fewer specific memories (44%) than students (83%). They also found that OAs' SDMs were more positive and contained more integrative meaning (defined as "an additional statement about the specific significance or meaning of the memory to the individual", Singer & Blagov, 2002, p.15). They found that 43% of OAs derived meaning from at least 60% of their memories compared to 21% of the students. The authors hypothesised that OAs were better able to derive meaning, as they have a larger repertoire of memories and have had more time to integrate lessons from their experiences. McLean

(2008) studied narrative identity by comparing SDMs of OAs to adolescences and adults. This study found no differences in the frequencies of self-event connections (making connections between the self and experience e.g. 'I learned that') or levels of reflective processing (evidence of reflecting on experiences) between the two groups. The potential mechanisms underlying these differences were not explored, however Staudinger (2001), suggested that older and younger adults should engage in equal frequencies of reflective processing, but the reflective function would be different. In summary, to date, there is limited evidence that explores OAs' SDMs. The evidence is mixed as to whether OAs derive more meaning from their memories compared to younger populations. The AM literature concludes that OAs recall more OGMs compared to adults, and there is initial evidence of this within the SDM literature.

1.5 Gaps in the understanding of AMs and SDMs in OAs

Previous studies have investigated AMs by using the Autobiographical Memory Test (Williams & Broadbent, 1986) and other derivatives of classic word cueing paradigms. Research has begun to broaden this knowledge of AMs by investigating SDMs. Three studies (Singer et al. 2007; McLean, 2008; Martinelli, Anssens, Sperduti & Piolino, 2013) have investigated SDMs solely in OA populations, and no study has investigated SDMs in a UK, or depressed OA sample. These studies highlighted that the OGM phenomena extends to SDMs. OGM has been well researched, however there is a need to conduct studies that examine why this pattern emerges. Research on SDMs has been conducted in clinical populations such adults/older adults diagnosed with complicated grief (Maccallum & Bryant, 2008). This study found that these individuals demonstrated reduced meaning making compared to controls. No study has investigated SDMs in older adults with depression.

Engagement in psychological therapy often requires the individual to recall, reflect and make sense of important past events. This process relies heavily on AMs/SDMs. Given the negative implications of OGM (Brittlebank et al., 1993; Williams et al., 2007), and the crucial impact of SDMs on psychological wellbeing (as the way in which key events are recalled can have a dramatic impact on sense of self, and this can contribute to psychopathology), further research is warranted in this area. This study therefore extends the Singer et al.'s (2007) research to investigating SDMs in OAs with depression and

explores the cognitive mechanisms associated with OGM and people's ability to take meaning from key experiences. As individuals with depression have deficits in metacognitive ability, it is thought that depressed OAs will derive less meaning from their memories in the current study. Also, as individuals with depression attempt to avoid negative material to preserve mood (Beevers et al., 1999), cognitive avoidance was chosen as a potential mediator of OGM. Memory specificity in depressed OAs can improve with autobiographical retrieval practice as part of life review therapy (Serrano, Latorre, Gatz & Montanes, 2004), which leads to a reduction in depression symptomology. Therefore by gaining insights into the processes associated with OGM, this information could guide treatments in OAs.

1.6 Aims of the current study

To explore the nature of SDMs in a depressed and healthy OA population. OGM was explored by assessing the impact of cognitive avoidance on recall specificity, and metacognition was examined to assess the impact of recall on integrative meaning ability.

1.7 Hypotheses

1. Depressed older adults will generate less specific self-defining memories than non-depressed older adults.
2. Taking meaning from autobiographical memories, will be reduced in depressed older adults compared to non-depressed older adults.

Secondary hypotheses;

3. The interaction between depression and memory specificity will be mediated by avoidance, as measured by the White Bear Suppression Inventory.
4. The interaction between depression and integrative meaning will be mediated by metacognition, as measured by the Metacognitions Questionnaire-30.

2. METHOD

2.1 Participants

Thirty-five participants were recruited from Lanarkshire, Scotland. The depressed group (*n*=16) were recruited in the following NHS services: Psychological Therapies for Older People Team, Elderly Community Mental Health Teams and functional inpatient wards.

The control group (*n*=19) were recruited from the University of the 3rd Age groups. The researcher also displayed posters about the research in council libraries and provided an advert on the Voluntary South Lanarkshire newsletter, however no one from these latter sources took part.

2.2 Inclusion/exclusion criteria

All participants were required to be 65 years old or over and have an adequate command of the English language (i.e. did not require an interpreter). The exclusion criteria were: serious medical illness (e.g. heart attack, liver disease) or cerebrovascular events (e.g. stroke, cerebral ischemia) that have resulted in persisting cognitive problems (suspected by the person/clinician); severe head injury or cerebral infection resulting in persisting cognitive problems; learning disability or a diagnosis of dementia. These exclusions reduced the confounding effect of general cognitive problems on OGM. Additionally participants had to score ≥ 26 on the Montreal Cognitive Assessment (MoCA, Nasreddine et al., 2005). The depressed participants also had to demonstrate current depressive symptoms (as indicated by the clinicians judgement or a case note recorded diagnosis of depression) and to score ≥11 on the Geriatric Depression Scale (GDS, Yesavage et al., 1983). The control group were required to score <11 on the GDS and to not have contacted their GP regarding difficulties with depression in the last five years.

2.3 Measures

The Geriatric Depression Scale (GDS: Yesavage et al., 1983). The GDS is a 30 item self-report questionnaire measuring depressive symptoms in OAs. Brink et al. (1981) found that, if using a cut off of 11 to indicate depression, the GDS yielded a 95% specificity and 84% sensitivity. They suggest that a score of ≥11 should be used as an indicator of depression. The GDS has been found to be a valid and reliable self report measure of geriatric depression (Yesavage et al., 1983).

Montreal Cognitive Assessment (MoCA: Nasreddine et al., 2005). The MoCA is a neuropsychological screen for cognitive impairment. The test assesses the following cognitive domains: visuospatial/executive function, naming, memory, attention, language, abstraction and orientation. It provides a maximum score of 30 and a cut off of 26 provides a 90% sensitivity of detecting mild cognitive impairment and an 87% specificity. The cut

off score is adjusted for years spent in education. It has demonstrated good internal consistency (alpha= .83), test-retest reliability (correlation coefficient = .92), and sound content validity (the correlation coefficient between the MoCA and the Mini Mental State Exam (Folstein, Folstein & McHugh, 1975) was high = 0.87). The MoCA has been validated for people aged 55 to 85 years old.

White Bear Suppression Inventory (WBSI: Wegner & Zanakos, 1994). The WBSI is a 15 item questionnaire that measures thought suppression. The WBSI provides a total score of 75, with higher scores indicating a tendency to cope by avoiding unwanted mental experiences through thought suppression. The WBSI demonstrates good internal consistency (alphas range from .87 to .89), good test-retest reliability within a week (correlation coefficient =.92), and sound convergent validity with the Beck Depression Inventory (Beck, Rush, Shaw & Emery, 1979), the State-Trait Anxiety Inventory (Spielberger, 1983) and the Maudsley Obsessive-Compulsive Inventory (Hodgson & Rachman, 1977).

Metacognitions Questionnaire-30 (MCQ-30: Wells & Cartwright-Hatton, 2004). The MCQ-30 is a 30 item self-report questionnaire that measures metacognitive beliefs and beliefs about worrying. The scale assesses five factors: cognitive confidence, positive beliefs about worry, cognitive self-consciousness, negative beliefs about uncontrollability of thoughts and danger, and beliefs about the need to control thoughts. This scale has demonstrated good internal consistency (alphas ranged from .72 to .93 for total score) and convergent validity to related constructs (Padua Inventory and Penn State Worry Questionnaire).

Self-defining Memory Task (SDMT) and Self-defining Memory Rating Sheet (SDMRS: Blagov & Singer, 2002). The SDMT instructs participants to recall a SDM with the following attributes: vividness, emotionality, repetitive recall, importance and connection to other memories (Appendix 5). The SDMRS asks the participant to state the age of the memory, rate the current impact of the memory on their affect and rate how vivid and important the memory is. The scoring system for the SDMT demonstrated good inter-rater reliability (κ = .80 to .98 for scoring specificity and κ = .70 for scoring meaning).

2.4 Procedure

Clinicians told eligible depressed participants about the study. For the control group, the researcher attended University of the 3rd Age meetings. Interested participants either provided their contact details or contacted the researcher to take part. Participants had at least 24 hours to consider participation.

The testing session lasted between 45 to 120 minutes (70 minutes average). The following standardised protocol was used: The participants read the information sheet (Appendix 6) with the researcher. Next, the participant signed the consent form (Appendix 7). The participant then completed a demographic questionnaire (Appendix 8) and the screening questionnaires (MoCA and GDS). If the participant did not meet the inclusion criteria for the MoCA, they were debriefed (Appendix 9) and their clinician (referrer or G.P) was informed. A copy of the MoCA was sent to their clinician.

Those that met inclusion criteria completed the Self-defining Memory Task (SDMT) (Appendix 5). Five memories were elicited and then rated on the Self-defining Memory Rating Sheet (Appendix 10). The SDMT was audio recorded and answers were later transcribed. Participants then completed the Metacognitions Questionnaire-30 and the White Bear Suppression Inventory. Participants were debriefed and their clinician was informed (as above). Additional background information (prescribed medications, physical health conditions and diagnoses) was obtained from medical records.

2.5 Scoring of memories

A total of 175 SDMs were scored following the Singer and Blagov (2002) manual (Appendix 11). Memory specificity was reported as the primary outcome (scored as 0 for non-specific and 1 for specific). A specific memory was defined as "having a unique occurrence and has a brief duration of less than one day" (Singer & Blagov, 2002 p. 7). Meaning making, defined as "an additional statement about the specific significance or meaning of the memory to the individual" (Singer & Blagov, 2002, p. 15) was scored as 0 for non-integrative and 1 for integrative.

The participant rated how vivid and important the memories were from 'not at all' (0) to 'extremely' (6). Affect experienced when the participant recalled the memories in

the session was rated in the same way for 12 emotions (happy, sad, angry, fearful, surprised, ashamed, disgusted, guilty, interested, embarrassed, contemptful and proud). The content of the memories were classified into ten categories following Thorne and McLean's (2001) manual (Appendix 12): life threatening events (subdivided into four categories: death or serious injury/illness of someone else, serious accident/illness of self, physical assault to oneself, rape or sexual assault to self), recreation, relationship, achievement/mastery, guilt/shame, drug/alcohol and 'events not classable'. The event categories were devised from a sample of 600 SDMs narratives, 80% of which came from college students (aged 18 to 22 years) and 5% came from OAs (aged 40 to 88 years).

An independent rater blind to group status scored 25% of the memories. This achieved an overall agreement of κ=.953 for specificity, κ=.665 for meaning making, and κ=.756 for content between the two raters. Disagreements were resolved by discussion and consensus ratings were used in analyses.

2.6 Ethical approval

Approvals were obtained from the University of Glasgow, West of Scotland Research Ethics Committee, and NHS Lanarkshire Research and Development Department (Appendices 13-17).

2.7 Sample size calculation

No other study has examined depressed OAs SDMs, therefore the effect size was inferred from Singer et al.'s (2007) study. They found reduced memory specificity of OAs (*M*=2.27, *SD*=1.79) compared to college students (*M*=3.69, *SD*=1.45). A power calculation using G* Power 3 (Faul, Erdfelder, Lang & Buchner, 2007), suggested that in order to obtain adequate power given a large effect size[1], a total of 44 participants would be needed. Eighty per cent power should give a 1.4 mean difference between the groups.

2.8 Data analysis

Data were analysed with the Statistical Package for the Social Sciences (SPSS) for Windows version 19.0 (SPSS; Chicago, IL). Alpha was set at .05 to test significance (two

[1] Effect size (d) based on Cohen (1988), who defined a large effect size as d=.8 difference between the means.

tailed). To compare the differences between the groups, chi-square tests were computed for categorical data and either independent sample t tests or Mann-Whitney U tests were performed based on the distribution of the data. Mann-Whitney U tests were used to assess the main hypotheses. For the secondary analyses, correlations and multiple regression analyses were planned.

3. RESULTS

3.1 Patient flow

Twenty-two depressed patients were approached but declined. Reasons for refusal included no interest in the study (*n*=2) and concerns about involvement (*n*=14). The six remaining patients did not provide a reason. Sixteen depressed patients (including one inpatient) met the study's inclusion criteria and agreed to take part. Thirty-three participants in the control group expressed interest in the study however only 19 met the inclusion criteria. Two controls and three depressed participants were excluded as they scored below 26 on the MoCA. Another two depressed participants were excluded due to the researcher having concerns about capacity to consent.

3.2 Sample characteristics

The sample characteristics are presented in Table 1 and the test scores in Table 2. The groups did not differ for age and cognitive ability (defined by MoCA). Alcohol use patterns did not differ significantly in the number of participants that drank, frequency of drinking, number of units consumed, and type of drink. Also the participants in each group self-reported that they were prescribed the same number of medical medications although the depressed group reported significantly more physical health problems (p =.02). As a number of the files did not report medications, only self-reported medications are detailed. For all other demographics, the groups significantly differed. The case files reported that six depressed participants also had difficulties with anxiety and one had psychosis. Three controls had sought help from their G.P for difficulties with depression (≥5 years ago).

Table 1. Sample characteristics

	Statistic	**Depressed Group (*n*=16)**	**Control Group (*n*=19)**	**Groups Combined (*n*=35)**	***P***
Gender	N (%)	8 F (50)	17 F (90)	25 (71)	.022* ^
Age (years)	Median (IQR) Range	71 (6) 65-84	69 (7) 65-84	69 (7) 65-84	.915
MoCA	Mean (SD)	27.75 (1.48)	27.68 (1.34)	27.71 (1.39)	.891
Education (years)	Median (IQR)	10 (3)	14 (3)	12 (5)	.006*
Number of physical health problems	Mean (SD)	2.38 (1.31)	1.37 (1.12)	1.83 (1.30)	.020*
Number of psychiatric medications	Median (IQR)	1 (2.5)	0	-	-
Number of non-psychiatric medications	Mean (SD)	3.50 (2.01)	2.63 (2.01)	3.01 (2.01)	.217

*Note: * = indicates significance at p < 0.05; ^ = Fishers exact; IQR =Interquartile Range; SD = Standard Deviation.; MoCA = Montreal Cognitive Assessment.*

Table 2. Results for depression, metacognition and avoidance

	Statistic	**Depressed Group (*n*=16)**	**Control Group (*n*=19)**	**Groups Combined (*n*=35)**	***P***
GDS	Median (IQR)	19.5 (6)	2 (3)	7 (17)	.000*
MCQ-30 Total	Median (IQR)	75 (29.25)	46 (18)	58 (18)	.000*
MCQ- 30 POS	Median (IQR)	9 (7.5)	6 (3)	8 (7)	.015*
MCQ- 30 NEG	Median (IQR)	18 (8.75)	7 (4)	11 (12)	.000*
MCQ- 30 CC	Median (IQR)	15 (7.25)	10 (6)	11 (8)	.025*
MCQ- 30 NC	Median (IQR)	14. 5 (6.75)	7 (3)	11 (8)	.000*
MCQ- 30 CSC	Mean (SD)	17.19 (3.95)	13 (4.67)	14.91 (4.79)	.008*
WBSI	Mean (SD)	60.31 (10.08)	38.12 (12.1)	48.26 (15.76)	.000*

*Note: GDS = Geriatric Depression Scale; MCQ-30 = Metacognitions-30; MCQ-30 Total; total score; POS = positive beliefs about worry; NEG = negative beliefs about uncontrollability of thoughts and danger; CC= cognitive confidence; NC = need to control thoughts; CSC = cognitive self-consciousness; WBSI = White Bear Suppression Inventory; * = indicates significance at p < 0.05. IQR =Interquartile Range; SD = Standard Deviation.*

3.3 Primary analyses

Hypothesis 1:

Table 3 shows the results for the primary outcome data on memory specificity and the secondary outcomes of other memory characteristics between the two groups. A Mann-Whitney test revealed the depressed group recalled significantly fewer specific memories than the control group (U =87.0, z =-2.22, p =.026, r =-.38). This would indicate a medium effect size. The depressed groups' mean (M =1.06) was 1.15 below the controls' mean (M =2.21). Of the controls memories (total), 44% were specific compared to 21% of the depressed group.

Table 3. Results of Mann-Whitney by group for memory specificity, integrative meaning, importance and vividness of the memories

	Group		**Statistics**		
	Depressed (*n*=16)	**Controls (*n*=19)**			
	Md (IQR)	**Md (IQR)**	***U***	***Z***	***p* exact**
Memory Specificity	20 (20) 21%^	40 (60) 44%^	87.00	-2.22	.026* r = -.38
Integrative Meaning	0 (0) 7.5%^	20 (40) 22%^	94.00	-2.18	.030* r =-.37
Importance (0-30)	27 (9)	29 (6)	127.50	-.84	.41
Vividness (0-30)	30 (4)	29 (4)	135.50	-.58	.57

*Note: ^ = proportion of memories that were specific or demonstrated integrative meaning ability; * = indicates significance at p < 0.05.*

Hypothesis 2:

A Mann-Whitney test revealed that the depressed group demonstrated significantly less integrative meaning ability than the control group (U =94.0, z =-2.18, p =.30, r =-.30). This would indicate a medium effect size.

