

THE ASSOCIATION BETWEEN LIFE ADVERSITY AND DEPRESSION IN  
OLDER ADULT LIFE

Hjördis Maguire Donoghue

Submitted in accordance with the requirements for the degree of  
Doctor of Clinical Psychology (D. Clin. Psychol.)  
The University of Leeds  
School of Medicine  
Academic Unit of Psychiatry and Behavioural Sciences

May 2014

The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

This copy has been supplied on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

© 2014 The University of Leeds and Hjördis Maguire Donoghue

The right of Hjördis Maguire Donoghue to be identified as Author of this work has been asserted by her in accordance with the Copyright, Designs and Patents Act 1988

## ACKNOWLEDGEMENTS

I'd like to thank my wonderful husband and parents for all their love and support during the process. I'd also like to dedicate the project to my late grandfather who was an inspiration to me and sadly passed away at the age of 93 during the project write up. Thanks to my supervisors Gemma and Allan for their knowledge, advice and encouragement, in particular to Gemma for remaining devoted to the project throughout two maternity leaves. I'd also like to thank York trials unit for allowing me to recruit through the CASPER / Plus trial, and especially to Helen for all the support with ethics and data access during this process. Special thanks to Tirril Harris for taking the time to train me on a one to one basis to use the LEDS measure, for supporting the LEDS rating process and for all her knowledge and wisdom in the area of life events and depression.

## ABSTRACT

This in-depth investigation into the nature and prevalence of adversity within late life involved a two phased study, employing questionnaire and interview measures with a mixed methods analysis.

The larger (n=960) PHQ-9 and LTE-Q study showed depression prevalence of 12% in older adults, who most commonly experienced adversity involving health and bereavement. Depressed participants reported significantly more recent adversity, a finding observed particularly in the early stages of older adult life and amongst women. Logistic regression showed adversity to be a significant predictor of depression, accounting for 1.8% of the variance in depression.

The smaller (n=19) LEDS study showed a significant prevalence of low threat difficulties across the sample, who also reported health, relationships and bereavement to be the most commonly experienced. Depressed participants were shown to report higher rates of marked difficulties and lower social emotional support than non-depressed participants, which may play a key role in the maintenance of late-life depression.

Although the LTE-Q was shown to be a crude measure, only capturing a portion of LEDS measured adversity, the general pattern of life event characteristics maps well onto the LEDS data. This was mirrored in the qualitative accounts of older adults who preferred the LEDS and considered it to capture adversity in depth.

Thematic analysis revealed themes around ‘self-redefinition,’ ‘being immortal,’ and ‘leaving in peace’ were pertinent to both adversity and coping in late life, which were experienced differently by depressed participants as ‘powerless in the face of reality,’ ‘threats to immortality’ and ‘leaving in disharmony.’

Further investigations are required to determine how adversity contributes to depressive experience in the elderly, in particular examining the roles of marked difficulties and social emotional support. Suggestions are made for psychological interventions to consider the social contexts of older adults, while facilitating the coping processes highlighted in the qualitative analysis.

## TABLE OF CONTENTS

ABSTRACT .....	4
TABLE OF CONTENTS .....	5
LIST OF TABLES .....	9
LIST OF FIGURES .....	10
ABBREVIATIONS .....	11
INTRODUCTION .....	12
Background .....	12
Literature review .....	14
Depression .....	14
Prevalence .....	14
Prevalence in older adults .....	15
Mechanisms .....	15
Adversity .....	16
Dimensions of adversity .....	17
Adversity and depression onset .....	17
Adversity and depression in older adults .....	19
Meaning of adversity .....	20
Off-time adversity .....	20
Transitions .....	20
Housing transitions .....	21
Employment transitions .....	21
Social transitions .....	22
Coping with adversity .....	22
Emotional support .....	22
Leisure .....	23
Coping styles .....	23
Inner strength .....	23
Vulnerabilities to depression following adversity .....	24
Cognitive styles .....	24
Personality variables .....	24
Childhood adversity .....	25
Lifetime cumulative adversity .....	25
Other variables in adversity research .....	26
Sociopolitical context .....	26
Biological bases .....	26
Cognition .....	27
Measuring adversity .....	27
Questionnaires .....	27
Life charts .....	28
Interview schedules .....	28
AIMS & HYPOTHESES .....	29
Quantitative Section .....	29
Aims .....	29
Overall .....	29

Phase 1 .....	29
Phase 2 .....	29
Hypotheses .....	29
Phase 1 .....	29
Phase 2 .....	30
Phase 2 Qualitative Section.....	30
Research Question.....	30
Aims .....	30
METHOD.....	30
Design .....	30
This research within the CASPER Trial context .....	31
Ethical clearance .....	31
Participants.....	31
Recruitment.....	31
Sample size calculation - phase 1.....	32
Sampling frame - phase 2.....	32
Measures .....	33
Patient health questionnaire - depression module (PHQ-9).....	33
List of threatening experiences questionnaire (LTE-Q).....	33
Life events and difficulties schedule (LEDS-2).....	33
Procedure.....	35
Phase 1 - questionnaires .....	35
Phase 2 – Training.....	35
Phase 2 - recruitment.....	35
Phase 2 - interviews .....	36
Analysis.....	37
Phase 1 .....	37
Phase 2 .....	38
RESULTS .....	41
Quantitative results: Phase 1 .....	41
Sample demographics .....	41
Depression prevalence .....	42
Depression severity .....	43
Depression characteristics.....	43
Life event characteristics.....	45
The association between life adversity and depression.....	47
The association between life adversity and depression across stages of older adult life .....	47
The association between life adversity and depression by gender.....	47
Regression model .....	49
Quantitative results: Phase 2 .....	51
Uptake rate .....	51
Sample Demographics .....	51
Sampling frame .....	53
LEDS life events .....	53
LEDS difficulties .....	53