To ensure that gender or years of education did not confound the results, further analyses were conducted. Although the groups were not matched, a Mann Whitney test demonstrated that there were no gender differences for memory specificity (U =114.00, z = -.414, p =.679) or meaning making ability (U =82.00, z = -1.76, p =.76, between the two groups. A simple correlation showed that depression scores were significantly correlated with memory specificity (*rho* = -.367, n = 35, p = .030) and meaning making ability (*rho* = -.336, n = 35, p = .048). However, when years of education was controlled for in a partial

correlation, the relationship between depression scores and memory specificity (*rho* = -.174, *n* = 35, *p* = .326) and depression scores and meaning making ability (*rho* = -.225, *n* = 35, *p* = .201) were no longer significantly correlated.

3.4 Secondary analyses

Unfortunately due to the small sample and the distribution of the data, a number of the assumptions for the regression model were violated, therefore mediation analyses were not conducted. There was not a linear relationship for both meaning making (MM) and memory specificity (MS) with the independent variables. When assessing avoidance as a mediator of MS, the scores for the WBSI and GDS were highly correlated (*rho*=.753), which violated multicollinearity. Also scores for MM had four outliers. Transforming the data (square root and log 10) did not satisfactorily reduce the number of the assumptions that were violated. Therefore Spearman's rank order correlation analyses were conducted.

Hypothesis 3:

Avoidance, as measured on the WBSI, was significantly greater in the depressed group than the control group (*t* (33) = 5.83, *p* =.000). The magnitude of the differences (mean difference =22.2, 95% *CI:* 14.5 to 30.0) was small to moderate (eta squared =0.51). Avoidance did not significantly correlate with memory specificity (*rho*=-.291, *n*=35, *p* =.090). Two participants (one from each group) explicitly stated that they avoided disclosing a memory.

Hypothesis 4:

The MCQ-30 total score was significantly higher in the depressed group than the control group (*U* =23.000, *z* = -4.273, *p* = .000, *r* = -.72, a large effect size), however it was not significantly correlated with meaning making (*rho*=-.178, *n*=35, *p* =.306). The depressed group also scored significantly higher in the other MCQ-30 domains than the control group. Exploratory analyses of the impact of the different domains of metacognition on meaning making were not significant (Appendix 18).

Importance and vividness ratings

The depressed group did not differ from the control group in rating the importance of the memories (U =127.50, z = -.84, p =.41,or vividness of the memories (U =135.50, z =-.58, p =.57.

Content

Table 5 displays the frequencies and percentages of each content theme of the memories. Memories concerning relationships were the most prominent theme for both groups. The depressed group significantly reported more memories displaying a theme of life-time events. Whereas the controls reported significantly more memories concerning achievements and recreation. Also within the achievement and relationship theme, qualitatively the depressed group reported memories of failed achievement attempts or difficulties in relationships. (See Appendix 19 for p values).

Table 4. Content of memories

Content	**Depressed Group (*n*=16) (%)**	**Control Group (*n*=19) (%)**
LTE: Death or serious injury/illness of someone else	11 (14%)	8 (9%)
LTE: Serious accident/illness of self	9 (12%)	2 (2%)
LTE: Physical assault to oneself	2 (2.5%)	0 (0%)
LTE: Rape or sexual assault to self	1 (1%)	0 (0 %)
Total LTEs combined	23 (27.5%)	10 (11%)
Recreation	4 (5%)	20 (21%)
Relationship	26 (32.5%)	30 (31%)
Achievement/mastery	5 (6%)	26 (27%)
Guilt/shame	6 (7%)	1 (1%)
Drugs/alcohol	0 (0 %)	0 (0%)
Events not classifiable	16 (20%)	8 (9%)

Note: LTE = Life Threatening Event. Percentages/frequencies of content are based on 80 memories for the depressed group and 95 memories for the control group.

Affect reported by participants at time of recall

Table 6 demonstrates the characteristics of the memories for affect. Affect was scored for how the participant felt at the time of recalling the memory. The two groups demonstrated

no significant differences in affect for feeling; surprised, interested and proud. The depressed group however, reported significantly higher affect for feeling; sadness, fear, anger, contempful, guilty, embarrassment, ashamed and disgusted. The control group only scored higher than the depressed group for feeling happy. No differences were found in the time frame that the memories were recalled.

Table 5. Results of affect and age of memories

Affect	**Statistic**	**Depressed Group (*n*=16)**	**Control Group (*n*=19)**	***P***
Happy	Mean (SD)	13.31 (7.14)	21.79 (5.53)	.000*
Interested	Mean (SD)	13.69 (8.14)	14.05 (9.6)	.905
Proud	Mean (SD)	11.06 (8.92)	16.68 (9.71)	.086
Sad	Median (IQR)	15.5 (2)	10 (5)	.007*
Angry	Median (IQR)	10 (15.75)	3 (6)	.033*
Fearful	Median (IQR)	11.5 (15.25)	0 (6)	.001*
Surprised	Median (IQR)	5.5 (12.75)	5 (12)	.682
Ashamed	Median (IQR)	6.5 (13.25)	0 (3)	.000*
Disgusted	Median (IQR)	5 (17.5)	0 (1)	.007*
Guilty	Median (IQR)	8.5 (8.25)	0 (3)	.000*
Embarrassed	Median (IQR)	8 (12)	0 (1)	.000*
Contemptful	Median (IQR)	2 (12)	0 (0)	.010*
How many years ago the memory took place (years)	Median (IQR) (range)	37.2 (19.19) 2-76	41.4 (8.8) 1-78	.502

*Note: Affect was scored as feeling each emotion from 'not at all' (0) to' extremely' (6). The affect scores are the total (30) across the five memories. * = indicates significance at p < 0.05.*

4. DISCUSSION

This study provides the first insights into the characteristics of SDMs of OAs in the UK. Additionally this study has addressed the gap in the literature by exploring SDMs in a clinically depressed OA sample. Consistent with previous research (Williams et al., 2007;

Singer et al., 2007), it is likely that depressed OAs recalled fewer specific memories and took less meaning from their memories than OAs without depression. As the groups were matched for cognitive ability and alcohol usage, and none of the participants were prescribed benzodiazepines, this difference cannot be attributed to these factors. The control sample reported a similar number of specific memories (M = 2.21, SD= 1.58) to the Singer et al.'s (2007) OA sample (M = 2.27, SD= 1.79).

An unexpected finding was that years of education was associated with both memory specificity and meaning making, irrespective of the presence or absence of depression. As the groups were not matched for education, this between group difference cannot be ruled out as a possible explanation for the differences in the key dependent variables. However, there are reasons to think that education differences are not a parsimonious explanation for differences in AM specificity and meaning making. For example, no previous study has found that years of education explained differences in memory specificity and meaning making. In contrast, there is a strong body of evidence that depression is a reliable source of such problems (Williams et al., 2007), and so it seems more likely that depression was the main factor for the between groups effect. Other implications of this finding are discussed in the limitations section below, but first attention will be paid to the possible implications of the results for understanding depression, meaning making, and memory specificity.

Conway and Pleydell-Pearce's (2000) SMS model proposes that memories are stored and retrieved in a hierarchy and that OGM is a result of a premature termination of a search prior to accessing specific details of a memory. One possible interpretation of the current study's results is that in line with this model, it appears that OAs with depression truncated their search prior to retrieving a specific memory more so than controls to avoid the negative affect associated with the memories. The depressed group scored more highly in cognitive avoidance, however memory specificity was not significantly correlated with avoidance. From assessing the scatter plot, avoidance scores demonstrated a slight positive relationship with memory specificity, and therefore it is possible that a larger sample may have demonstrated a clearer effect. Also, two participants (one from each group) stated that they avoided disclosing a memory. Potentially, the participants wanted to avoid the distress

associated with recall. Exploring SDMs in this context highlights the difficulties with personal disclosure and reporting socially desirable answers.

Depressed OAs were also less able to derive meaning from their memories compared to non-depressed OAs. Erikson's (1950) theory of psychosocial development proposes that individuals go through a number of 'psychosocial crises' throughout the lifespan. It is hypothesised that people aged over 65, reflect on their lives and develop 'ego integrity' if they feel satisfied with their accomplishments. In comparison, 'despair' can occur if individuals conclude that they have not achieved their goals. In line with this theory, the current sample should be reflecting on their lives, however the responses of the depressed participants in this study suggest a lack of meaning making of life experiences and self-understanding. The results from this study suggest that it is not just the over-recall of negative events that can be a problem in depression, but also that the self defining events that are recalled, are not made sense of in an integrated way.

The depressed group scored more highly across the domains of metacognition assessed by the MCQ-30 than the controls, however none of these domains were significantly correlated with integrative meaning. This measure however, does not adequately measure self-reflection. The ability to reflect on key experiences may be helpful (i.e. it helps one synthesise a range of experiences into a coherent self-narrative) or it can be painful (i.e. when thinking about the self triggers regret, self-criticism etc). The sample size of the present study prevented a full exploration of the mediators of impaired meaning making in depressed individuals. It can, however be hypothesised that avoidance of thinking about key life events contributes to the cause or maintenance of depressed mood, because the person is unable to learn integrated lessons as a result of life experience. Or perhaps, deficits in self-reflection prevent depressed OAs learning from experiences. In the current study, the controls derived less meaning from their memories than the controls in Singer et al.'s (2007) sample. This might be due to cultural differences or a consequence of discussing these memories rather than the participant writing them down by themselves at home, which is less intimate. Also participants may have produced memories that were socially desirable which has implications for the validity and reliability of the memories.

In accordance with the mood congruent recall theory (Bower, 1981), depressed participants in the current study recalled more memories associated with negative affect.

As the memories were more negative, this also fits with Williams's (2006) Capture and rumination (CaR), functional avoidance (FA) and executive control dysfunction (X) model (CaR-FA-X), which highlights that OGM occurs as a result of difficulties with three cognitive mechanisms. As the depressed group scored more highly in emotions indicative of negative affect and in avoidance, this would support the FA pathway in this model. Furthermore, in line with Conway and Pleydell-Pearce's (2000) SMS model, through adaptive correspondence and self-coherence depressed individuals recalled more memories evoking negative affect that corresponds to the reality of their situation.

4.1 Limitations

A limitation of the current study is that the sample size precluded exploration of key mechanistic questions. Recruitment to the study was reduced due to smaller rates of referrals from ECMHTs than expected, and a significant amount of identified patients (22/38) declined to take part. Therefore, some caution needs to be applied when generalising the findings to all OAs with depression, however there are signs that the findings were reasonably representative.

Another limitation of the study is that the groups were not matched for gender or years of education, which might have influenced differences in memory specificity or meaning making ability between the two groups. Full interpretation of the possible impact of these limitations is restricted at present due to a lack of prior studies examining gender differences in memory specificity (Raymond, 2009). Raymond (2009) however, reported an impact of gender on content and meaning making ability, with females being more reflective in both OAs (McLean, 2008) and student/adult samples (Wood & Conway, 2006). Although the groups were not matched for gender, there were no differences between men or women for memory specificity and meaning making ability. However, years of education did modify the significance of the correlation between depression, memory specificity, and meaning making ability in the current sample. Future studies with better matched groups and larger samples could clarify this relationship. Multiple regression analyses may be warranted to explore any multivariate effects. Participants did demonstrate some self-reflections (e.g. "I've never liked speaking in front of others"), however, they did not tie these statements to the memories, and therefore they lacked

integrative meaning. This is a criticism of using the scoring manual to understand such complex processes.

4.2 Clinical implications, future directions and conclusions

This study provides valuable insights into the characteristics of OAs and depressed OAs' SDMs. Disclosing SDMs are central to a variety of psychological therapies (e.g. cognitive behavioural therapy; narrative therapy; reminiscence therapy). Clinical psychologists work collaboratively with patients to develop psychological formulations which enhance a person's understanding of their current difficulties. This requires a process of reflecting on and taking meaning from SDMs/AMs. This study highlights that this meaning making ability is probably impaired in depressed OAs. If depressed OAs continue to view themselves in relation to these negative SDMs, recall memories in an over general way and do not integrate these memories in a way that reflects greater self-understanding and awareness, these factors may perpetuate low mood. Future research in depressed samples may want to assess whether a verbal prompt can improve meaning making ability or to record the memories that showed some reflective capacity as opposed to none. Also the MCQ-30 may not have assessed all of the relevant metacognitive constructs involved in reflective functioning and meaning making. The MCQ-30 reflects how more general problems in metacognition are linked to mood disturbance. Other measures such as the Metacognitive Assessment Scale (Semerari et al., 2003), may be more suitable for capturing reflective functioning ability. This psychological construct may be more beneficial for understanding meaning making ability. This measure allows exploration of understanding one's own mind, understanding others' minds, having mastery over analysing mental states and using effective problem solving strategies in response. Future research may want to use different methodological and conceptual frameworks to explore the impact of metacognition.

This study also demonstrated that memory specificity in depressed OAs is significantly reduced compared to controls. Overgeneral AMs are known to negatively affect problem solving ability (Williams et al., 2007) and the ability to recover from depression (Brittlebank et al., 1993). Research has shown that AM specificity can improve with autobiographical retrieval practice (Serrano et al., 2004), which leads to a reduction in

depression. Therefore more research assessing interventions that target OGM in OAs needs to be conducted.

The results from this study suggest that it would be worthwhile to conduct this research with larger samples, which would allow testing of mediators that underlie OGM and meaning making ability. Also it would be useful to record the number of SDMs avoided to assess the extent to which individuals engage in avoidance. Future studies may benefit from giving participants the definition of a SDM prior to the study commencing. One participant stated that she might have provided different memories on another day and a number of participants stated they had numerous memories that fitted the criteria. More time to choose SDMs, might have allowed a more reliable/valid representation of the most prominent SDMs. For example, Berna et al. (2011) gathered SDMs a week after participants were given the definition. Future research may also benefit from exploring the impact of factors such as length of illness, type of input (therapy, medication), professional providing input (nurses, clinical psychologists or psychiatrists) and frequency of input on the dependent variables. Potentially, individuals who see clinicians for talking therapies rather than medical interventions and who have engaged in therapy for longer, would recall more specific memories and take more meaning from their memories. It could be hypothesised that engaging in a longer duration of therapy would increase the patients' understanding of their difficulties and through a process of discussing their difficulties, could subsequently increase memory specificity by inhibiting avoidance.

A key finding is that depressed OAs recalled less specific memories and took less meaning from their memories. Contrary to expectation, cognitive avoidance and metacognition were not associated with either of these features of the depressed patients' thinking. Also, the differences in years of education between the groups mean that the differences in memory specificity and meaning making may be due to uncontrolled factors. To conclude, larger sample sizes and matched groups are required to conduct mediation analyses on factors influencing OGM and meaning making ability in SDMs.

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CHAPTER THREE
ADVANCED CLINICAL PRACTICE 1
REFLECTIVE CRITICAL ACCOUNT (Abstract Only)

Formulation: The Journey of Becoming More Flexible

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Full text in Volume II (bound separately)

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Submitted in partial fulfilment of the requirement for the degree of Doctorate in Clinical Psychology (DClinPsy)

ABSTRACT

***Introduction*:** This reflective account explores the development of my formulation skills within my role as a clinical psychologist. Formulation is a core competency of clinical psychologists. It is a key feature of the work psychologists provide not only to individuals, but also to teams and the wider social/societal context. This has been reinforced within a number of documents from The British Psychological Society, Division of Clinical Psychology and Health Care Professions Council. The British Psychological Society, Division of Clinical Psychology (2011) published 'Good Practice Guidelines on the Use of Psychological Formulation' which characterises formulation as "both an event and a process, which summarises and integrates a broad range of biopsychosocial causal factors" (pp. 2).

***Reflection*:** I have used Gibb's Reflective Cycle (1988) to provide individual examples of the development of my formulation skills, and the Integrated Developmental Model of Supervision (IDM, Stoltenberg, McNeill & Delworth, 1998) to demonstrate my development of these skills across the three years of training.

Reflective Review: This process has allowed me to reflect on the development of my formulation skills throughout the training. It has also provided insight into the skills that I will need to possess when I offer supervision to applied psychology staff and other multidisciplinary staff at different levels of their training. Furthermore I have reflected on future goals to guide professional development.

CHAPTER FOUR
ADVANCED CLINICAL PRACTICE 2
REFLECTIVE CRITICAL ACCOUNT (Abstract Only)

Consultation: An Eye Opening Experience

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Full text in Volume II (bound separately)

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ABSTRACT

***Introduction*:** Consultation is a key role of the clinical psychologist and is one of six National Occupational Standards highlighted by the British Psychological Society (BPS, 2002). Clinical psychologists are increasingly required to disseminate psychological knowledge and principles to staff within a stepped care approach.

***Reflection*:** I have utilised Boud, Keogh and Walker's (1985) reflective model to guide my reflections on providing consultation to an inpatient ward.

Reflective Review: This process has allowed me to reflect on the impact of service provision on consultancy. Also this process has highlighted a number of factors which can negatively impact on consultancy.

APPENDICES

Appendix 1

Memory

Instructions for authors

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Manuscript preparation

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All submissions should be made online at the *Memory* Scholar One Manuscripts website. New users should first create an account. Once logged on to the site, submissions should be made via the Author Centre. Online user guides and access to a helpdesk are available on this website.

Manuscripts may be submitted in any standard editable format, including Word and EndNote. These files will be automatically converted into a PDF file for the review process. LaTeX files should be converted to PDF prior to submission because ScholarOne Manuscripts is not able to convert LaTeX files into PDFs directly. All LaTeX source files should be uploaded alongside the PDF.

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Appendix 2

Data Extraction Form

General Information			
Researcher performing data extraction /Date			
Authors			
Year			
Article title			
Country of origin			
Study characteristics			
Aim/objectives of the study			
Study design			
Participant inclusion criteria			
Participant exclusion criteria			
Recruitment procedures used (e.g. details of randomisation, blinding)			
Power Calculation	Yes/No		
Participant characteristics			
	Treatment group (mean and SD)	Control (mean and SD)	Comparison treatment (mean and SD)
Number			
Age			
Gender			
Status			
Ethnicity			
Diagnosis			
Depression score			
Co morbidities			
Were groups matched?	Yes/No		
Intervention and setting			
Setting in which the intervention is delivered			

	Treatment group	Control	Comparison treatment
Details of Intervention			
Outcome data/results			
MAIN OUTCOME Outcome on depression symptoms			
Statistical techniques used			
Length of follow-up, number and/or times of follow-up measurements			
Depression measure			
Number of participants enrolled			
Number of participants included in analysis			
Number of withdrawals, exclusions, lost to follow-up			
Type of analysis used in study	intention to treat per protocol		
Effect size	Given?		Or calculate?
Secondary Outcomes			
Memory specificity measured	Yes/No		
Outcome on memory specificity			
Measure of memory specificity			
Content			
Content of material. Number of memories/scenarios	Autobiographical Memories Hypothetical Scenarios		
Outcome of cognitive mechanisms evaluated			
Rumination Hopelessness Avoidance Problem solving			

Conclusions			
Limitations reported			
Adverse effects reported			
Conclusion			

Appendix 3

Reviewer

Crowe Critical Appraisal Tool (CCAT) Form (v1.4)

Reference

This form must be used in conjunction with the CCAT User Guide (v1.4); otherwise validity and reliability may be severely compromised.

Citation	
	Year

Research design (add if not listed)	
❑ Not research	Article | Editorial | Report | Opinion | Guideline | Pamphlet | …
❑ Historical	…
❑ Qualitative	Narrative | Phenomenology | Ethnography | Grounded theory | Narrative case study | …
❑ Descriptive, Exploratory, Observational	A. Cross-sectional | Longitudinal | Retrospective | Prospective | Correlational | Predictive | … B. Cohort | Case-control | Survey | Developmental | Normative | Case study | …
Experimental	❑ True Pre-test/post-test control group | Solomon four-group | Post-test only control group | Randomised two-factor | experiment Placebo controlled trial | … ❑ Quasi- Post-test only | Non-equivalent control group | Counter balanced *(cross-over)* | Multiple time series | experiment Separate sample pre-test post-test [no Control] [Control] | … ❑ Single One-shot experimental *(case study)* | Simple time series | One group pre-test/post-test | Interactive | Multiple baseline | system Within subjects *(Equivalent time, repeated measures, multiple treatment)* | …
❑ Mixed Methods	Action research | Sequential | Concurrent | Transformative | …
❑ Synthesis	Systematic review | Critical review | Thematic synthesis | Meta-ethnography | Narrative synthesis | …
❑ Other	…

Variables and analysis		
Intervention(s), Treatment(s), Exposure(s)	Outcome(s), Output(s), Predictor(s), Measure(s)	Data analysis method(s)

Sampling					
	Group 1	Group 2	Group 3	Group 4	Control
Total size					
Population, sample, setting					

Data collection (add if not listed)	
Audit/Review a) Primary | Secondary | … b) Authoritative | Partisan | Antagonist | … c) Literature | Systematic | …	Interview a) Formal | Informal | … b) Structured | Semi-structured | Unstructured | … c) One-on-one | Group | Multiple | Self-administered | …

Observation a) Participant | Non-participant | … b) Structured | Semi-structured | Unstructured | … c) Covert | Candid | …	Testing a) Standardised | Norm-ref | Criterion-ref | Ipsative | … b) Objective | Subjective | … c) One-on-one | Group | Self-administered | …

Scores									
Preliminaries		Design		Data Collection		Results		Total [/40]	
Introduction		Sampling		Ethical Matters		Discussion		Total [%]	

General notes

Category Item	Item descriptors [✎ Present; ✂ Absent; ■ Not applicable]	Description [Important information for each item]	Score [0–5]
1. Preliminaries			
Title	1. Includes study aims ❑ and design ❑		
Abstract (assess last)	1. Key information ❑ 2. Balanced ❑ and informative ❑		
Text (assess last)	1. Sufficient detail others could reproduce ❑ 2. Clear/concise writing ❑, table(s) ❑, diagram(s) ❑, figure(s) ❑		
		Preliminaries [/5]	
2. Introduction			
Background	1. Summary of current knowledge ❑ 2. Specific problem(s) addressed ❑ and reason(s) for addressing ❑		
Objective	1. Primary objective(s), hypothesis(es), or aim(s) ❑ 2. Secondary question(s) ❑		
	Is it worth continuing?	**Introduction [/5]**	
3. Design			
Research design	1. Research design(s) chosen ❑ and why ❑ 2. Suitability of research design(s) ❑		
Intervention, Treatment, Exposure	1. Intervention(s)/treatment(s)/exposure(s) chosen ❑ and why ❑ 2. Precise details of the intervention(s)/treatment(s)/exposure(s) ❑ for each group ❑ 3. Intervention(s)/treatment(s)/exposure(s) valid ❑ and reliable ❑		
Outcome, Output, Predictor, Measure	1. Outcome(s)/output(s)/predictor(s)/measure(s) chosen ❑ and why ❑ 2. Clearly define outcome(s)/output(s)/predictor(s)/measure(s) ❑ 3. Outcome(s)/output(s)/predictor(s)/measure(s) valid ❑ and reliable ❑		
Bias, etc	1. Potential bias ❑, confounding variables ❑, effect modifiers ❑, interactions ❑ 2. Sequence generation ❑, group allocation ❑, group balance ❑, and by whom ❑ 3. Equivalent treatment of participants/cases/groups ❑		
	Is it worth continuing?	**Design [/5]**	
4. Sampling			
Sampling method	1. Sampling method(s) chosen ❑ and why ❑ 2. Suitability of sampling method ❑		
Sample size	1. Sample size ❑, how chosen ❑, and why ❑ 2. Suitability of sample size ❑		
Sampling protocol	1. Target/actual/sample population(s): description ❑ and suitability ❑ 2. Participants/cases/groups: inclusion ❑ and exclusion ❑ criteria 3. Recruitment of participants/cases/groups ❑		
	Is it worth continuing?	**Sampling [/5]**	
5. Data collection			
Collection method	1. Collection method(s) chosen ❑ and why ❑ 2. Suitability of collection method(s) ❑		
Collection protocol	1. Include date(s) ❑, location(s) ❑, setting(s) ❑, personnel ❑, materials ❑, processes ❑ 2. Method(s) to ensure/enhance quality of measurement/instrumentation ❑ 3. Manage non-participation ❑, withdrawal ❑, incomplete/lost data ❑		
	Is it worth continuing?	**Data collection [/5]**	
6. Ethical matters			
Participant ethics	1. Informed consent ❑, equity ❑ 2. Privacy ❑, confidentiality/anonymity ❑		

Researcher ethics	1. Ethical approval ❑, funding ❑, conflict(s) of interest ❑ 2. Subjectivities ❑, relationship(s) with participants/cases ❑	
	Is it worth continuing?	**Ethical matters [/5]**
7. Results		
Analysis, Integration, Interpretation method	1. A.I.I. method(s) for primary outcome(s)/output(s)/predictor(s) chosen ❑ and why ❑ 2. Additional A.I.I. methods (e.g. subgroup analysis) chosen ❑ and why ❑ 3. Suitability of analysis/integration/interpretation method(s) ❑	
Essential analysis	1. Flow of participants/cases/groups through each stage of research ❑ 2. Demographic and other characteristics of participants/cases/groups ❑ 3. Analyse raw data ❑, response rate ❑, non-participation/withdrawal/incomplete/lost data ❑	
Outcome, Output, Predictor analysis	1. Summary of results ❑ and precision ❑ for each outcome/output/predictor/measure 2. Consideration of benefits/harms ❑, unexpected results ❑, problems/failures ❑ 3. Description of outlying data (e.g. diverse cases, adverse effects, minor themes) ❑	
		Results [/5]
8. Discussion		
Interpretation	1. Interpretation of results in the context of current evidence ❑ and objectives ❑ 2. Draw inferences consistent with the strength of the data ❑ 3. Consideration of alternative explanations for observed results ❑ 4. Account for bias ❑, confounding/effect modifiers/interactions/imprecision ❑	
Generalisation	1. Consideration of overall practical usefulness of the study ❑ 2. Description of generalisability (external validity) of the study ❑	
Concluding remarks	1. Highlight study's particular strengths ❑ 2. Suggest steps that may improve future results (e.g. limitations) ❑ 3. Suggest further studies ❑	
		Discussion [/5]
9. Total		
Total score	1. Add all scores for categories 1–8	
		Total [/40]

Crowe Critical Appraisal Tool (CCAT):: Version 1.4 (19 November 2013) :: Michael Crowe (michael.crowe@my.jcu.edu.au)

Appendix 4

Data extraction list with references

Category	Sub Category	Count (/8)	References
Type of training	MEST	1	Neshat-Doost et al., (2013)
	CNT	5	Watkins & Moberly (2009); Watkins et al., (2009); Watkins et al., (2012); Galfin et al., (2012); Mogoase et al., (2013)
	Processing mode	2	Hetherington & Moulds (2013); Moberly & Watkins (2006)
Format of sessions	Group format	2	Moberly & Watkins (2006); Neshat-Doost et al., (2013);
	One to one session	4	Galfin, et al., (2012); Watkins & Moberly (2009); Watkins et al., (2012); Watkins, et al., (2009)
	Individual or group	1	Hetherington & Moulds (2013)
	Online	1	Mogoase et al., (2013)
Duration of intervention	Single session only	2	Hetherington & Moulds (2013); Moberly & Watkins (2006)
	Single session and seven days homework practice	3	Mogoase et al., (2013); Watkins & Moberly (2009); Watkins et al., (2009)
	Single session and four week homework practice	1	Galfin et al., (2012)
	Five weekly group sessions and homework practice	1	Neshat-Doost et al., (2013)
	Single session and six weeks homework practice	1	Watkins et al., (2012)
Telephone contact	Telephone contact	3	Galfin et al., (2012); Watkins et al., (2012); Watkins & Moberly (2009)
	No telephone contact	5	Mogoase et al., (2013); Neshat-Doost et al., (2013); Watkins et al., (2009); Hetherington & Moulds (2013); Moberly & Watkins (2006)
Components	Mental Imagery	5	Watkins et al., (2009); Watkins & Moberly (2009); Mogoase et al., (2013);

			Galfin et al., (2012); Watkins et al., (2012)
	Relaxation	2	Watkins et al., (2009); Watkins & Moberly (2009)
	Problem Solving	2	Watkins et al., (2012); Watkins et al., (2009)
Sample characteristics	Clinical sample with depression	1	Watkins et al., (2012)
	Stable dysphoria	3	Mogoase et al., (2013); Watkins & Moberly, (2009); Watkins et al., (2009)
	Above cut off for depression symptoms	5	Galfin et al., (2012); Neshat-Doost et al., (2013); Watkins & Moberly, (2009); Watkins et al., (2009)
Status	Students (included adolescents)	6	Mogoase et al., (2013)
	Community members	3	Watkins et al., (2009;, Watkins & Moberly, (2009); Hetherington & Moulds (2013)
Age	Adolescents	1	Neshat-Doost et al., (2013)
	Adults	7	Galfin et al., (2012), Hetherington & Moulds (2013); Mogoase et al., (2013); Moberly & Watkins (2006); Watkins & Moberly, (2009); Watkins et al., (2012); Watkins et al., (2009)
	Mixed adults and older adults	1	Galfin et al., (2012)
Content of intervention (i.e. what the intervention focused on increasing the specificity of)	Solely hypothetical scenarios	3	Mogoase et al., (2013); Hetherington & Moulds (2013); Moberly & Watkins (2006)
	Solely autobiographical memories	3	Galfin et al., (2012); Neshat-Doost et al., (2013); Watkins et al., (2012)
	Hypothetical scenarios and autobiographical memories	2	Watkins & Moberly (2009); Watkins et al., (2009)
Cognitive mechanisms explored	Memory specificity	2	Neshat-Doost et al., (2013) & Mogoase et al., (2013)
	Concreteness of thinking	5	Watkins et al., (2009); Watkins et al., (2012), Moberly & Watkins (2006); Hetherington & Moulds (2013); Mogoase et al., (2013)
	Rumination	6	Mogoase et al.,(2013); Hetherington & Moulds (2013); Moberly & Watkins (2006); Watkins & Moberly (2009); Watkins et al., (2012); Watkins, et al. (2009)
	Self focus	2	Moberly & Watkins (2006); Hetherington & Moulds (2013)

	Self downing	1	Mogoase et al., (2013)
	Overgeneralisation	2	Watkins et al. (2009); Watkins et al., (2012)
	High standards	1	Watkins et al. (2009)
	Self criticism	1	Watkins et al. (2009)
Impact on depressive symptoms	Improvement post training	3	Watkins & Moberly (2009), Watkins et al., (2012); Watkins et al., (2009)
	No improvement post training	5	Galfin et al., (2012); Mogoase, et al., (2013), Hetherington & Moulds (2013); Moberly & Watkins (2006); Neshat-Doost et al., (2013)
	Improvement at follow up	2/3	Neshat-Doost et al., (2013); Watkins et al., (2012)

Appendix 5

Self-Defining Memory Task

This part of the research concerns the recall of a special kind of personal memory called a self-defining memory. A self-defining memory has the following attributes:

1. It is at least one year old.

2. It is a memory from your life that you remembered very clearly and that still feels important to you even as you think about it.

3. It is a memory about an important enduring theme, issue, or conflict from your life. It is a memory that helps explain who you are as an individual and might be the memory you would tell someone else if you wanted that person to understand you in a profound way.

4. It is a memory linked to other similar memories that share the same theme or concern.

5. It may be a memory that is positive or negative, or both, in how it makes you feel. The only important aspect is that it leads to strong feelings.

6. It is a memory that you have thought about many times. It should be familiar to you like a picture you have studied or a song (happy or sad) you have learned by heart.

To understand best what a self-defining memory is, imagine you have just met someone you like very much and are going for a walk together. Each of you is very committed to helping the other get to know the "Real You". You are not trying to play a role or to strike a pose. While, inevitably, we say things that present a picture of ourselves that might not be completely accurate, imagine that you are making every effort to be honest. In the course of the conversation, you describe a memory that you feel conveys powerfully how you have come to be the person you currently are. It is precisely this memory, which you tell the other person and simultaneously repeat to yourself, that constitutes a self-defining memory.

Appendix 6

Miss Louise Sweeney

Trainee Clinical Psychologist
Psychological Therapies for Older People Team
59 Airbles Road, Motherwell
Lanarkshire, ML1 2TP
Tel: 01698 210021
Email: louise.sweeney@nhs.net

Information Sheet Group 1 (V 1.2, 23/10/14)

My name is Louise Sweeney and I am a final year Trainee Clinical Psychologist at the University of Glasgow. I would like to invite you to take part in a voluntary research study. This sheet provides you with information to help you decide if you would like to be involved in the study. Please take the time to read this information carefully. If there is anything that is unclear or if you would like to ask questions, please feel free to contact me using the details at the end of this document.

What is the purpose of the study?

We are trying to better understand the types of memories that people with depression recall from their past and how these memories affect their sense of who they are as a person. We are also examining how people think about their thinking (for example, how aware they are of their own thoughts) and how people adjust their thinking to cope with low mood.

Why have I been asked about this?

You have been invited to participate because you are someone with a diagnosis of depression. We are also recruiting people without a diagnosis of depression who will act as a comparison group.

Do I have to be involved in the research study?