Life events between the sampling frame groups.....	55
Social emotional support between the sampling frame groups.....	55
Comparing the LEDS and LTE-Q data for phase 2 participants .....	56
Qualitative Results: Phase 2.....	57
Meaning of adversity experienced in late-life.....	57
Redefining the self .....	57
Leaving in peace .....	61
Meanings of adversity linking to late-life depression .....	62
Threats to immortality.....	63
Leaving in disharmony.....	64
Powerless in the face of external reality .....	64
Coping with adversity in late-life.....	65
Redefining the self .....	65
Being immortal .....	70
Leaving in peace .....	71
Subjective experience of having adversity captured through different measures of adversity: LTE-Q and LEDS.....	72
LTE-Q explores and captures an overview of adversity.....	72
LEDS explores and captures adversity .....	74
LEDS preferred measure.....	75
DISCUSSION .....	75
Late-life depression.....	75
Prevalence .....	75
Characteristics.....	77
Adversity in late-life .....	78
Prevalence .....	78
Characteristics.....	79
Depression and adversity in late life.....	80
The association between adversity and depression.....	80
The characteristics of adversity and depression.....	82
Measures of adversity in late life .....	84
LTE-Q provides an overview but misses things .....	84
LEDS provides an in depth account.....	85
Adversity, depression and coping in late life .....	85
Redefining the self .....	85
Leaving in peace .....	89
Being immortal .....	91
Limitations .....	93
Design .....	93
Participants.....	93
Measures .....	94
Procedure.....	94
Analysis.....	95
Research implications .....	95
Clinical implications .....	96
Conclusion .....	98

REFERENCES..... 98  
APPENDIX..... 117  
Appendix 1. NHS REC ethical approval letter ..... 118  
Appendix 2. Patient Health Questionnaire - Depression Module (PHQ-9)..... 119  
Appendix 3. LTE-Q consent e-mail Prof. Brugha ..... 120  
Appendix 4. List of Threatening Experiences Questionnaire (LTE-Q)..... 121  
Appendix 5. Participant invitation letter ..... 122  
Appendix 6. Participant information sheet..... 123  
Appendix 7. Participant consent/decline form ..... 126  
Appendix 8. Table LTE-Q collapsed into LEDS ..... 127



## LIST OF TABLES

Table 1. Sampling Frame .....	32
Table 2. A table to show the prevalence of depression across the whole sample and subgroups of gender and age.....	42
Table 3. Severity of depression across the entire sample.....	43
Table 4. Counts and percentages of depressed and non-depressed participants by adversity, age and gender. Chi square statistics are provided. * indicates significant differences between categories.....	48
Table 5. A table to show the logistic regression coefficients for predictors of depression.....	50
Table 6. Table outlining demographic data from the phase 2 LEDS sample (n=19)	52
Table 7. Sampling frame showing number of participants agreeing to take part in interviews .....	53
Table 8. Proportion of participants specifically experiencing life event variables within each of the depressed and non-depressed groups (percentages and counts shown).....	55
Table 9. Proportion of participants specifically reporting social emotional support variables within each of the depressed and non-depressed groups (percentages and counts shown).....	56

## LIST OF FIGURES

Figure 1. Boxplot and whiskers to show the age range, median, upper and lower quartiles of responding participants .....	41
Figure 2. A stacked bar graph to show percentages of participant responses to individual items of the PHQ-9 .....	44
Figure 3. A graph to show percentage of older adults reporting life events overall by frequency.....	45
Figure 4. A graph to show the percentage of participants responding 'yes' to each individual item on the LTE-Q.....	46
Figure 5. Boxplot and whiskers to show the age range, median, upper and lower quartiles of interviewed participants .....	51
Figure 6. A pie chart to show the percentage of reported life events by LEDS classification.....	54
Figure 7. A pie chart to show the percentage of reported difficulties by LEDS classification.....	54
Figure 8. A stacked graph to show the percentage of phase 2 participants reporting at least one event within each life event category as measured by the LEDS and LTE-Q .....	56
Figure 9. Thematic map to show the meanings of adversity experienced in late life	58
Figure 10. Thematic map to show the meanings of adversity linking to late life depression.....	62
Figure 11. Thematic map to show how people cope with late-life adversity .....	66
Figure 12. A thematic map to show the subjective experience of having adversity captured through different measures of adversity, the LTE-Q and LEDS.....	72