No, participation in this study is entirely voluntary. It is up to you to decide whether you want to take part. If you decide not to participate this will not affect your care and treatment in any way. Also, if you decide to take part and then change your mind, you can withdraw at any point without giving a reason. If you do decide to take part you will be asked to sign a 'consent form'

to show that you understand what is involved and that you freely chose to take part.

What is involved?

If you would like to find out more about the study or take part, you can contact me directly by phone (01698 210021). Alternatively, I can contact you if you tell your clinician that they can pass on your contact details to me.

If you want to take part, the next step involves meeting me at your usual NHS clinic. You will be asked to sign a consent form and fill in a short demographic information sheet. During the assessment you will be asked to complete three questionnaires, one about your mood, one about avoidance of thinking about your thoughts and one about how aware you are of your thoughts. This would take 15 minutes. Because neurological conditions such as stroke, head injury, epilepsy or dementia can affect memory, anyone with these conditions cannot take part in this study. To check for the presence of cognitive problems (abilities such as memory and concentration), you will also be asked to complete a screening test that assesses cognitive function, this would take ten minutes. If the results were suggestive of potential cognitive problems (e.g. memory problems) you would cease involvement in the study and I would notify the mental health professional who referred you so that the memory problems could be examined further.

If there are no signs of cognitive impairment, you will be asked to describe five memories of events that are important to defining who you are as a person. People who have completed this task previously have taken between 20-60 minutes to do this. Your responses will be audio recorded so that I can transcribe them accurately after the session. The transcripts will be anonymous and the original recordings will be deleted. The meeting is expected to last between 60 and 100 minutes in total. We can adjust the timing if you need to have a rest break along the way. Lastly the researcher will gather information about your currently prescribed medication, physical health and diagnoses from your medical records.

What about confidentiality?

Your personal information will be kept completely confidential and your data will be identified by an anonymous code known only to the researcher. All study data will be transferred and stored securely and held in accordance with the Data Protection Act (1998) and NHS Lanarkshire polices which are

designed to ensure that your information is kept safe and secure. Your right to confidentiality will only be set aside if there is evidence that you or someone else is at clear risk of harm. If this is the case, another professional may be contacted to ensure safety. If there is any need to breach confidentiality, every effort would be made to discuss this with you beforehand.

Who will know I am taking part?

I will inform the person who told you about the study that you are taking part and provide them with a copy of your consent form for your file. I will also give them a copy of the cognitive screening measure that we are using in this study. This will be useful as a point of comparison if you develop problems with your memory or concentration in the future. No other information will be shared with the clinical team providing your care.

What happens to the results?

I can provide you with a summary of the results of the study if you wish to see this information. This research will form part of my doctoral thesis for my training as a Clinical Psychologist and it is hoped that the results will be published in a scientific journal. Only group data will be presented in any outputs arising from this research and your personal information will remain anonymous.

What are the possible benefits of taking part?

Taking part in this study may not directly benefit you but we expect that the results will help to improve the understanding and treatment of depression in older adults. This is an under-researched area and no other study has collected the data that we intend to obtain. It is anticipated that finding out more about the characteristics of memories recalled during depression and the processes which affect memory recall will help to guide the development of more efficient and effective psychological therapies.

Are there any risks to myself in taking part?

The risks of participating are minimal and the procedures usually lead to no adverse outcomes. There is a chance that you might recall upsetting memories but there is no need to share these with the researcher if you do not want to. If you become distressed, you will be given emotional support and advice to help you to cope. It is also possible that your score on the cognitive screening test might identify previously unrecognised problems with your memory or concentration. This could be distressing news but we would

help you to access services that could clarify the nature of any problems and provide help.

Who has reviewed the study?

All research conducted in the NHS is reviewed by an independent Research Ethics Committee to protect your safety, rights, wellbeing and dignity. The University of Glasgow, NHS Lanarkshire Research and Development Department, and a NHS Research Ethics Committee have all reviewed this study to ensure that it meets the expected standards of safety and ethical practice.

Can I talk to someone about this research who is not directly involved in it?

Yes, if you would like to contact someone, who is not directly involved in the study for general advice about taking part in research you can speak to Professor Tom McMillan. His contact details are at the end of this document.

What do I do if there is a problem?

If you are unhappy with any aspect of the study then please let me know and I will do my best to address your concerns. If you remain unsatisfied with this response and would like to complain formally, you can access the NHS Complaints Procedure by contacting the helpline on 0800 22 44 88.

Do you have any further questions?

If you would like further information about this research project, you can ask me or one of my supervisors: Dr Lisa Gadon or Dr Hamish McLeod (contact details are listed below). You can keep this information sheet and if you agree to take part you will be given a copy of the signed consent form.
Thank you very much for taking the time to read this.

Louise Sweeney,
Trainee Clinical Psychologist

Contacts:

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Information Sheet Group 2 (v 1.2, 23/10/14)

My name is Louise Sweeney and I am a final year Trainee Clinical Psychologist at the University of Glasgow. I would like to invite you to take part in a voluntary research study. This sheet provides you with information to help you decide if you would like to be involved in the study. Please take the time to read this information carefully. If there is anything that is unclear or if you would like to ask questions, please feel free to contact me using the details at the end of this document.

What is the purpose of the study?

We are trying to better understand the types of memories that people with depression recall from their past and how these memories affect their sense of who they are as a person. We are also examining how people think about their thinking (for example, how aware they are of their own thoughts) and how people adjust their thinking to cope with low mood.

Why have I been asked about this?

We are interested in finding out more about how depression in older adults affects the way they recall their memories and also to explore the characteristics of non-depressed older adult's memories in the UK. As someone without a diagnosis of depression, it would be useful for us to find out more about how you recall your memories. It will be useful to compare the memories of depressed and non-depressed older adult's to see how they differ and also to investigate what processes affects the recall of these memories.

Do I have to be involved in the research study?

No, participation in this study is entirely voluntary. It is up to you to decide whether you want to take part. Also, if you decide to take part and then change your mind, you can withdraw at any point without giving a reason. If

you do decide to take part you will be asked to sign a 'consent form' to show that you understand what is involved and that you freely chose to take part.

What is involved?

If you would like to find out more about the study or take part, you can contact me directly by phone (01698 210021). If you want to take part, the next step involves you attending one meeting at a community venue near to where you live (NHS building or library). The study would take part in a private room.

You will be asked to sign a consent form and fill in a short demographic information sheet. During the assessment you will be asked to complete three questionnaires, one about your mood, one about avoidance of thinking about your thoughts and one about how aware you are of your thoughts. This would take 15 minutes. Because neurological conditions such as stroke, head injury, epilepsy or dementia can affect memory, anyone with these conditions cannot take part in this study. To check for the presence of cognitive problems (abilities such as memory and concentration), you will also be asked to complete a screening test that assesses cognitive function, this would take ten minutes. If the results were suggestive of potential cognitive problems (e.g. memory problems) or mood difficulties you would cease involvement in the study and I would need to notify your G.P so that the problems could be examined further.

If there are no signs of cognitive impairment or difficulties with your mood, you will be asked to describe five memories of events that are important to defining who you are as a person. People who have completed this task previously have taken between 20-60 minutes to do this. Your responses will be audio recorded so that I can transcribe them accurately after the session. The transcripts will be anonymous and the original recordings will be deleted. The meeting is expected to last between 60 and 100 minutes in total. We can adjust the timing if you need to have a rest break along the way.

What about confidentiality?

Your personal information will be kept completely confidential and your data will be identified by an anonymous code known only to the researcher. All study data will be transferred and stored securely and held in accordance with the Data Protection Act (1998) and NHS Lanarkshire polices which are designed to ensure that your information is kept safe and secure. Your right to confidentiality will only be set aside if there is evidence that you or

someone else is at clear risk of harm. If this is the case, another professional may be contacted to ensure safety. If there is any need to breach confidentiality, every effort would be made to discuss this with you beforehand.

Who will know I am taking part?

No one will know that you have taken part unless the researcher was concerned about your scores on the mood measure or cognitive screen. If this was the case, the researcher would have to notify your G.P so these difficulties could be monitored.

What happens to the results?

I can provide you with a summary of the results of the study if you wish to see this information. This research will form part of my doctoral thesis for my training as a Clinical Psychologist and it is hoped that the results will be published in a scientific journal. Only group data will be presented in any outputs arising from this research and your personal information will remain anonymous.

What are the possible benefits of taking part?

Taking part in this study may not directly benefit you but we expect that the results will help to improve the understanding and treatment of depression in older adults. To help with this, we need to understand the differences between depressed older adult's memories and non-depressed older adults. This is an under-researched area and no other study has collected the data that we intend to obtain. It is anticipated that finding out more about the characteristics of memories recalled during depression and the processes which affect memory recall will help to guide the development of more efficient and effective psychological therapies.

Are there any risks to myself in taking part?

The risks of participating are minimal and the procedures usually lead to no adverse outcomes. There is a chance that you might recall upsetting memories but there is no need to share these with the researcher if you do not want to. If you become distressed, you will be given emotional support and advice to help you to cope. It is also possible that your score on the cognitive screening test might identify previously unrecognised problems with your memory or concentration. This could be distressing news but we would help you to access services that could clarify the nature of any problems and provide help.

Who has reviewed the study?

All research conducted in the NHS is reviewed by an independent Research Ethics Committee to protect your safety, rights, wellbeing and dignity. The University of Glasgow, NHS Lanarkshire Research and Development Department, and a NHS Research Ethics Committee have all reviewed this study to ensure that it meets the expected standards of safety and ethical practice.

Can I talk to someone about this research who is not directly involved in it?

Yes, if you would like to contact someone, who is not directly involved in the study for general advice about taking part in research you can speak to Professor Tom McMillan. His contact details are at the end of this document.

What do I do if there is a problem?

If you are unhappy with any aspect of the study then please let me know and I will do my best to address your concerns. If you remain unsatisfied with this response and would like to complain formally, you can access the NHS Complaints Procedure by contacting the helpline on 0800 22 44 88.

Do you have any further questions?

If you would like further information about this research project, you can ask me or one of my supervisors: Dr Lisa Gadon or Dr Hamish McLeod (contact details are listed below). You can keep this information sheet and if you agree to take part you will be given a copy of the signed consent form.
Thank you very much for taking the time to read this.

Louise Sweeney,
Trainee Clinical Psychologist

Contacts:

Miss Louise Sweeney
Trainee Clinical Psychologist
Psychological Therapies for Older People Team
59 Airbles Road
Motherwell
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ML1 2TP
Tel: 01698 210021
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Research Director of Doctorate in Clinical Psychology and Professor of Clinical Neuropsychology
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Appendix 7

Miss Louise Sweeney
Trainee Clinical Psychologist
Psychological Therapies for Older People Team
59 Airbles Road, Motherwell
Lanarkshire, ML1 2TP
Tel: 01698 210021
Email: louise.sweeney@nhs.net

Consent Form Group 1, (V 1.2, 23/10/14)

Participant's identification number for this study: ____

Title of Study: An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults

Name of Researcher: Louise Sweeney, Trainee Clinical Psychologist

Please Initial box

1. I confirm that I have read and understand the Participant Information Sheet dated 23/10/14 (V 1.2) for the above study. I have had at least 24 hours to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
3. I agree for the researcher to gather information from my case file to obtain information about medication, physical health and diagnoses.	
4. I agree for the researcher to give a copy of the cognitive screening test results and consent form to my health professional to be kept in my patient file.	
5. I agree that some aspects of the meeting will be audio recorded. I am aware that this recording will be anonymised and deleted once it has been transcribed.	
6. I understand that relevant sections of my care record and data collected during the study may be looked at by responsible individuals from the sponsor or host organisation or from regulatory authorities where it is relevant to taking part in this research.	
7. I agree to take part in the above study.	

Name of participant:	Signature:	Date:
_____	_____	_____
Name of person taking consent:	Signature:	Date:
_____	_____	_____

When completed: 1 for participant, 1 for researcher site file, 1 (original) to be kept in referrers file.

Miss Louise Sweeney
Trainee Clinical Psychologist
Psychological Therapies for Older People Team
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Consent Form Group 2, (V 1.2, 23/10/14)

Participant's identification number for this study: ☐

Title of Study: An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults
Name of Researcher: Louise Sweeney, Trainee Clinical Psychologist

Please Initial box

1. I confirm that I have read and understand the Participant Information Sheet dated 22/10/14 (V 1.2) for the above study. I have had at least 24 hours to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	
3. I agree that if the researcher is concerned about my scores on the cognitive screen or depression measure, they can contact my G.P and provide them with a photocopy of the measure.	
4. I agree that some aspects of the meeting will be audio recorded. I am aware that this recording will be anonymised and deleted once it has been transcribed.	
5. I agree to take part in the above study.	

Name of participant: _____	Signature: _____	Date: _____
Name of person taking consent: _____	Signature: _____	Date: _____

When completed: 1 for participant, 1 for researcher site file.

Appendix 8

Miss Louise Sweeney

Trainee Clinical Psychologist

Psychological Therapies for Older People Team

59 Airbles Road, Motherwell

Lanarkshire, ML1 2TP

Tel: 01698 210021

Email: louise.sweeney@nhs.net

Demographic Group 1 (V1. 0, 3/8/14)

Please complete this brief questionnaire which asks some information about yourself. Your personal information will be kept completely confidential and your identity will only be known to the researcher. The data obtained will be anonymised and stored securely. You do not have to answer a question if you do not want to.

These questions are asked to find out more information about yourself (e.g. your gender) which is important so that the characteristics of people that involved in the study are known. Also some of the questions are asked to make sure that you are eligible for the study as some things, such as having dementia or drinking excessively would impact on the results of the study and could prevent you from taking part.

Please put a tick (√) for 'Yes' or a cross (x) for 'No' for the following questions;

	√ or x
Is English your first language?	
Have you ever had a head injury that involved loss of consciousness (being "knocked out" and/or being admitted to hospital?	
Have you ever suffered a stroke (sometimes referred to as "bleeding on the brain")	
Have you ever had a heart attack?	
Have you ever been diagnosed with epilepsy?	
Have you been diagnosed with dementia?	
Have you ever been told by a health professional that you have a drug or alcohol misuse disorder?	

PLEASE TURN OVER

What is your gender?	
What is your date of birth?	
Do you have any physical health problems? If so can you please state them?	
What medication are you currently taking?	
Do you currently drink alcohol? If so how often do you usually drink alcohol? (please circle) How much alcohol do you drink? (please circle) What alcohol do you tend to drink?	 Every day/ few times a week/ once a week/ few times a month/ once a month/ Less than once a month 1 small glass/ 2-4 small glasses/ more than 4

Thank you!

Please provide an email or postal address if you would like to receive a copy of the results of the study:

Miss Louise Sweeney

Trainee Clinical Psychologist

Psychological Therapies for Older People Team

59 Airbles Road, Motherwell

Lanarkshire, ML1 2TP

Tel: 01698 210021

Email: louise.sweeney@nhs.net

Demographic Group 2 (V1. 0, 3/8/14)

Please complete this brief questionnaire which asks some information about yourself. Your personal information will be kept completely confidential and your identity will only be known to the researcher. The data obtained will be anonymised and stored securely. You do not have to answer a question if you do not want to.

These questions are asked to find out more information about yourself (e.g. your gender) which is important so that the characteristics of people that involved in the study are known. Also some of the questions are asked to make sure that you are eligible for the study as some things, such as having dementia or drinking excessively would impact on the results of the study and could prevent you from taking part.

Please put a tick (√) for 'Yes' or a cross (x) for 'No' for the following questions;

	√ or x
Is English your first language?	
Have you ever had a head injury that involved loss of consciousness (being "knocked out" and/or being admitted to hospital?	
Have you ever suffered a stroke (sometimes referred to as "bleeding on the brain")	
Have you ever had a heart attack?	
Have you ever been diagnosed with epilepsy?	
Have you been diagnosed with dementia?	
Have you been diagnosed with a learning disability?	
Have you ever been told by a health professional that you have a drug or alcohol misuse disorder?	

PLEASE TURN OVER

What is your gender?	
What is your date of birth?	
Have you had a past history of depression where you have sought professional help?	
If so, have you had difficulties with depression in the last five years?	
Do you have any physical health problems? If so can you please state them?	
What medication are you currently taking?	
Do you currently drink alcohol? If so how often do you usually drink alcohol? (please circle) How much alcohol do you drink? (please circle) What alcohol do you tend to drink?	 Every day/ few times a week/ once a week/ few times a month/ once a month/ Less than once a month 1 small glass/ 2-4 small glasses/ more than 4

Thank you!

Please provide an email or postal address if you would like to receive a copy of the results of the study:

Appendix 9

Miss Louise Sweeney
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Tel: 01698 210021
Email: louise.sweeney@nhs.net

Debrief Sheet (v1.0, 3/8/14)

Thank you for taking part in this research study.

What happens to the results?

This research will form part of my doctoral thesis for my training as a Clinical Psychologist and it is hoped that the study will be published in a scientific journal. Only group data will be presented in any outputs arising from this research and your personal information will remain anonymous.