## ABBREVIATIONS

**BA:** Behavioural Activation

**CASPER:** CollAborative care in Screen Positive EldeRs

**CBT:** Cognitive Behavioural Therapy

**DSM-IV:** Diagnostic and Statistical Manual of Mental Disorders

**IAPT:** Improving Access to Psychological Therapies

**ICD-10:** International Classification for Diseases

**LCA:** Lifetime Cumulative Adversity

**LEDS:** Life Events and Difficulties Schedule

**LTE-Q:** List of Threatening Experiences Questionnaire

**NICE:** National Institute of Clinical Excellence

**PHQ-9:** Patient Health Questionnaire - Depression Module

**PWPs:** Psychological Wellbeing Practitioners

## INTRODUCTION

### Background

There is a well established link in the literature between life adversity and depressive symptoms. Research shows high rates of depression in older adults, who are also known to experience many negative life events. This research forms an in-depth investigation into the nature and prevalence of adversity within an older adult sample. This is an area of particular interest, as the UK population is increasing and maturing in age, a trend set to become more significant as medical treatments advance and life expectancy increases. The proportion of over 65's in the UK is projected to rise from 16% in 2007 to over 23% by 2032 (Dunnell, 2007). Of this group, the over 85's make up the fastest growing demographic, set to represent 4% of the UK population by 2032. Depression is an additional area of interest, as the fourth leading cause of disease burden across the world (Ustun, Ayuso-Mateos, Chatterji, et al., 2004), the incidence of which is increasing and set to become the second leading cause of disease burden by 2020 (WHO, 2001). Prevalence rates of depression are reported at over 15% of adults over 65 (Carter, Moser & Kelly, 1999), with the impact affecting individuals, families, society and the economy (Whiteford, Degenhardt, Rehm, et al., 2013).

Healthcare costs of a maturing population with increasing depression rates are pertinent in the current financial climate. Between 2010 and 2011 the NHS invested £2.859 billion in older people's mental health services nationally (DoH, 2011), which comprised 2.7% of the total NHS budget. It is therefore paramount that we continue developing a greater understanding of this area to establish effective interventions. The findings of this research will provide an estimation of local depression prevalence rates in older adults and further the understanding of the life events commonly experienced in these stages of life. This may highlight areas which could be addressed specifically within therapy to improve wellbeing of older adults and their families. Although psychological therapy could be seen as an expensive method for intervening in a time of financial austerity, there is evidence that increased understanding and improved interventions may reduce public spending in the longer term (Knapp, 2012).

This principle has been the driving force behind the 'Improving Access to Psychological Therapies' (IAPT) implementation throughout the UK (Byng & Gask, 2009), offering interventions for common mental health problems based on a stepped-care model.

This model aims to offer the least intrusive and most effective interventions initially, before increasing intervention intensity according to non-responsiveness, deterioration or patient choice (NICE, 2009). A particular benefit of such an approach is the cost-effectiveness of brief Cognitive Behavioural interventions delivered by 'Psychological Wellbeing Practitioners' (PWPs). This guided self-help approach may involve elements of psycho-education, sleep hygiene, problem solving, behavioural activation and cognitive restructuring for negative automatic thoughts (Richards & Whyte, 2009), shown to be effective in reducing depressive symptoms within an adult population (Lejuez, Hopko, LePage, 2001; Neimeyer, Kazantzis, Kassler, 2008).

Local research is currently investigating the use of brief interventions for depression in older adults. CASPER/PLUS is a cohort study and randomised controlled trial looking at the effectiveness of collaborative care with behavioural activation for both sub-threshold depression (CASPER) and clinical depression (CASPER PLUS) in older adults. Collaborative care involves a patient-centred, psycho-social package of care which facilitates liaison between the patient, GP and case manager (PWPs). The behavioural activation (BA) techniques are delivered by the case manager, and involve gradually increasing levels of behavioural activity, targeting avoidance and increasing pleasurable activity. BA is known to be effective in reducing depression in working age adults (Ekers, Richards & Gilbody, 2008), and was chosen for use in CASPER/PLUS as depression is common in older adults, and often considered an inevitable consequence of the ageing process. The hope is for BA to be an effective intervention for reducing depression in this age group also. CASPER/PLUS is the largest ever trial of its kind in the UK, covering four geographical areas including Leeds, York, Durham, Newcastle and their surrounding areas. CASPER/PLUS is led by Professor Simon Gilbody at The University of York and funded by the Health Technology Assessment (HTA) Programme. For further information about the trial (ISRCTN 02202951) please see the website at:

<http://www.york.ac.uk/healthsciences/research/mental-health/projects/casper/>.

This research ran as a sub-study within the recruitment of the CASPER/PLUS trial. This trial offered the ability to access a large population of older adults who were already being asked about depressive experience as part of the trial's baseline measures. This research extended the CASPER baseline measures to also enquire about the experience of late-life adversity, through a brief checklist measure. Although this targeted a large sample of older adults, the in-depth understanding of any association between adversity and

depression is not possible through the use of checklist measures. In line with this, a smaller portion of participants were additionally invited to engage in more in-depth conversations about the association between adversity and depression in later life through structured interviews, which would not have been feasible with the larger trial sample.