If after leaving this session you feel distressed by any of the things discussed today, please contact your G.P or the person who told you about the study. Or alternatively you can contact any of the numbers/websites listed below;

- Breathing Space 0800 83 85 87

Breathing Space is a free, confidential phone and web based service for people in Scotland experiencing low mood, depression or anxiety.
Open: Weekdays: Mon-Thu 6pm-2pm. Weekends: Fri 6pm- Mon 6am.
www.breathingspacescotland.co.uk

- Samaritans 08457 90 90 90

Samaritans is a free confidential helpline for people who are feeling distressed, suicidal or need emotional support.
Open: 24hours, 7 days a week.
www.samaritans.org

- NHS 24 111

NHS 24 is an online and telephone-based service. They can answer your questions about your health and offer advice. You contact NHS24 during evenings and weekends, if you think you need to access medical support before your GP reopens.
Open: 24 hours, 7 days a week
www.nhs24.com

If you would like a summary of the results of this study, please provide your email or postal address where the results can be sent. It is expected that the results will be ready for distribution in October 2015.

Appendix 10

Memory Rating Sheet

Please go back and recall your first self-defining memory. Using the rating scale below, please indicate how you felt today in recalling and thinking about your memory. Please also indicate the vividness and importance of the memory and the approximate number of years ago the memory took place (to the nearest whole number). Please note that you should not put your age when the memory took place, but instead how many years ago it took place.

0	1	2	3	4	5	6
Not at all			Moderately			Extremely

1. Happy _____
2. Sad _____
3. Angry _____
4. Fearful _____
5. Surprised _____
6. Ashamed _____
7. Disgusted _____
8. Guilty _____
9. Interested _____
10. Embarrassed _____
11. Contemptful _____
12. Proud _____

Using the same 0 – 6 scale, please rate how vividly you recalled the memory and how important the memory is to you.

13. Vivid _____
14. Important _____

How many years ago did the memory take place?

15. _____ Years Ago (to the nearest whole number)

Appendix 11

Classification System and Scoring Manual for Self-defining Autobiographical Memories

Jefferson A. Singer and Pavel S. Blagov

Connecticut College

2000 – 2001

*** NOTE, THIS IS NOT THE FULL VERSION OF THE MANUAL**
See http://self-definingmemories.homestead.com/Classification_System___Scoring_Manual_for_SDMs.pdf

Level 1: Structure and Specificity of the Memory Narrative

Specific memory narratives

A specific memory narrative has at least one single-event statement. A single-event statement is a sentence in which the attention of the rememberer is clearly focused upon a happening that meets the following criteria:

1. It is a unique occurrence;
2. It has brief duration of less than one day.

Criterion 1: Unique occurrence.

This means that the rememberer's attention is focused on something that happened on a particular day that could possibly be identified by its date and time.

Criterion 2: Brief duration.

It is clear from the narrative that the single-event statement concerns the happenings of less than one day, or, in some cases, a night and the following morning (i.e., the action of the single-event statement is encapsulated within a 24 hour period). The brevity of the happening also means that it is perceived as an uninterrupted unity.

Note on Speech in the Narrative:

The quoting or paraphrasing of speech or dialogue is always considered a single-event statement when it is clear from the narrative that the focus is on a particular instance of speaking. This should not be confused with memories in which the person remembers, without focusing his or her attention on a particular instance, hearing somebody say the same thing over and over again on different occasions.

Note on Ambiguous Language:

Sometimes the rememberer's use of language makes it difficult for the rater to decide whether a particular sentence is a single-event statement or part of non-specific narrative that does not meet the above criteria. Consider the following sentences: 1. "I remember learning how to bike." 2. "Completing a life-guard course was a significant step for me." 3. "I remember breaking up with my boyfriend." 4. "I will never forget the death of my grandmother." 5. "When my mother remarried, I was totally surprised and confused." 6. "I was happy to be elected captain of the team." In all of these statements, the rememberer might be referring to a specific event that took place in one day, to events that took course over several days or weeks, or to both. For example, sentence 1 might be equivalent to, "I remember the instance when, for the first time, I rode the bike without my sister's help: she remained behind in the street, cheering and congratulating me." It could also mean, "It took me weeks, day after day, trying to learn how to bike. My sister always came to help me, but I was never able to ride without her aid. I persevered and eventually succeeded, but learning how to bike was a difficult process for me." Similarly, sentence 2 might refer to the day when the certificate for completion of the course was awarded to the rememberer, but it could also refer to the process of taking and completing the course. Reading the rest of the six examples carefully will reveal that memories with different kinds of temporal and narrative structure may be hidden behind the ambiguous use of language by the rememberer. In such cases, the single sentence taken out of context is not specific enough to be called a single-event statement. The

rater has to consider the entire transcript of the memory in order to decide whether, for example, the rememberer is talking about the death of the grandmother in terms of a specific event on the day of the funeral or about connected happenings over the course of many days as the family mourned the loss. Looking back at the example of learning how to ride the bicycle, it is important to observe that in some cases "to learn" may only refer to an instance as opposed to a process. By convention, to learn a piece of information through a specific communication ("Learning that I was accepted to college...") is a single-event statement. Contrary to that, mentions of birth, death, marriage, divorce, an election, etc., must not be taken for single-event statements unless Criterion 2 is met, as these labels could designate unique but lengthy periods of time. In summary, the above discussion concerns kinds of statements that could be parts of single-event statements in certain contexts but aren't necessarily. Identifying single-event statements is important to the classification of specific memory narratives, whereas narratives that lack such statements are either episodic or generic and will be discussed later.

Discussion of Specific Memories:

Specific memories have at least one single-event statement as described above. Usually, specific memories are made up of several related single-event statements that retell an uninterrupted sequence of perceptions and actions that is unique in time and brief. The time and place are often specified. Often, much detail is provided, making it possible to imagine the setting and the actors of that particular incident. Participants are identified by names or other labels and described through their dialogue, emotional responses, actions, appearance, physical location, and other attributes. The specificity of detail varies from purely descriptive to reflective memories in which the rememberer "steps out" of the narrative to provide contextual information and to make inferences about the significance of the event or the memory itself. Broader contextual information can present the event as embedded in a more general narrative beyond the time and location of the particular incident.

Types of specific narratives:

Type 1 specific narrative (The pure specific memory):

The memory narrative is composed entirely of related single-event statements pertaining to the happenings of one day, or, in some cases, two consecutive days (e.g., a night and the following morning). The rememberer's attention does not diverge from the incident, and there is no general narrative outside of its timeframe.

Note:

We identified empirically two kinds of statements in specific memory narratives that could arguably be taken as divergences of the rememberer's attention from the specific instance of the Type 1 specific memory. These two kinds of statements are described below, and the point is made that the presence of one or the other should not disqualify a memory narrative that is otherwise clearly Type 1 from being classified as such. The first reason is coding reliability, which we found to be higher after adding this condition. The second reason is a sort of verbal convention or linguistic necessity that leads to the insertion of these statements in the narratives of otherwise purely specific memories. The first kind of statement is a simple "time-tag" that indicates approximately when the event took place and validates Criterions 1 or

2 for single event statements. A "time-tag" is a phrase such as "Some time in eight grade" which makes a mention of a period (eight grade) that is not brief and stands outside the specific narrative that follows. This phrase is clearly important only as an assertion than the event happened at a particular time, but it is not an account of any events itself. In other words, it does not significantly reduce the specificity of the narrative. The second kind of statement that usually appears in the beginning or at the end of a specific memory narrative (but might be encountered in the middle) is a statement such as: "This was the first time I rode a bicycle," or "I remember my last soccer game in high school," or "I had never done anything like this before." In both cases, there is an implied link to other events that are outside the rest of the narrative, which satisfies the Type 1 specific memory conditions. The rater of the memory realizes, that the rememberer probably can recall other cases of riding the bicycle or playing soccer in high school. As long as this arguable distraction from the immediate event is limited to a short phrase such as the above, we assume that the importance of this phrase is to better characterize the specific event and that it does not imply that the rememberer actually is thinking of other events besides the Type 1 specific memory.

Type 2 specific narratives (The specific memory with generalization):
There is one single-event statement or several related single-event statements that pertain to the same incident on one particular day. In addition, a general narrative about other events and the autobiographical context of the memory is provided, but it does not involve single-event statements. Clearly, there is a unique point in time upon which the person's attention focuses in the single-event portion of the memory. An important indicator is the presence of any of the following (a) a statement about the uniqueness of the time; (b) an expression of strong emotion; (c) a declaration of the importance of the single-event portion of the memory; (d) imagistic detail; (e) speech or dialogue.

Type 3 specific narratives (The specific memory with multiple singe events): Both Type 1 and Type 2 specific memories have single-event statements that refer to the happenings of a single 24-hour period. Type 3 specific memories have a different format. A Type 3 memory could be thought of as composed of (a) two or more memories of either Type 1, Type 2 or both, or (b) of at least two specific memories of Type 1 or 2 and one episodic or generic memory. It is organized around a sequential story that extends beyond a single 24-hour period, and there is more than one "cluster" of single-event statements. There is at least one such statement regarding one single event, and at least one more such statement about another single event that does not fall in the same 24 hour period. The series of single events may be assembled into an overall story with an identifiable theme (e.g., "my team's underdog victory at a tournament" or "my first days of college"). Because the timeframe of the memory is more than a day and because the memory relates a sequence of related single occurrences, it resembles an

episodic memory, a kind of memories that is discussed next. What differentiates this specific memory from an episodic memory are the single-event statements, which contain details that locate these events in unique moments of time. The single events in the narrative contain any of the following – quoted dialogue, precise details of actions, mention of specific moments in time by hour or date. Further, at least some, if not all, of the single events mentioned in the story sequence are unique occurrences; they are not blended or depicted as repeated in the course of the narrative.

Final Note on the Specificity of Detail:

The specific memory narrative has at least one statement in which the attention of the rememberer is clearly focused upon happenings from a particular day and time. If there is only one such statement and it does not provide any statement of time, emotion, importance, detail, or dialogue about the specific instance, then the memory is not specific. Specific memory narratives must have single-event statements that allow the reader to locate the event in a unique and clear moment of the past. If a one-day single event is mentioned only in passing and the remainder of the narrative takes as its focus extended events that range over days, weeks, or months, the memory cannot be classified as specific.

Non-specific (generalized) narratives (Episodic and Generic):

Episodic narratives:

These memory narratives lack any single-event statements of the kind that was described previously. If they do mention something happening on a particular day, then it is only as a part of a developing narrative beyond itself, and it is also deprived of imagistic detail, speech, or a statement about strong emotion, importance, or a singling-out statement about the time. The narrative as a whole may have such statements, but they would pertain to a general event with a length of over a day or with unclear duration. The event may be a unity (such as a vacation trip) or it may be composed of several related general events that develop into a story line. Overall, the episodic memory narrative is a generalized narrative of sequential events that fit into a single lengthy timeframe. Narrative of perceptions and actions is generalized, and it merges with the narrative of the context. The span is more than a day, often much longer, for example: junior year in high school, last summer's vacation, a period of unemployment.

Note on Ambiguous Language:

In the discussion of Type 1 memories, it was necessary to discuss some kinds of statements that might appear non-specific but do not disqualify the memories as Type 1. The first kind of such statements, the "time-tag," can be expected to appear in episodic memories to serve the same function as in Type 1 memories. The second kind of statements, the "first time, last time, never before" phrases, can also appear in episodic memories without giving them specific quality. These phrases obviously do not make single-event statements in themselves, as they can refer to long periods of time, but they could be parts of single-event statements in specific memories. In the preliminary discussion of specific memories, six examples of phrases were given, that

could refer to either specific events or episodic narratives, depending on the context. It is important to be continually aware of these potential ambiguities. It was said that, for the most part, those statements would be considered non-specific narrative, unless there is additional "proof" that the attention of the rememberer is fixed upon a unique and brief occurrence. Therefore, these statements may occur in episodic memories only if not accompanied by such "proof" (statement of time, emotion, importance, detail, or dialogue about the specific and unique occurrence). In addition, there is a group of very important statements that have been observed to occur in episodic narratives that could cause some confusion. These are statements such as: "By the time I was hospitalized, my condition had gone worse," and "We continued to prepare until the very last day." The point is that, when part of an overall episodic narrative, these phrases are part of it, and do not qualify as single-event statements. They could do so, only if the rememberer went on to tell more about the specific instance of hospitalization or about the specific and unique events on the last day. As long as these moments are mentioned in passing and without additional detail, they remain non-specific in the context of the timeframe of the episodic narrative.

Generic narratives:

The memory is composed of equivalent events that kept occurring over time intervals that are not themselves part of the memory. These separating intervals of time may be of equal duration, especially when they depend on natural cycles. The remembered events themselves blend or fuse together, and they contain the same characters, settings, happenings, and emotions. The narrative may contain an event that stands out as a good example of what all other events in the blend were like, yet the focus remains on the abstraction of repeated experience.

Note:

The generic blend of events that comprises the generic memory narrative may consist of events that would otherwise meet the criteria for either specific or episodic events. For example, the memory could be one of "all summer vacations throughout high school" or "every time I saw the movie '101 Dalmatians.'" A narrative is classified as generic only when it consists entirely of the generic narrative. One exception is when a specific vacation or one particular time of seeing the movie may be mentioned by the rememberer as an example of how all the other similar events happened. A complex memory narrative may contain a generic portion but also a portion in which some specific or episodic event is told that is not in itself part of the generic blend of events. In this case, the memory is classified according to this other portion's characteristics as Type 2 or Type 3 specific or episodic. Memory narratives are classified as generic only if they are "pure" and consist entirely of a generic narrative and possibly an exemplary event that serves to convey that narrative.

Level 2: Memory Integration

This coding system divides memory narratives into two categories of integrative and non-integrative memories. Integrative memories contain statements that ascribe meaning to the memory described. This meaning is usually expressed in statements about what the memory has taught the individual (e.g., "the lesson learned" or "from that point on I realized…"); these insights may be expressed about life in general or specifically about the individual's own life and sense of identity.

Non-integrative memories may be filled with emotion and may contain generalizations about the individual's personality, the impact of the memory, or the activities of the individual, but these generalizations do not explain what the memory means to the individual or how the memory has conveyed meaning in the individual's life. In other words, a memory that contains the generalization, "I was a shy child," is not an integrative memory unless the individual were to add a statement about how this memory caused this shyness to develop or revealed this attribute to the individual in a new light. Memories that contain no generalizations about the individual or events, and simply have a time-stamp (e.g., "It was my junior year in high school" or "I was eight years old when this event took place") are clearly non-integrative memories.

Within both the Integrative and Non-Integrative categories, we include subtypes that will help to locate memories within each category. These subtypes are meant as aids and do not need to be scored in their own right. When scoring, one should always score toward the highest level of integration. For example, a memory may contain a time-stamp and a generalization, but if it also contains a meaning statement, it should be coded as integrative.

Non-Integrative Memories

Two Subtypes

1. Pure Narrative of Events, with or without Time-Stamp
2. Categorization by Emotion, Impact or Attribute (Including Personality Attribute)

Non-integrative narratives of Type 1 (Pure Events. Time Stamps):

The narrative describes the events within the timeframe of the specific event, episode, or blended series of events. There is no discussion of any broader context, category of experience, or importance of the events in the memory. If the emotions, thoughts, or attributes of the participants in the memory are discussed, these statements are located in the timeframe of the memory. For example, "When I fell from the tree, I was so scared that I had broken my leg. I thought what would happen if I could never walk or run again."

Time Stamp - The only statement(s) apart from the description of the events may be a phrase or two that indicates when they happened in the person's life, without giving additional information about the individual's life or a meaning drawn from these events.

Non-integrative narratives of Type 2 (Categorization by Emotion, Impact, Context or Attribute):

The narrative goes beyond the location of the memory in a particular time period to include information about the category of emotion, impact, context, or attribute of the remembered experience. These statements identify the memory as being an exemplar of a type of emotion ("This is one of my happiest memories"), type of impact ("This is one of my most important memories"), type of context ("I was part of the debate team my junior year of high school") or type of attribute ("I was always an angry child"). Beyond locating the memory in this particular memory bin, the narrative makes no interpretative statement about the larger significance or meaning of the memory in general or in the person's life. That is, the narrative does not

include any statements about what the individual has learned from the experience described, nor does the individual specify in what particular ways the experience has influenced his or her life.

Individuals may also make generalizations about time in the memory, such as, "This was my first experience with death" or "I recall my first day of school." Though these generalizations or categorizations of the events are not simple time stamps, they are also not integrative unless they contain additional meaning statements that express a meaning or lesson learned from these "First" events. Without such statements, these "First" memories should still be scored as Non Integrative.

Integrative Memories

Integrative memories step back from narrative events and generalizations described in the memory to make an additional statement about the specific significance or meaning of the memory to the individual. A meaningful statement must extend beyond simple pronouncements that the memory is "important" or "the most painful" or "one that I will never forget," but also include an indication of why the memory holds this quality of importance, emotion or vividness for the individual. There are two subtypes of integrative memories.