#### Literature review

The literature review was carried out using the electronic search tool ISI Web of Knowledge. The *title* search was carried out following selection of ‘all databases,’ with terms ‘Depressi\*’, ‘Older adult\*’ and ‘Life event\*’ combined using the term AND. This initial search yielded 37 articles, which were added to through the substitution of ‘Life event\*’ for ‘Life Difficult\*’, ‘Life adversity’ and ‘Adversity’, plus an additional title search combining ‘Adversity’ and ‘Depressi\*’, without the constraint of age. Further articles were found through citation and reference links, selected searches within publications (i.e. *Gerontologist*), and correspondence with specialists in the field. Various exclusion criteria were employed including the focus on specific disorders other than depression (i.e. PTSD, ADHD), purely related to childhood adversity, duplicate papers, and non-English language articles. This resulted in 73 articles for initial review.

#### Depression

##### *Prevalence*

Depression is the most common mental health problem (Whiteford et al., 2013), characterised by a state of low mood, in which life appears bleak and its challenges overwhelming. The impact of depression on life is often severe (Hirschfeld, Keller, Panico, et al., 1997), as the mood-state resonates through social interactions and impairs functioning in daily life. Classification systems including the **ICD-10** (WHO, 1992) and **DSM-IV** (APA, 1994) provide agreed diagnostic criteria for depression, and have been useful in providing a shared understanding, aiding communication between clinicians and improving treatment effectiveness (Gruenberg, Goldstein, & Pincus, 2005). Depression diagnosis, according to both DSM-IV and ICD-10, involves a period greater than two weeks marked by either depressed mood and/or loss of interest, which causes distress and impairment in functioning, plus four other depressive symptoms (i.e. changes in appetite, weight, sleep, energy, agitation, concentration, activity, confidence, feelings of worthlessness, guilt, pessimistic about the future, self-harm or suicidal thoughts or acts).

### *Prevalence in older adults*

In the UK an estimated 15% of adults over 65 experience symptoms of depression (Carter et al., 1999), a prevalence which has been reported up to 21% in other parts of the world (Hermans & Evinghaus, 2012). There has, however, been some debate in the literature about prevalence rates. American research suggests as we age the number of individual depressive symptoms increases, while the prevalence of diagnosed depression decreases (Kennedy, 1996). Australian research further suggests the incidence of diagnosed depression decreases before the age of seventy, before increasing thereafter (Henderson, Korten & Jacomb, 1997). Measurement of depression varies across studies (through GP diagnosis, structured interview or checklist measures) and over contexts (hospital or community) making interpretation of results difficult. Co-morbidity with other illnesses is also common in older adults, which may lead to misattribution of symptoms to other disorders (Ames, 2001). Furthermore, there is some debate about the suitability of diagnostic classifications such as the ICD and DSM for use with older adults (Stansfeld & Rasul, 2007). Diagnostic criteria may overestimate prevalence of depression in older adults, for example those who are not depressed but physically unwell, may falsely fulfil many somatic symptoms of depression (Kennedy, 1996). Alternatively prevalence may be underestimated, as depression in older adults might involve additional somatic symptoms not fully accounted for by diagnostic criteria used (Birrer & Vemuri, 2004).

We currently know little about how prevalence rates and severity of depressive symptoms vary across the stages of older adult life within the UK, which is explored in this research.

### *Mechanisms*

It is now accepted that the aetiology of depression is associated with a variety of complex, interacting factors. There is some evidence for a genetic component as indicated through family, twin and adoption studies, which show higher incidences of depression in people with depressed relatives (Heim & Binder, 2012). Neurotransmitters are also implicated, in particular deficits in serotonin (Wilhelm, Mitchell, Niven, et al., 2006), which are targeted through the antidepressant prescriptions of selective serotonin reuptake inhibitors (Burmeister, McInnis & Zöllner, 2008). Negative life events such as bereavement and more ongoing chronic difficulties such as marital tension are also linked to depression onset (Brown & Harris, 1978a), as are interpersonal styles for relating to people such as dependency or reassurance seeking (Eberhart & Hammen, 2010).

Beck's Cognitive-Behavioural Theory of depression focuses mainly on the role of thought processes (Beck, Rush, Shaw, et al., 1979; see also Clark & Beck, 1999). One such example outlined by Beck et al. (1979) is the *negative cognitive triad*; negative views of oneself, the world/experiences and the future. This refers to the content of 'negative automatic thoughts' (NATs), or habitual and recurring appraisals of situations or events (Kumari & Blackburn, 1992). This links to themes of *helplessness* - a patient's perception they have no control over their environment, and *hopelessness* - a negative view of the future. The theme of *loss* is also connected to depression, originally by Freud (1939), and more latterly Bowlby (1980).

In addition to the thinking styles outlined, behavioural changes in depression are also thought to maintain the vicious cycle (Jacobsen, Dobson, Traux, et al., 1996). Based on the behavioural analytic approach and operant conditioning principles, reduced positive reinforcement and increased negative reinforcement are seen as central to maintaining depressive symptoms (Ferster, 1973). For example, patients may behave in certain ways to initially alleviate their symptoms (negative reinforcement) for example through withdrawal, avoidance or rumination, but these acts then contribute to less opportunities to engage in valued, meaningful activity, increasing the depression cycle (Houghton, Curran & Saxon, 2008). These principles also underpin BA techniques, by promoting engagement in active behaviours such as exercise or social activities (positive reinforcement), providing patients with opportunities to boost mood, self-esteem, confidence, and thus decreasing the depression cycle.

#### Adversity

There are well documented links in the literature between life adversity, psychological distress and physical illness. Life adversity can be viewed within the stress paradigm, acting as a stressor which puts demands on the individual's resources, requires adaptation, and acts as a catalyst for the onset of psychological and physical health problems (Creed, 1985). In the context of this research *life adversity* is used as an umbrella term to encompass the life events, difficulties and hassles of everyday life. Within this term *life events* are defined as discrete episodes of adversity such as a bereavement, *difficulties* are defined as ongoing adverse situations such as marital tension or financial problems, and *hassles* as trivial events or difficulties in daily life such as frustration with housework.



Life adversity, in particular life events, have been widely documented in the literature as associated with the onset of psychological problems, and are estimated to account for around a third of onsets of psychiatric disorders (Brown & Harris, 1978a; Dohrenwend, 2006). Significant progress has been made in establishing the links between adversity and depression by the Bedford College Group led by Tirril Harris and George Brown in London (see Craig, 1996 for a review). This seminal work has hugely contributed to understanding the role of adversity in the development of depression, and has led to the development of the LEADS interview schedule, which is further outlined later in the literature review (Interview schedules) and in the method section (Life events and difficulties schedule (LEADS-2)).

#### *Dimensions of adversity*

Research has established life events connected to *threat* or *danger* are more readily associated with onset of anxiety, while *humiliation* or *loss* events are more readily associated with onset of depression (Surtees, 1997; Kendler Hetteema, Butera, et al., 2003; Sandin, Chorot, Santed, et al., 2004). The theme of loss encompasses both straightforward loss concepts; redundancy, bereavement, plus the more complex loss issues; purpose, status, role, cherished idea (Finlay-Jones & Brown, 1981). These categories are termed 'dimensions' of adversity, and research has begun to focus further into dimensions of adversity which are associated with distress in various population groups. For example, daily hassles characterised by *burdensomeness* are found to be important protagonists to antenatal distress (Traviss, Meer, West, et al., 2012), while life difficulties characterised by *dilemmas* are found significant to the onset of chronic fatigue syndrome (Hatcher & House, 2003). To the author's knowledge there is no evidence of an established dimension of life adversity which links to depression onset specifically in older adults.

#### *Adversity and depression onset*

Existing research has suggested a causal link between adversity and depression onset, through carefully dating the onset of depression and examining adversity both before (to identify any provoking agents) and after this date. Research has consistently shown a rise in incidents of adversity in the 6 months prior to onset (Brown & Harris, 1978a; Bebbington et al., 1988). The temporal relationship has been explored further, showing a progressive decay over time in the depresso-genic effect of adversity (Surtees & Wainwright, 1999).

There has also been some debate about the process of depression onset following adversity, in particular whether this involves a *threshold* or *additive* effect. Goodyer &

Altham (1991) have discussed this in relation to depression in children following exit events (permanent losses of a person from the child's social field). The threshold of 2 exit events has been observed, below which children were more able to cope, but above which significantly more vulnerable to depression onset. Alternatively evidence has suggested an additive effect may occur whereby each subsequent exit event increased the likelihood of depression onset. Subsequent research in antenatal depression has found evidence for an additive negative impact of daily hassles on depressive symptoms (Traviss et al., 2012).

This 'causal' relationship is far from straightforward, however. The majority of adverse life events (even the most severe) are not followed by depression onset, suggesting individual vulnerabilities to depression following life events (Craig, 1996), including the personal meaning of life events (Fridja, 1986), contextual threat value, or potential low self-esteem (Brown & Harris, 1978a). Interestingly, the adversity-depression association is found to be weaker in the most severely depressed (hospitalized) patients, thought to indicate a greater role of biological factors in this group (Bebbington & Guffin, 1989). It is also important not to ignore the possibility that people with depression expose themselves to more adverse situations - the issue of reverse causality. For example, depressive symptoms may cause a burden for family and friends, elicit criticism and provoke the depletion of social resources for a depressed individual (Moos, Cronkite & Moos, 1998). In the same way that many interpersonal life-events and difficulties may be precipitated by depression. The distinction is between depression provoking the event (*depresso-genic events*) as opposed to the event provoking depression (*evento-genic depression*). The causal role may be even more complex, however, in the form of a positive feedback model. This suggests events may provoke depression, which provokes further events, which consequently provokes more severe depression (Tennant, Bebbington, & Hurry, 1981).