The first, "Meaning Not Tied to the Self" encompasses memories that include statements about "lessons learned" or new understandings, but these memories do not link these lessons specifically to the self or the individual's own growth or change. These lessons may be statements about life in general or lessons learned about a particular person, group or institution.

The second, "Meaning Tied to the Self," encompasses memories that include statements about lessons or understandings that are explicitly connected to the individual self and sense of identity.

Two Subtypes

1. Meaning Not Tied to Self
2. Meaning Tied to the Self

Integrative narratives of Type 1 (Meaning Not Tied to Self):

A narrative at this level has at least one statement that contains an insight or lesson about life in general or some important person from the rememberer's life. Statements such as "I believe" or "I think" are permissible at this level, as long as the belief or thought (insight or lesson) does not immediately discuss one's own personality, life, or relationship. Instead, it concerns life in more abstract terms or the personality of an important other.

In offering the meaning found in the memory, the individual may describe how the events serve to reinforce the particular lesson or message stated. On the other hand, the individual may present events that help to explain the termination, reversal or reduction of the individual's belief in a particular viewpoint or perspective.

In every case, the narrative contains (a) explicit meaning phrases ("It was a turning point;" "I came to realize;" "I learned that..." etc.), (b) explicit or implied connections between the message and the memory. That is, it is clear that the

individual is expressing a link between the events in the memory and the meaning statement that is expressed.

Integrative narratives of Type 2 (Meaning Tied to the Self):

The critical characteristic of this subtype is that the memory narrative includes a statement that ties the events of the memory to an important theme or lesson learned about the self. It is not enough that the narrative includes statements about characteristics of the self (e.g., "I am funny," or "I get sad at sunsets"). The memory narrative must include a statement about what this attribute means to the individual or how the memory exemplifies a change in this attribute. For example, "Ever since I broke up with my girlfriend, I get sad at sunsets. We were watching one when she told me it was over. Now when I think of a sunset, I realize that I can't always be sure of another person."

Relationship Meaning

The memory narrative may also include a statement about the importance and significance of a relationship in the individual's life. This statement would again need to expand beyond a mere statement of the importance of the relationship (e.g., "She was my first love" or "She is my favourite aunt"), but also explain the meaning or ongoing significance of the relationship in the person's life (e.g., "I always turn to her when I am down," or "She continues to serve as a role model to me years later").

Functional Meaning

One other Self-Meaning statement is the individual's indication that the memory is used in a functional way. For example, "When I am sad, I think of this memory to cheer me up," or "I always recall this memory when I want to remind myself why I keep fighting for social change," or "This memory is a symbol of the relationship my best friend and I have. We share it with each other whenever either of us feels low or isolated.

Appendix 12

Manual for Coding Events in Self Defining Memories

Avril Thorne & Kate C. McLean

University of California, Santa Cruz, October, 2001

***NOTE, THIS IS NOT THE FULL VERSION OF THE MANUAL**

See http://www.self-definingmemories.com/Thorne___McLean_SDM_Scoring_Manual.pdf

Overview: Types of Events in Self-Defining Memories

EVENT TYPES: DEFINITIONS AND EXAMPLES

1. LIFE-THREATENING EVENT

Examples: deaths, accidents, assaults, severe episodes of physical or mental illness.

Events in which issues of life and death, or physical well-being, structure the narrative, so that the narrative is built around the life-threatening event. Mortality concerns may not be emphasized, but if the description of the event indicates the plausibility of severe physical injury or death , the event qualifies as life-threatening. The event may involve risk to oneself, or the death or injury of someone else. If emotions are mentioned, the emotions are usually fear (for events threatening oneself) or sadness (in response to someone's death).

In classifying narratives into event categories, it is important to imagine what the event would have felt like. Would it have been scary, given the situations and the age of the person?

Please code each life-threatening events into one of the following subcategories, or "LTE types". With the exception of the first category, all of the LTE types centre on events that threaten oneself rather than another person.

Life-Threatening Event Subtypes:

11. Death or serious illness/injury of someone else (person or animal)

Examples: Death of a family member, friend suffers from AIDs, friend seriously injured in car accident, suicide of a rock star (Kurt Cobain)

12. Serious accidents or illnesses (to oneself)
Events in which one's own physical well-being is at risk, although others may also be at risk.

13. Physical assaults (to oneself). Note: Does not include sexual abuse.

Events in which physical aggression is directed at oneself (also possibly others), or could plausibly be felt to be directed at oneself. Perpetrator is usually a parent or peer. Narrative is organized around the aggression and its consequences, which might ultimately be positive or negative. Childhood events involving aggression may seem less severe, but if narrative explicitly refers to feeling afraid, or crying in the face of aggression, the narrative can probably be classified into this category.

14. Rape, attempted rape, or sexual abuse (to oneself); others may also be injured
Such narratives are not frequent in our sample, but are events that are important in clinical literature. For that reason, we wanted to be able to tag these special cases.
Narrative must indicate that sexual abuse was involved, e.g.,, uses terms such as "molested," "raped".

19. LTE not classifiable: life-threatening event does not fit into any of the above categories.

We did not find any unclassifiable LTE narratives in this sample.

Events that are not Life-Threatening:

2. RECREATION / EXPLORATION
Examples: riding a cow, a lively cake fight, being mischievous for the fun of it, running naked in a field of flowers; a lovely hiking trip, shooting a gun, discovering the pleasures of reading, catching a fish, breaking a toe en route to Hawaii; first time stoned; sneaking into a concert, experiencing skydiving or bungee jumping, experiencing an unexpected spiritual moment, or peak experience.
Narratives centre on recreational activities, such as hobbies, parties, dances, traveling, vacationing, or sports. Emphasis is on recreation, play, or

exploration, rather than achievement striving, or concerns for safety, or concerns about relationships. If an attempt at recreation is obstructed, can also count as a recreational event so long as the obstruction is not life-threatening (see Hawaii example, below). Spiritual moments that are framed as moments in them, and not framed as a decision to redirect one's life, count as recreation/exploration, not as achievement.
Note: If serious injury or fear for safety dominates the narrative, code as life-threatening event

3. RELATIONSHIP EVENT

Examples: first love, breakup, parents' divorce, reconciliation, intimacy, separation, interpersonal conflict.
Events in which a particular interpersonal relationship is emphasized, usually one with a parent or a peer. The relationship should have some history or at least some emotional investment in the other person. Themes in such narratives might emphasize moving toward, away, or against another person(s). Conflict may or may not be present.

4. ACHIEVEMENT EVENT
Examples: winning a competition, learning to ride a bicycle or drive a car, passing, failing, or struggling with an important exam; getting into college, reclaiming one's ethnic heritage by climbing the Great Wall of China; laborious but not life-threatening childbirth; embracing a new religion or deciding to live a life of spirituality, mastering the urge to eat (control over body); struggling to be popular; finally getting one's braces off; realizing one wants to have children; pledging a sorority; establishing a new life when the family immigrated
Events that emphasize one's own or group/family effortful attempts at mastery or accomplishment with regard to physical, material, social, or spiritual goals, regardless of the outcome. Event must involve effortful striving to achieve a goal, skill, or direction in life (vocational or spiritual). Commitment to a new way of life counts as an achievement event.

5. GUILT/SHAME; Doing right vs. wrong

Examples: Guilt about getting pregnant, about lying, about hurting someone. Deciding not to steal something, or stealing something and feeling remorse. Making a moral or ethical decision to do the right thing in the present, or on future occasions.
Events in which the issue of one's doing right or wrong is emphasized more so than any of the prior concerns; there is an explicit contrast between what one feels is right vs. wrong. Narrative may explicitly uses the term "guilt," "shame," or "ashamed," or in some way clearly convey remorse for one's own actions. Alternately, the narrative may emphasize having chosen to do the right thing, when one could have done the wrong thing. The focus in the narrative is on one's own responsibility for having done right or wrong. Sometimes the reporter resolves to be a better person as a result. The offense may not seem

severe to the coder, but the reporter's perspective should be the basis on which the narrative is coded. Note: Embarrassment is usually too mild an emotion to count in this category (see unclassified events). Childhood pranks in which guilt or shame is not emphasized also do not count in this category, because the issue of morality is not central (such events might count as recreation, or relationship).

6. DRUG, ALCOHOL, TOBACCO USE

Examples: First time smoking cigarettes or pot, taking psychedelics or speed, getting extremely drunk, overdosing on pills, getting busted for buying drugs.

Events that centre on the use drugs, alcohol, or tobacco for recreational, thrill, or possibly suicidal purposes. The event may have a positive or negative outcome. Although the event may be classified into prior categories, e.g., LTE or recreation, we code such events separately the purposes of another project that we are developing.

99. EVENT UNCLASSIFIABLE.

Narrative does not fit well into any of the event categories.

Appendix 13

University of Glasgow | College of Medical, Veterinary & Life Sciences

TMcM/LC

11th August 2014

Louise Sweeney
0/1
759 Pollockshaws Road
Glasgow
G41 2AX

Dear Louise,

Doctorate in Clinical Psychology Major Research Project
An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults

The above project has been reviewed by your University Research supervisor and by a member of staff not involved in your project and has now been deemed fit to proceed to ethics.

Congratulations and good luck with the study.

Yours sincerely,

[redacted]

T M McMillan
Professor of Clinical Neuropsychology
Research Director

Doctorate in Clinical Psychology
Programme Director: Dr Hamish McLeod

Mental Health and Wellbeing
Admin Building, Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW G12 0XH
Direct line: +44(0) 141 211 3920/0607 Fax: +44(0) 141 211 0356
Email: mhwb-dclinpsy-students@gla.ac.uk

Appendix 14

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 5
Ground Floor – The Tennent Institute
Western Infirmary
38 Church Street
Glasgow G11 6NT
www.nhsggc.org.uk

Miss Louise Sweeney
Institute of Health and Wellbeing
Gartnavel Royal Hospital
1055 Great Western Road
G12 0XH

Date 21st October 2014
Your Ref
Our Ref
Direct line 0141 211 2102
Fax 0141 211 1847
E-mail WOSREC5@ggc.scot.nhs.uk

Dear Miss Sweeney

Study title:	**An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults.**
REC reference:	**14/WS/1121**
IRAS project ID:	**156723**

The Research Ethics Committee reviewed the above application at the meeting held on 15 October 2014. The Chair did telephone the number given but unfortunately you were not available.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the REC Manager Mrs Liz Jamieson, WoSREC5@ggc.scot.nhs.uk.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below. .

Conditions of the favourable opinion

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

1) The Consent Forms to be revised as follows:

Depressed Group

The following mandatory paragraph should be inserted:

I understand that relevant sections of my care record and data collected during the study may be looked at by responsible individuals from the sponsor or host organisation or from regulatory authorities where it is relevant to taking part in this research.

Control Group

There is reference to 'medical care or legal rights being affected'. This should be deleted as the Control Group may not be undergoing any medical care.

2) The Participant Information Sheets to be revised as follows:

Depressed Group

In the first paragraph at line 6 'are' should be deleted.

Control Group

At 'Do I have to be involved' again there is reference to medical care being affected which should be removed.

It is noted that interviews could be held in the Library. It would be useful to indicate that it would be in a private room. No one would want to talk out loud about their self defining memories.

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

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

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

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

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

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

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

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

Ethical review of research sites

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

Summary of discussion at the meeting

Informed consent process and the adequacy and completeness of participant information

The Committee agreed that changes were required to both the Consent Forms and the Participant Information Sheets for both groups as detailed above.

Suitability of the applicant and supporting staff

The Investigator was a PhD student with a number of years of clinical experience and has the support of the University Supervisor and clinical teams.

Independent review

There was an Independent Review from the University which was favourable and all comments have been taken into account.

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Poster (v1.0, 3/8/14)]	Version 1.0	03 August 2014
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [South Lanarkshire Council]		
GP/consultant information sheets or letters [letter to G.P cognitive and mood disturbance (v1.0, 1/9/14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to referrer declined response (v1.0, 1/9/14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to referrer not suitable response (v1.0, 1/9/14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to G.P cognitive impairment (v1.0, 1/9.14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to referrer accepted response (v1.0, 1/9/14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to G.P mood disturbance (v1.0, 1/9/14)]	1	01 September 2014
IRAS Checklist XML [Checklist_02102014]		02 October 2014
Non-validated questionnaire [Demographic Information Sheet Group 1 (v1.0, 3.8.14)]	Version 1.0	03 August 2014
Non-validated questionnaire [Demographic Information Sheet Group 2 (v1.0, 3.8.14)]	Version 1.0	03 August 2014
Other [Debrief Sheet (v1.0, 3.8.14)]	Version 1.0	03 August 2014
Other [Flow chart recruitment process]	Version 1.0	03 August 2014
Participant consent form [Consent Form group 2 (v1.0, 3/8/14)]	Version 1.0	03 August 2014
Participant consent form [Consent Form (v1.0, 3/8/14)]	Version 1.0	03 August 2014
Participant information sheet (PIS) [Information sheet group 2 (v 1.0, 03/08/14)]	Version 1.0	03 August 2014
Participant information sheet (PIS) [Information sheet (v 1.0, 03/08/14)]	Version 1.0	03 August 2014
REC Application Form [REC_Form_02102014]		02 October 2014
Referee's report or other scientific critique report [Scientific Critique]	Version 1	01 September 2014
Research protocol or project proposal [Research proposal]	Version 1	01 August 2014

Summary CV for Chief Investigator (CI) [Louise Sweeney CV]	1	01 September 2014
Summary CV for student [Louise Sweeney CV]	1	01 September 2014
Summary CV for supervisor (student research) [Academic Supervisor CV Dr Hamish McLeod]	Version 1.0	19 September 2014
Validated questionnaire [Montreal Cognitive Assessment (MoCA), v7.1, 2005]	Version 1.0	19 September 2014
Validated questionnaire [Self-Defining Memory Task, Singer 2000, v1.0]	Version 1.0	19 September 2014
Validated questionnaire [Metacognitions questionnaire-30, v1.0 2009]	Version 1.0	19 September 2014
Validated questionnaire [Self-Defining Memory Rating Sheet, 2000, v10]	Version 1.0	19 September 2014
Validated questionnaire [Geriatric Depression Scale, v1.0 1983]	Version 1.0	19 September 2014
Validated questionnaire [White Bear Suppression Inventory, 1994, v1.0]	Version 1.0	19 September 2014

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

After ethical review

Reporting requirements

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

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

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

User Feedback

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

HRA Training

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

14/WS/1121	**Please quote this number on all correspondence**

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

Yours sincerely

[redacted]

Liz Jamieson
REC Manager
On behalf of Dr Gregory Ofili, Chair

Enclosures:	*List of names and professions of members who were present at the meeting and those who submitted written comments*
	"After ethical review – guidance for researchers"
Copy to:	*Mr Raymond Hamill , NHS Lanarkshire*

Appendix 15

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 5
Ground Floor - Tennent Building
Western Infirmary
38 Church Street
Glasgow
G11 6NT

Date 04 November 2014

Direct line 0141 211 2102
E-mail WoSREC5@ggc.scot.nhs.uk

Miss Louise Sweeney
Institute of Health and Wellbeing
Gartnavel Royal Hospital
1055 Great Western Road
G12 0XH

Dear Miss Sweeney

Study title: **An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults.**
REC reference: **14/WS/1121**
IRAS project ID: **156723**

Thank you for your emails of 24th and 31st October 2014. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 21 October 2014.

I also acknowledge the minor amendment to use a more stringent cut off of 11 on the Geriatric Depression Scale (instead of 10).