Structured questionnaires have been found to be particularly limited in addressing the issue of causality. In particular, the Social Readjustment Rating Scale (Holmes & Rahe, 1967) is shown to contain 29 of its 43 items as potentially symptoms of illness (Dohrenwend & Dohrenwend, 1978). This undermines any claims made about the causal role of life events identified through this measure and depression. Work has been done in attempt to address the issue of causality through use of interviews such as the LEDS (Brown & Harris, 1978a). Firstly, time is taken to carefully date events to identify those which precede depression onset. Secondly, the degree of independence an event has to the presence of depression (or another hypothetical disorder) is examined and rated as logically independent (beyond the

subject's control – partner gets cancer), possibly independent (no evidence of subject's influence – partner decides to take a job working away), and dependent (might be related to depression – partner has an affair and leaves following subject's withdrawal and lack of intimacy). Only those events which are logically and possibly independent are analyzed as being potential provoking agents of depression.

#### *Adversity and depression course*

The impact of adversity on the course of depression has also been studied. Research across the UK using in depth LEDS interviews has shown positive life events (those neutralising the threat of previous adversity or signaling a fresh start) are linked to greater remission rates from depression (Harris, Brown, & Robinson, 1999). Conversely, similar research has also shown the chronicity of depression in women is substantially influenced by the presence of interpersonal difficulties, in particular involving a child, partner or ex-partner (Brown, Harris, Hepworth, et al., 1994). Prospective research across the UK has also used LEDS interviews to show remission rates for depression are consistently lower in patients who have more aversive contexts (Brown, Harris, Kendrick, et al., 2010). In this study, aversive contexts were defined as the experience of interpersonal difficulties, or life events after depression onset. Adversity was shown to have a maintaining role in depression. Interestingly, this finding remained irrespective of treatment interventions (SSRI or SSRI plus supportive care) provided as part of the RCT, which points to the importance of socially focused interventions for people with depression living in adverse contexts.

#### *Adversity and depression in older adults*

Several studies have investigated the most commonly experienced types of adversity in older adult life, thought to include; personal illness, loneliness, bereavement, (Prince, Harwood, Blizard, et al., 1997; Hardy, Concato, & Gill, 2002; Maschi, Morgen, Zgboa, et al. 2011), diminished social relationships, loss of purpose in life (Kaji, Mishima, Kitamura, et al., 2010) forced change of residence, major negative revelations (Murphy, 1982), divorce of children (Grimby & Svanborg, 1996), loss of mobility and leisure activities (Hermans & Evenhuis, 2012). Negative life difficulties are also identified in areas of health, housing and marital problems (Murphy, 1982).

Experiences of adversity have been associated with depression in older adulthood across several countries, for example; England (Murphy, 1982; Norris & Murrell, 1987), Sweden (Grimby & Svanborg, 1996), Holland (Hermans & Evenhuis, 2012), Japan (Kaji et al., 2010) and America (Norris & Murrell, 1987). Prospective longitudinal research has

suggested that more stressful experiences of adversity are associated with increased severity of depressive symptoms (Sale, Gignac, & Hawker, 2008). Other research has suggested the frequency of daily hassles may be a stronger correlate of wellbeing than frequency of major life events in older adults (Landreville & Vezina, 1992), although this research was based on subjective questionnaire ratings of hassles and did not involve a specific depression measure.

The adversity - depression association in older adulthood has also been linked to reduced life satisfaction (Krause et al. 2004), a decline in perceived control (Cairney & Krause, 2008) and functional decline or disability (Hardy et al., 2002), which may make older adults more vulnerable to the negative effects of adversity.

The research exploring adversity and depression in older adults has been limited in the lack of standardised in-depth interview measures used (with the exception of early works by Murphy, 1982; Davies, 1994a; Davies, 1994b). Many of the research studies have used either brief questionnaire measures (Norris & Murrell, 1987; Sale et al., 2008;) or crude unvalidated measures over short time intervals (Kaji et al., 2010), which suggests a need for a more current and in-depth investigation of the area.

### Meaning of adversity

#### *Off-time adversity*

The way older adults make sense of, and respond to life adversity also links to the experience of depression. Theory suggests that episodes of adversity may be easier to bear (and less likely to lead to depression) if they are expected within the developmental stage of life, for example bereavement of a very elderly and frail relative may be easier to bear than that of a young child (McLanahan & Sorensen, 1984; Goodman et al., 1991). The impact of adversity is generally experienced as more negative when events are less common within the developmental stage of life, or described as 'off-time' events (McLanahan & Sorensen, 1984). This finding was linked to older adult's prior rehearsal of events expected at their stage of life, and sense of continuity within their life cycle.

### Transitions

Types of adversity involving transitions, or the process of change and adjustment have been found to be particularly difficult for older adults (Orrell & Bebbington, 1995), and associated with the onset of mental health problems. Transitions in older adult life involving housing, employment and social areas will be discussed below.

### *Housing transitions*

Adversity involving changes in routines or environment (Orrell & Bebbington, 1995; Orrell & Bebbington, 1998) are linked to poor mental health in older adults, in particular the process of housing relocation (Anthony Proctor, Silverman, et al., 1987). Housing relocations become less frequent or ‘off-time’ as we age, and involuntary relocations are shown to be associated with decreased life satisfaction in men (McLanahan & Sorensen, 1984). Although subsequent longitudinal work has found a lack of association between relocation transitions and depression (Kramer & Lambert, 1999), the potential reasons behind relocation transitions (i.e. voluntary, involuntary) were not taken into account in the analysis of this study, which brings into question the reliability of the finding.