Documents received

The documents received were as follows:

Document	*Version*	*Date*
Participant consent form [Group 1]	1.2	23 October 2014
Participant consent form [Group 2]	1.2	23 October 2014
Participant information sheet (PIS) [Group 1]	1.2	23 October 2014
Participant information sheet (PIS) [Group 2]	1.2	23 October 2014
Validated questionnaire [Self-defining Memory Rating Sheet - Singer 2000]	1.1	19 September 2014

Approved documents

The final list of approved documentation for the study is therefore as follows:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Poster (v1.0, 3/8/14)]	Version 1.0	03 August 2014
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [South Lanarkshire Council]		
GP/consultant information sheets or letters [letter to referrer accepted response (v1.0, 1/9/14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to referrer not suitable response (v1.0, 1/9/14)]	1	01 September 2014
GP/consultant information sheets or letters [letter to G.P mood disturbance (v1.0, 1/9/14)]	1	01 September 2014
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GP/consultant information sheets or letters [letter to G.P cognitive impairment (v1.0, 1/9.14)]	1	01 September 2014
IRAS Checklist XML [Checklist_02102014]		02 October 2014
Non-validated questionnaire [Demographic Information Sheet Group 2 (v1.0, 3.8.14)]	Version 1.0	03 August 2014
Non-validated questionnaire [Demographic Information Sheet Group 1 (v1.0, 3.8.14)]	Version 1.0	03 August 2014
Other [Debrief Sheet (v1.0, 3.8.14)]	Version 1.0	03 August 2014
Other [Flow chart recuitment process]	Version 1.0	03 August 2014
Participant consent form [Group 2]	1.2	23 October 2014
Participant consent form [Group 1]	1.2	23 October 2014
Participant information sheet (PIS) [Group 2]	1.2	23 October 2014
Participant information sheet (PIS) [Group 1]	1.2	23 October 2014
REC Application Form [REC_Form_02102014]		02 October 2014
Referee's report or other scientific critique report [Scientific Critique]	Version 1	01 September 2014
Research protocol or project proposal [Research proposal]	Version 1	01 August 2014
Summary CV for Chief Investigator (CI) [Louise Sweeney CV]	1	01 September 2014
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Validated questionnaire [Metacognitions questionnaire-30, v1.0 2009]	Version 1.0	19 September 2014
Validated questionnaire [White Bear Suppression Inventory, 1994, v1.0]	Version 1.0	19 September 2014
Validated questionnaire [Montreal Cognitive Assessment (MoCA), v7.1, 2005]	Version 1.0	19 September 2014
Validated questionnaire [Self-Defining Memory Task, Singer 2000, v1.0]	Version 1.0	19 September 2014
Validated questionnaire [Self-defining Memory Rating Sheet - Singer 2000]	1.1	19 September 2014

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all

participating sites.

14/WS/1121	Please quote this number on all correspondence

Yours sincerely

[redacted]

Mrs Sharon Macgregor
REC Manager

Copy to: Mr Raymond Hamill , NHS Lanarkshire

Appendix 16

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 5
Ground Floor - Tennent Building
Western Infirmary
38 Church Street
Glasgow
G11 6NT

Date 18 March 2015

Direct line 0141 211 2482
Fax 0141 211 1847
E-mail WoSREC5@ggc.scot.nhs.uk

Miss Louise Sweeney
Institute of Health and Wellbeing
Gartnavel Royal Hospital
1055 Great Western Road
G12 0XH

Dear Miss Sweeney

Study title: **An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults.**
REC reference: **14/WS/1121**
Amendment number: **1 (AM02)**
Amendment date: **14 February 2015**
IRAS project ID: **156723**

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

Ethical opinion

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

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Notice of Substantial Amendment (non-CTIMP)	1 (AM02)	14 February 2015
Summary, synopsis or diagram (flowchart) of protocol in non technical language	2.0	18 February 2015

Membership of the Committee

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

R&D approval

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

Statement of compliance

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

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

14/WS/1121:	**Please quote this number on all correspondence**

Yours sincerely

[redacted]

On behalf of
Dr Gregory Ofili
Chair

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

Copy to: *Mr Raymond Hamill , NHS Lanarkshire*

Appendix 17

Miss Louise Sweeney
Trainee Clinical Psychologist
Institute of Health and wellbeing
Gartnavel Royal Hospital
1055 Great Western Road
Glasgow
G12 0XH

R&D Department
Corporate Services Building
Monklands Hospital
Monkscourt Avenue
AIRDRIE
ML6 0JS

Date 14 November 2014
Enquiries to Elizabeth McGonigal,
R&D Facilitator
Direct Line 01236 712459
Email Elizabeth.mcgonigal@lanarkshire.scot.nhs.uk

Dear Miss Sweeney,

Project title: An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults

R&D ID: L14076

I am writing to you as Chief Investigator of the above study to advise that R&D Management approval has been granted for the conduct of your study within NHS Lanarkshire as detailed below. This approval also includes Amendment AM01, which was approved by REC on 12/11/14:

NAME	TITLE	ROLE	NHSL SITE TO WHICH APPROVAL APPLIES
Dr Lisa Gadon	Clinical Psychologist	Local Collaborator	NHS Lanarkshire

As you are aware, NHS Lanarkshire has agreed to be the Sponsor for your study. On its behalf, the R&D Department has a number of responsibilities; these include ensuring that you understand your own role as Chief Investigator of this study. To help with this we have outlined the responsibilities of the Chief Investigator in the attached document for you information.

All research projects within NHS Lanarkshire will be subject to annual audit via a questionnaire that we will ask you to complete. In addition, we are required to carry out formal monitoring of a proportion of projects, in particular those projects that are Sponsored by NHS Lanarkshire. In either case, you will find it helpful to maintain a well organised Site File. You may find it helpful to use the folder that we have included for that purpose.

For the study to be carried out you are subject to the following conditions:

Conditions

- You are required to comply with Good Clinical Practice, Ethics Guidelines, Health & Safety Act 1999 and the Data Protection Act 1998.
- The research is carried out in accordance with the Scottish Executive's Research Governance Framework for Health and Community Care (copy available via the Chief Scientist Office website: http://www.show.scot.nhs.uk/cso/ or the Research & Development Intranet site: http://firstport/sites/randd/default.aspx.
- You must ensure that all confidential information is maintained in secure storage. You are further obligated under this agreement to report to the NHS Lanarkshire Data Protection Office and the Research & Development Office infringements, either by accident or otherwise, which constitutes a breach of confidentiality.
- Clinical trial agreements (if applicable), or any other agreements in relation to the study, have been signed off by all relevant signatories.
- You must contact the R&D Department if/when the project is subject to any minor or substantial amendments so that these can be appropriately assessed, and approved, where necessary.
- You notify the R&D Department if any additional researchers become involved in the project within NHS Lanarkshire
- You notify the R&D Department when you have completed your research, or if you decide to terminate it prematurely.
- You must send brief annual reports followed by a final report and summary to the R&D office in hard copy and electronic formats as well as any publications.
- If the research involves any investigators who are not employed by NHS Lanarkshire, but who will be dealing with NHS Lanarkshire patients, there may be a requirement for an SCRO check and occupational health assessment. If this is the case then please contact the R&D Department to make arrangements for this to be undertaken and an honorary contract issued.

I trust these conditions are acceptable to you.

Yours sincerely,

[redacted]

Raymond Hamill – Corporate R&D Manager

c.c.:

NAME	TITLE	CONTACT ADDRESS	ROLE
Dr Lisa Gadon	Clinical Psychologist	lgadon@nhs.net	Local Collaborator
Raymond Hamill	Research & Development Manager	Raymond.hamill@lanarkshire.scot.nhs.uk	Sponsor Contact

Enc 1 x Site File
1 x Responsibilities as Sponsor Notes

Responsibilities as Sponsor

Site File

As an aid to the conduct of your study we have provided a Site File that you may wish to use. As Sponsor of the study we are required to carry out audit of all project, and to conduct detailed monitoring visits for a proportion (approximately 10%) - The study Site File should help you ensure that you have the relevant documentation to assist in this process. If your project is selected for monitoring, we will contact you well in advance to arrange a suitable time.

Our responsibilities as Sponsor are defined within the Research Governance Framework for Health and Community Care. A summary of these, along with those of the Chief Investigator, is provided in the following table for your information.

RESPONSIBILITIES OF CHIEF INVESTIGATOR	NHSL RESPONSIBILITIES AS SPONSOR
Obtain relevant / appropriate Research Ethics opinion.	Assess adequateness of the independent, expert review.
Obtain NHSL Research Management Approval.	Ensure that the Chief/Principle Investigator has the necessary expertise, experience and education to conduct the study.
Ensure that the members of the research team have the necessary expertise, experience and education to perform their roles.	Provide a formal written agreement of sponsorship conditions, and notification of confirmation of the sponsorship role.
Ensure the necessary resources are available for the study.	Provide NHS indemnity to the Chief Investigator and research team.
Act in accordance with regulations set out by your professional body(s) and the conditions of your employment contract.	Provide mechanisms and processes to exploit any potential Intellectual Property.
Identify archiving arrangements at the study outset.	Project monitoring commensurate with risk.
Record and review significant developments that may affect the study, particularly those which put the safety of the individuals at risk or affect the scientific direction and report to the sponsor as appropriate.	Make available local, national and international guidelines, regulations and legislation governing research in the UK.
Record, report and review all untoward medical occurrence (adverse events or reactions) including classification of causality, seriousness and expectedness.	Provide ongoing advice and guidance to promote quality study management and conduct.
Notify R&D and appropriate REC of significant news, changes, amendments and modifications to the study.	Determine the acceptability of the archive arrangements proposed by the Chief Investigator and, if the archive facility becomes unsuitable, provide alternative arrangements.
Maintain a record of all incidents, providing an annual report to the sponsor.	Determine length of archive/retention period for essential study documents and subsequent destruction date
Inform REC and R&D of the study end.	
Maintain a log of archived documents and their location.	
Inform R&D of any publications arising from the study or dissemination of findings.	
Inform R&D of any potential Intellectual Property.	

Appendix 18

Spearman's rank correlations of integrative meaning with MCQ-30 subscales

	1	**2**	**3**	**4**	**5**	**6**
1. CSC						
2. NC						
3. CC						
4. NEG						
5. POS						
6. TOTAL						
7. Integrative Meaning	-.036	-.317	-.046	-.323	-.005	-.178

Note: MCQ-30 = Metacognitions-30; POS = positive beliefs about worry; NEG = negative beliefs about uncontrollability of thoughts and danger; CC= cognitive confidence; NC = need to control thoughts; CSC = cognitive self-consciousness.

Appendix 19

Mann-Whitney results with median (Interquartile range) for content of memories

Content	**Depressed Group (*n*=16)**	**Control Group (*n*=19)**	***p***
LTE: Death or serious injury/illness of someone else	0 (0-1)	0 (0-0)	.226
LTE: Serious accident/illness of self	0 (0-1)	0 (0-0)	.064
LTE: Physical assault to oneself	0 (0-0)	0 (0-0)	.202
LTE: Rape or sexual assault to self	0 (0-0)	0 (0-0)	.457
Total LTEs combined	2 (0.25-2)	0 (0-1)	.008*
Recreation	0 (0-0.75)	1 (0-1)	.008*
Relationship	1 (1-2.75)	2 (1-2)	.815
Achievement/mastery	0 (0-1)	1 (0-2)	.003*
Guilt/shame	0 (0-1)	0 (0-0)	.064
Drugs/alcohol	-	-	-
Events not classifiable	0.5 (0-2)	0 (0-1)	.143

*Note: * = indicates significance at $p < 0.05$*

Appendix 20

An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults

Abstract

Background: Self-defining memories (SDMs) are important to an individuals' sense of self but have received little research attention, particularly in older adults (OA). Of the small number of studies that have examined SDMs in OAs none have investigated SDMs in depressed OAs or assessed potential mechanisms that affect the recall of these memories.

Aims: This study will examine and describe the characteristics of depressed and non-depressed OAs SDMs along dimensions such as memory specificity and the participant's ability to derive meaning from their memories. Additionally the study aims to explore the underlying mechanisms of overgeneral memory by measuring cognitive avoidance and investigating the role of metacognition in meaning making ability.

Methods: Cross-sectional between groups study of depressed and non-depressed OAs. Participants will complete the Montreal Cognitive Assessment, Geriatric Depression Scale, Metacognitive Questionnaire-30, White Bear Suppression Inventory, Self-defining Memory Task and Self-defining Memory Rating Sheet.

Applications: This study will provide valuable insights into the characteristics and underlying mechanisms of OAs and depressed OAs' SDMs. This knowledge will inform the refinement of interventions for depressed OAs.

Word Count: 192

Introduction

The Nature of Autobiographical Memory and Self-defining Memories

Autobiographical memory (AM) refers to the aspect of human cognition that incorporates personal semantic information (facts and knowledge about the self) and episodic information (recollections of personal experiences) (Williams, Conway & Cohen, 2008). Conway and Pleydell-Pearce (2000) proposed the Self Memory System (SMS) model to characterise the relationship between AM and self-identity. The SMS consists of two dynamic structures: the 'knowledge base' and 'working self'. This model postulates that AMs are stored in a hierarchy based on the specificity of the memory. The highest level 'lifelong periods' consists of memories constituting periods of time (usually measured in days, weeks, months or years) which have precise start and end points (e.g. "when I lived in Glasgow"). The second level, 'general events' describes summaries of repeated types of events (e.g. "Friday night drinks at pub X"). The most detailed level, 'event-specific knowledge', comprises specific information about single events that are typically marked by rich visual images and sensory qualities (e.g. "Lisa's leaving night"). If the highest level of autobiographical information is activated, the search for a more detailed memory typically cascades down the hierarchy. This retrieval process is modulated by 'the working self', a concept similar to working memory (Baddeley, 1986), which is influenced by the goal state of the individual. The state of the working self affects what autobiographical information is stored and retrieved from the autobiographical knowledge base (Conway & Pleydell-Pearce, 2000). Self-defining memories (SDMs) are a subtype of AMs that contribute to and maintain self-concept. These memories have five particular attributes: high affective intensity, vividness, high levels of rehearsal, linkages to similar memories and connection to an enduring concern or resolved conflict (Singer & Salovey, 1993).

The Functions of AM and SDMs

AMs allow individuals to problem solve and regulate moods (Williams, Barnhofer, Crane, Hermans, Raes, Watkins & Dalgeish, 2007) and maintain social relationships (Alea and Bluck, 2003). Additionally these memories enable goal pursuit (Williams, Barnhofer, Crane, Hermans, Raes, Watkins & Dalgeish, 2007) and provide material for reflecting on the meaning of previous experiences (Singer, Rexhaj & Baddeley, 2007). Personal narrative and sense of self is interlocked with SDMs (McAdams, 1988). In healthy

functioning, an individual's sense of self and their memories coalesce into a coherent story; therefore sense of self is intimately linked to past experiences and the recall of these. Motivational factors, such as the psychological need to maintain a stable sense of self, influence how AMs are encoded and retrieved. The SMS model (Conway & Pleydell-Pearce, 2000) states that a person's sense of self is preserved by two simultaneous functions: adaptive correspondence and self-coherence. Adaptive correspondence refers to the need to encode memories that are consistent with reality while adaptive coherence refers to the need to maintain a stable representation of life experiences that is consistent with goals and values. Other factors affect the recall of AMs including emotional state (Matt, Vazquez & Campbell, 1992), cue type (Williams & Broadbent, 1986) and learned information processing habits (e.g. avoidance and truncated search) (Beevers et al, 1999). Another factor that may influence AM retrieval is an individual's capacity for metacognition, that is, the 'ability to reflect upon, understand and control ones learning' (p 460, Schraw, & Dennison, 1994). This capacity to think about ones thinking contributes to the development of a personal sense of identity (Blagov & Singer, 2004).

Implications of AM/SDM Disturbance

AMs are particularly important for the maintenance of a range of psychological disorders. Engagement in psychological therapy often requires the individual to recall and reflect on important past events, a process reliant on AMs. Depression can arise when individuals do not attain their desired goals, leading to rumination on memories which remind them of their failures, whereas individuals without depression retrieve memories that are pertinent to the attainment of goals (Singer & Salovey, 1993). Research has also shown that non-depressed individuals recall more positive memories to counteract negative mood states whereas depressed individuals recall mood congruent memories, which perpetuates depressive mood states (Matt, Vazquez & Campbell, 1992).

Furthermore, individuals with depression tend to suppress negative thoughts in an attempt to maintain psychological wellbeing (Beevers et al, 1999) and this avoidance will reduce access to SDMs. Through time, depression also affects the organisation and retrieval of memories and can lead to the development of a less specific retrieval style that becomes habitual and generalises across situations. Williams et al.'s (2007) review found eleven studies which demonstrated that adults with depression exhibit more overgeneral memories than controls. In order to make sense of AMs, and SDMs in particular, it is necessary for

an individual to take an observer (metacognitive) perspective on their experience and draw conclusions about the meaning of key experiences (Singer & Bluck, 2001). Distress can arise when individuals are not able to make sense of their experiences.

Disturbances of AM in OAs

Few studies have investigated the process of AM retrieval in OAs with depression. Phillips and Williams (1997) investigated AM specificity in OAs who had cognitive impairment and depression. They found that the sample gave omissions of general memories and found that increasing scores of cognitive impairment was associated with less specific memories. Birch and Davidson (2007) also found that depressed OAs provided more overgeneral memories than healthy controls. Singer, Rexhaj and Baddeley (2007) investigated SDMs in OAs and compared them to college students in the United States. The findings were consistent with previous memory and aging studies showing that OAs recalled fewer specific memories (Levine, Svoboda, Hay, Moscovitch & Winocur, 2002). But, they also found that OAs' SDMs were more positive and contained more integrative meaning (defined as 'an additional statement about the specific significance or meaning of the memory to the individual'; p. 15, Singer & Blagov, 2002). They found that 43% of OAs spontaneously derived meaning from their memories compared to 21% of college students. McLean (2008) compared SDMs of OAs to adolescent-adults and reported that OAs were more likely to retrieve memories that were more stable and contained thematic coherence. It is thought that depressed OAs will be more likely to recall memories of negative content and they will lack the ability to make meaning from their memories.