### *Employment transitions*

Although employment transitions after the age of retirement (65 years) are described as an ‘on-time’ event, they are also found to be associated with mental health decline (Carmichael, Hulme & Porcellato, 2013a; b), especially when work has been a self-defining aspect of life. This can be illustrated through the finding that women differ in ratings of life satisfaction following employment transitions, according to their parental status (McLanahan & Sorensen, 1984). This is possibly as work becomes a less self-defining feature through motherhood. Retirement is commonly linked with reduced income and loss of status (Murphy, 1982), which begins to explain the links with depressive symptoms in post-retirement years. Longitudinal research has found employment transitions involving involuntary job losses show a particular link with depression (Price, Choi & Vinokur, 2002), with critical mediating mechanisms identified as financial strain and personal control. Other research has examined the impact of retirement on identity, whereby people are motivated to keep busy due to societal perceptions of retirement (Schaie, 1992).

Recent LEDS research has additionally found a gender difference in the *employment-entrapment* dimension, which is characterised by the entrapping nature of unemployment. Within this dimension women are more likely to be depressed if they are unemployed and living in social housing, while men are more likely to be depressed if they are unemployed and over the age of 50, with associated health conditions (Brown et al., 2010). This research highlighted the role of ongoing handicapping physical conditions in the elderly, plus the importance of social situations entrapping a person in highly aversive circumstances.

### *Social transitions*

Social support deficits and loneliness are shown to be predictors of depression in old age (Prince et al., 1997), often due to declining health and mobility and increased mortality rates. Longitudinal prospective research has shown care-giving as a life course transition linked to depression. Husbands who assumed care-giving roles during the research were more likely to report increased depression and decreased happiness (Kramer & Lambert, 1999). This finding has been linked to the significant role changes within a household following the transition to a marital-carer, reductions in social integration and changes in the nature of marital relationships. Social transitions which may also be prominent in older adulthood include the advent of becoming a grandparent, the associated impact on the family relationships, and also the impact of marital breakdowns both concerned with the self and close family members. Retirement may also constitute a social transition in terms of reduced interaction with work colleagues, and potential increased interaction with the partner / spouse.

### *Coping with adversity*

Some older adults seem better able to cope, or have the ability to maintain psychosocial function in the face of adversity, leading them to be more protected against depression following episodes of life adversity (Murrell & Norris, 1984; Norris & Murrell, 1984). The ability to cope, sometimes referred to as resilience, is not considered a static variable, but may change for people over time and between episodes of adversity. For older adults, coping has been suggested to involve factors such as emotional support, leisure participation, coping styles and inner strength, as discussed below.

### *Emotional support*

Having good networks of people who are emotionally supportive (Murrell & Norris, 1984; Prince et al., 1997; Donnelly & Hinterlong, 2009), an immediate confidant and a capacity for closeness with others are all found to help reduce the incidence of depression following adversity in older adults (Murphy, 1982). Although this finding is not replicated in all research (i.e. La Greca, 1988), one of the key methodological distinctions is between purely social support (having people within a social network) and specifically emotional support (having people within our networks to support us emotionally), the latter linking with resilience as described here. Further Japanese research has found social activities had a significant role in the association between negative life events and depression (Katsumata, Arai, Ishida, et al., 2012). The most significant variable in this relationship was contact with

family and friends, followed by community involvement. The role of emotional support has been linked in several studies to increased self-esteem, which in combination are thought to improve coping (Brown & Harris, 1978a; Murrell & Norris, 1984; Murrell, Meeks & Walker, 1991).

### *Leisure*

Greater participation in leisure activities has been linked to better coping and less stress following older adult's experiences of widowhood (Patterson, 1996). In particular the experience of volunteering has shown to be associated with improved wellbeing following widowhood (Donnelley & Hinterlong, 2009), a process which may involve both the roles of purpose and social support. Beneficial effects on coping with stress have also been found for participation in religious activities (Hamilton, Sandelowski, Moore, et al., 2012), through which older adults described feeling comforted, strengthened, able to endure and find peace within. It must also be acknowledged that the ability to participate in leisure activities is dependent on older adult's health status, which is known to decline with age. In addition, research has shown life events, particularly interpersonal losses have a negative impact on adherence to exercise programmes in women (Wilcox & King, 2004).

### *Coping styles*

Early cross sectional research using questionnaires showed decision making skills are a significant variable in the perception of both positive and negative life events (Guttman, 1978). This research showed older adults with an *action taking* coping style (characterised by behaviours which lead to a change following decisions) showed higher rated wellbeing in the face of negative life events. More recent research has supported this finding for older adults with chronic stressors, using a similar concept termed *approach coping* (i.e. seeking information and negotiating) compared with *avoidance coping* (i.e. ignoring and escapism). Within this, older adults who favoured avoidance coping were more likely to be depressed than those who favoured approach coping (Moos, Brennan, Schutte, et al., 2006), and these coping styles were found to remain stable over time.