Gaps in our Understanding of AMs and SDMs in OAs

Previous studies have investigated AMs by using the Autobiographical Memory Test (Williams & Broadbent, 1986) and other derivatives of classic word cueing paradigms. Very few studies have investigated SDMs in OAs and no study has investigated SDMs in depressed OAs. Additionally there are no research findings of OAs SDMs in the UK. The presence of impairments in AM retrieval are being increasingly documented but there is a need to conduct studies that examine why these patterns emerge. There is a gap in the literature given the potentially crucial impact of SDMs on psychological adjustment and wellbeing.

The Current Study

The present study will generate data on the nature of SDMs in an OA population. Cognitive avoidance and metacognitive ability will be examined as potential factors that may influence SDM generation. Given that overgeneral AMs negatively affect problem solving ability, an individual's ability to engage in therapy and outcome, further research is warranted in this area. Additionally for successful aging to occur, the reminiscence literature provides numerous examples of the importance of OAs recalling past experiences to facilitate the maintenance of stable sense of self (Webster, Bohlmeijer & Westerhoff, 2010). Memory specificity in depressed adults can improve with memory specificity training (Neshat-Doost et al, 2013), which leads to reduction in depression symptomology; therefore this study has implications for treatment in OAs.

Aims

This research will explore memory specificity and integrative meaning of SDMs in depressed and non-depressed OAs. The underlying mechanisms of overgeneral memory will be explored by assessing the impact of cognitive avoidance on recall specificity and the role of metacognition on integrative meaning ability.

Hypotheses

5. Depressed older adults will generate more overgeneral self-defining memories than non-depressed older adults on the Self-defining Memory Task.
6. The interaction between depression and memory specificity will be mediated by avoidance, as measured by the White Bear Suppression Inventory.
7. The capacity to derive integrative meaning from autobiographical memories, as scored on the Self-defining Memory Task, will be lower in depressed older adults compared to non-depressed older adults.
8. The interaction between depression and integrative meaning will be mediated by metacognition, as measured by the self-conscious subscale in the Metacognitive Questionnaire-30.

Plan of Investigation

Participants

Forty-four participants will take part in the study. The depressed group will consist of 22 participants who fulfil the ICD-10 (International Statistical Classification of Diseases, 1992) criteria for major depressive disorder and score >10 on the Geriatric Depression Scale (GDS). The control group will comprise of 22 participants. They must score <11 on the GDS, and not had depression in the last five years. Groups will be matched for age and gender.

Inclusion criteria

- 65 or over
- Adequate command of the English language

Exclusion criteria

- Stroke
- Self reported or case note record of head Injury with loss of consciousness
- Dementia
- Epilepsy
- Heart attack
- Learning disability
- Alcohol or substance misuse (current or historical)
- A score of less than 26 on the Montreal Cognitive Assessment

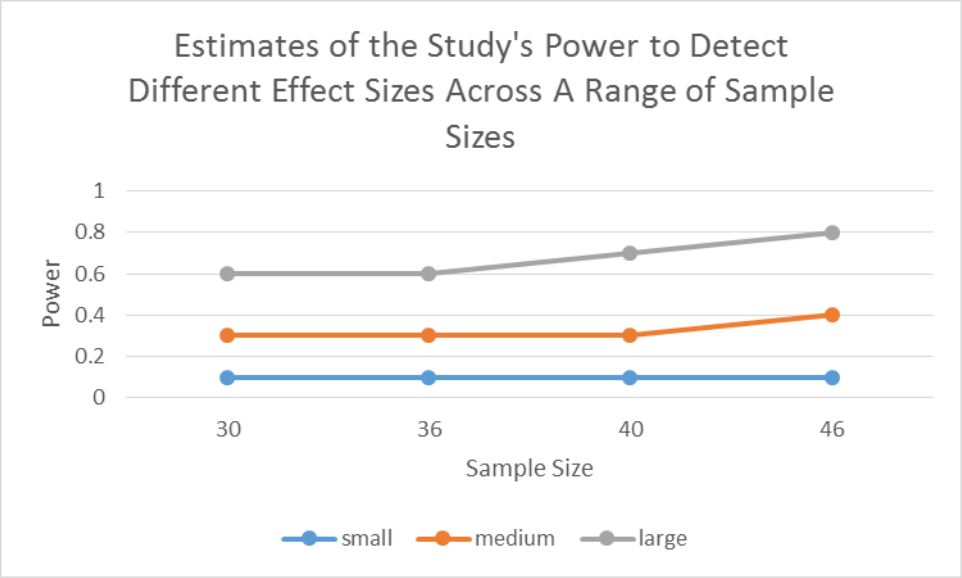
Recruitment Procedures

The control group will be recruited from University of the 3rd Age, Seniors Together, Forward at 50, Voluntary Action South Lanarkshire and libraries in Lanarkshire. The depressed group will be recruited through OA Community Mental Health Teams in Lanarkshire via Nurses, Psychiatrists and Psychologists/CBT Therapists within the Psychological Therapies for Older People Team.

Justification of sample size

No other study has compared depressed OAs SDMs to healthy OAs, therefore the effect size has been inferred from the Singer, Rexhaj and Baddeley's (2007) study. They found

reduced memory specificity of OAs (M =2.27, SD=1.79) compared to college students (M=3.69, SD=1.45). A power calculation using G Power, suggests in order to obtain adequate power given a large effect size a total of 44 participants will be needed (22 in each group). Eighty per cent power should give a 1.4 mean difference between the groups. Graph 1 demonstrates that given a large effect size suggested by Singer, Rexhaj and Baddeley's (2007), 44 participants would provide adequate power to detect the predicted main effect.



Graph.1. Estimates of the study's power to detect small, medium and large effect sizes for samples sizes ranging between 30 and 46 participants.

Measures

The Geriatric Depression Scale (GDS: Yesavage et al., 1983). The GDS is a 30-item self-report questionnaire measuring depressive symptoms in OAs. The GDS provides a total score of 30. Brink et al., (1981) found with a cut of 11 to indicate depression, the GDS yielded a 95% sensitivity rate and 84% specificity rate.

Montreal Cognitive Assessment (MoCA: Nasreddine et al, 2005). A neuropsychological screen for cognitive impairment providing a total score of 30 with a cut off of < 26 indicating impairment. The test assesses several cognitive domains including: visuospatial/executive function, naming, memory, attention, language, abstraction and orientation. A cut off of 26 yields a 90% sensitivity and 100% specificity rate.

White Bear Suppression Inventory (WBSI: Wegner & Zanakos, 1994). A 15 item questionnaire measuring thought suppression. The WBSI provides a total score of 75,

higher scores are indicative of greater thought suppression tendencies. The WBSI demonstrates good internal consistency (alphas range from .87 to .89), good test re test reliability and sound convergent validity.

Metacognitive Questionnaire-30 (MCQ-30: Wells, 2004). A 30 item self-report questionnaire measuring metacognitive beliefs and beliefs about worrying. The scale assesses five factors; cognitive confidence, positive beliefs about worry, cognitive self-consciousness, negative beliefs about uncontrollability of thoughts and danger, and beliefs about the need to control thoughts. This scale demonstrated good internal consistency and good convergent validity. Stability of the measure as assessed through test-retest reliability ranged from acceptable to good.

Self-defining Memory Task (SDMT) and Self-defining Memory Rating Sheet (SDMRS: Blagov & Singer, 2002). A task instructing participants to recall a SDM with the following attributes: vividness, emotionality, repetitive recall, importance and connection to other memories. An adaptation of the instructions used by Singer and Moffit, (1991-1992) will be used. The SDMRS asks the participant to state the age of the memory, rate the current impact of the memory on their affect, rate how vivid the memory is and the importance of the memory to their sense of self.

Design

Cross sectional between groups design.

Research Procedure

Control group - The researcher will present the research to University of the 3rd Age, Seniors Together, Voluntary Action South Lanarkshire and Forward at 50 groups in Lanarkshire. If a potential participant is interested, the researcher will give them the information sheet, take a contact detail and contact them following 24 hours. The researcher will also display posters in libraries in Lanarkshire with a contact number to contact the researcher.

Depressed group - The referrer will briefly tell a potential participant about the study and provide the information sheet. If the patient is interested, the patient can contact the researcher or at the next session the referrer will ask if they can be contacted by the researcher to discuss the study further on the phone or in person (if recruitment is not going well). If the participant takes part in the research, the researcher will gather

information on currently prescribed medication, physical health and diagnoses from the participants' medical records.

Both groups - The participants will be given an appointment. Participants will be asked to complete a demographic questionnaire and sign the consent form, they will then complete the GDS and MoCA. If the participant meets the inclusion criteria, they will then complete the SDMT and SDMRS for five memories. If not, participants will be thanked for taking an interest in the study however informed that they are unable to take part. The SDMT will be audio recorded and answers transcribed. All participants will be given a debrief sheet and asked if they would like to receive the results of the study, if so preferred contact information will be taken. Participants will then complete the MCQ-30 and WBSI whilst sat in the waiting room. The appointment is expected to last between 60 -100 minutes.

Scoring

The SDMs will be scored following the Singer and Blagov (2002) manual. Memory specificity will be scored as the primary outcome data. Additionally integrative meaning, vividness, importance of the memory, age of the memory, affect and content will also be recorded to provide further descriptions of the memories.

Vividness and importance of the memory will be rated from 'not at all' (0) to 'extremely' (6). Affect will be scored in this way for 12 emotions (happy, sad, angry, fearful, surprised, ashamed, disgusted, guilty, interested, embarrassed, contemptful and proud). Seven categories of content will be scored guided by the manual for Coding Events in Self Defining Memories (Thorne & McLean, 2001); life threatening events, recreation, relationship, achievement/mastery, guilt/shame, drug/alcohol and an 'events not classable'.

Data Analysis

Data will be stored within a Statistical Package for the Social Sciences (SPSS) for Windows version 19.0 (SPSS; Chicago, IL) on a Glasgow University laptop. In order to examine hypotheses 1 and 3 that depression impacts on memory specificity and integrative meaning between the two groups, a two sample t test will initially be computed. In order to examine hypothesis 2 and 4 that avoidance mediates the difference between specificity and metacognition mediates the difference between meaning ability, linear regression analyses will be conducted. The mediated analytic approach will be tested by Baron and Kenny's (1986) model. If the sample size is too small, the Preacher & Hayes (2004) boot

strapping method will be used to estimate population parameters. Following this, exploratory analyses will be conducted to explore the impact of different domains of metacognition on integrative ability. A Chi Square test will be computed to ascertain the frequencies of the range of affect (12 emotions) between the two groups. For multiple comparisons, adjustments of alpha will be made to minimise type 1 errors. The vividness and importance of the memories will be analysed by a t test or non parametric equivalent. Content and age of memories will be reported by descriptive statistics. Cohen Kappa analysis will be used to assess inter-rater reliability of the researcher and a rater blind to the groups (academic supervisor) for SDMT scores for 20% of the sample.

Settings and Equipment

The study will be conducted in the base (NHS Lanarkshire's community buildings or libraries).

Health and Safety Issues

Researcher and Participant Safety Issues

See researcher and participant safety form.

Ethical Issues

Ethical approval will be obtained from the West of Scotland Research Ethics Committee. Participants will be provided with an information sheet and required to sign a consent form. Participants will be given a debrief sheet providing contact details for extra support. If the participant wishes to receive the results of the study, contact information will be recorded on the demographic sheet and stored in a lockable briefcase until the data is transported to a locked cabinet in the researchers' base. Data from the measures will be anonymised and handled in accordance with Data Protection Act (1998) and NHS Lanarkshire policies. As stated in Appendix A, there could be potential distress to the participant whilst recalling memories however plans are in place to support this. Time is another burden identified; this will be outlined in the information sheet. The study has used a minimal number of measures to address the research questions to aid this. The risks/burdens identified are outweighed by the benefits of gathering knowledge in this research area.

Financial Issues

Sufficient funding will be available.

Timetable

Obtain Course Approval	**July 2014**
Obtain ethical approval	**September 2014**
Gather equipment, introduction and method completed	**September 2014**
Data collection and entering	**September 2014 – March 2015**
Data analysis	**April 2015**
Write up first draft	**July 2015**
Write up complete	**End of August 2015**
VIVA	**September 2015**
Written summary of results sent to participants that have requested this information	**September 2015**

Practical Applications

This study will provide valuable insights into the characteristics of OAs and depressed OAs' SDMs. It will also be useful to gather information about how these memories are processed. The study aims to increase knowledge in this area which can assist in interventions for treating depression in OAs.

UNIVERSITY OF GLASGOW/NHS SCOTLAND
DOCTORATE IN CLINICAL PSYCHOLOGY
HEALTH AND SAFETY FOR RESEARCHERS

1. Title of Project	An examination of self-defining memories, functional avoidance and metacognitive processes in depressed and non-depressed older adults
2. Trainee	Louise Sweeney
3. University Supervisor	Dr Hamish McLeod
4. Other Supervisor(s)	Dr Lisa Gadon
5. Local Lead Clinician	Dr Lisa Gadon
6. Participants: (age, group or sub-group, pre- or post-treatment, etc)	• 65 or over • Two groups; - Depressed - Non depressed
7. Procedures to be applied (eg, questionnaire, interview, etc)	• One session • All participants to complete the demographic information sheet and sign the consent form before completing the MoCA and GDS. If the participant meets the inclusion criteria for their group they then will complete the other measures: • Participants will then complete the self-defining memory task and self-defining memory rating sheet for 5 self-defining memories. • Participants will then complete the Metacognitive Questionnaire-30 and White Bear Suppression Inventory whilst sat in

	the waiting room.
8. Setting (where will procedures be carried out?) i) General	The procedure will be carried out in the community venue that the participant is recruited from (i.e. for depressed participants OACMHT or PTOP venues and for the non depressed group libraries in Lanarkshire). The researcher will become familiar with all health and safety procedures for the buildings that recruitment takes place. There will always be other staff on duty in these venues.
ii) Are home visits involved	No

9. Potential Risk Factors Identified	There is a chance that participants could become distressed whilst recalling memories. Researcher may be pulled into a clinician role to manage the distress which could be distressing for researcher. The non depressed group will be screened for depression and cognitive impairment. If this group scores highly on the depression questionnaire or the cognitive screen this might be distressing for the participant. If this was the case, it would be recommended for the participant to contact their G.P to get this investigated further. As the researcher will not be at base she will be required to transport patient information. Even though personal identifiable information will be reduced with the procedure, the researcher will still have the consent forms.

10. Actions to minimise risk (refer to 9)	Participants will be informed of potential risks and will be provided with a debrief sheet with useful contact numbers/web addresses for people to contact. Time will be given to offer reassurance to the participant if they do become distressed however participants will be directed to use contact numbers. Participants will be informed that participation is voluntary and that they can withdraw at any time. If a participant did become distressed the researcher would be able to discuss this in supervision with the field and academic supervisor. If the patient became aware they met the criteria for depression or cognitive impairment even though this could be distressing for the participant, if they are experiencing difficulties with their mood or cognition it would be useful to integrate them with services which could help with this. All questionnaires will be anonymised. For identifiable information (consent form and contact details if the participant wants the results) the researcher will use a lockable briefcase to transport information to the base where the information will be transferred to a lockable cabinet. During the recruitment process the researcher will be aware of local procedures for health and safety.

Trainee signature: .....Date: .....

University supervisor signature: ..... Date: .....

University of Glasgow | College of Medical, Veterinary & Life Sciences

RESEARCH EQUIPMENT, CONSUMABLES AND EXPENSES

Trainee Louise Sweeney……

Year of Course 2nd……. **Intake Year** 2012……..

Please complete the list below to the best of your ability:

Item	Details and Amount Required	Cost or Specify if to Request to Borrow from Department
Stationary	A4 Envelopes – 44	£1.87
Postage		
Photocopying and Laser Printing (includes cost of white paper)	Per person: SDMT- 1 sheet SDMRS – 5 sheets GDS – 1 sheet WBSI - 1 sheet MCQ-30 – 1 sheet Demographic sheet – 1 sheet Debrief – 1 sheet Information sheet – 5 sheets Consent form – 1 sheet Total sheets to photocopy: 18 Total 18x 44 = 792 MoCA- 1 sheet Sheet for clinicians – 2 sheets 2 x 20 copies = 40.	Paper = £5 5p x sheets total - 832= £42.7
Equipment and Software	Dictaphone and transcribing equipment	Able to borrow from Glasgow University.
Measures	SDMT- SDMRS- GDS- MoCA- WBSI- MCQ-30 -	Free Free Free Free Free Questionnaire available in a previously purchased book.
Miscellaneous	Room booking fee for Lanarkshire libraries £9 per hour. (1.5 hours x 22 participants). Room booking prices at different libraries vary from £6.20-£9. This calculation is based on the most expensive option and the longest session time to ensure funding.	£297
		TOTAL: £346.57

Trainee Signature…… … Date……

Supervisor's Signature …….. Date ……..