### *Inner strength*

Much of the literature around ageing could be criticised for being inherently negative, focussing on measures of illnesses (depression rates), while observing the assumed declines and despairs of older adulthood. Carol Ryff has argued for a more positive psychological perspective in the ageing literature, focusing on growth and development into older adulthood. Several dimensions of psychological wellbeing have been identified though

her work which include self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth (Ryff, 1989a; Ryff, 1989b). These dimensions of wellbeing have been discussed within the lifespan developmental literature, to involve concepts such as ego integrity Vs despair (Erickson, 1959), self-actualisation (Maslow, 1968) and promoting an internal locus of evaluation (Neugarten, 1968). The call for an increase in positive psychological literature has to a degree been observed over the last 20 years. The ability for personal growth following life negative life events has been linked to more resilient outcomes (Hardy et al., 2002), as has the degree of life satisfaction (Krause, 2004). Both of these factors could be considered within Erikson's psychosocial stages of development, whereby the crisis of integrity Vs despair influences the associated experiences of peacefulness or psychopathology in older adulthood. Additionally, scores on questionnaires of resilience, coherence, purpose and self-transcendence have been found to correlate highly with each other, suggesting they may represent a central concept of inner strength, which is additionally shown to correlate with better mental health outcomes for older women (Nygren, Alex, Jonsen, et al., 2005).

#### Vulnerabilities to depression following adversity

##### *Cognitive styles*

The way in which older adults remember episodes of life adversity, for example reminiscing in a negative way about themselves in their past (bitterness revival) has been shown to be linked to depressive experience (Korte, Bohlmeijer, Westerhof, et al., 2011). Further research has shown vulnerabilities to stress and weaker coping ability following adversity in older adults is linked to existential regret (Reker, 2008). In particular a part of existential regret which involves the inner struggle around missed opportunities from the past, and associated intrusive thoughts.

##### *Personality variables*

Personality traits impact on the onset and course of depression by influencing an individual's perceptions, reactions and coping strategies to adversity of any kind. Neuroticism is a personality trait which involves aversive mood states such as anger and anxiety, irrationality, poor coping strategies and impulse control skills. Cross-sectional research has shown evidence for the combination of neuroticism and adversity as a potential provoking agent to emotional distress (Malyszczak, 2007). Longitudinal research into daily hassles has additionally found people with high levels of neuroticism display an exacerbated



adversity - depression link. Ergo, the effect of hassles appears more significant in the development of depression for neurotic participants (Hutchinson & Williams, 2007).

Research has also examined other factors involved in this association, and has found participants who show higher levels of neuroticism showed less stability in their memories for emotions over time (Piazza & Charles, 2004). The role of personality in the adversity-depression relationship is complex, due to an individual's agency within their social context. It could be argued that people with traits of neuroticism may exert influences upon their environment, which lead to an increase in aversive experiences, such as interpersonal difficulties.

Individuals with low self-esteem have also been shown to be particularly vulnerable to depression following adversity, and in particular to the recurrence of depressive episodes (Surtees, 1997). This is also a complex vulnerability factor due to the close association with emotional support (Brown & Harris, 1978a).

#### *Childhood adversity*

In the Bedford College group's research, loss of a mother before the age of 11 was found to be a significant vulnerability factor for adult depression (Brown & Harris, 1978a). Furthermore, the experience of multiple exit events, the permanent loss of someone from your social field, in childhood is associated with an increased association with depression or anxiety (Goodyer & Altham, 1991). Although these findings have not been specifically replicated in older adult research, loss of a parent in childhood has been associated with vulnerability to physical decline following recent stressful life events (Krause et al., 1998). Crucially, this association was only observed when the life events were linked to highly valued roles.

#### *Lifetime cumulative adversity*

The cumulative impact of adversity over a person's lifetime has also been linked to depression. Large scale research within the SHARE project (Survey of Health, Ageing & Retirement Europe) has shown lifetime cumulative adversity (LCA) is associated with a decline in mental health, marked by increased depression and poorer quality of life (Shrira, 2012). Despite this, the modest effects overall were taken to illustrate the remarkable resilience among older adults to LCA. Further research within the SHARE project has focussed on the types of LCA which associate more strongly with depression, in particular finding self-orientated LCA has an association with depression, whereas other-orientated LCA does not (Shmotkin & Litwin, 2009).

Prior experiences of adversity over decades of life may also contribute to resilience following some types of late-life adversity (Krause, 1998). This may be due to the cumulative impact of adversity on the development of better abilities to cope (Maschi et al., 2011), for example providing memories of past coping strategies which were more or less helpful. This finding was not replicated in recent research in antenatal mental health, which found an additive impact of daily hassles on depression (Traviss et al., 2012).

#### Other variables in adversity research

Several variables are additionally shown to impact on the relationship between adversity and depression. These include factors such as socioeconomic status, biological bases, cognition, as outlined below.

##### *Sociopolitical context*

A variable shown to act on both adversity and depression individually is the sociopolitical context. A meta-analysis of 60 studies has shown irrefutably people from lower socioeconomic groups are found to experience higher rates of depression than those in higher socioeconomic groups (Lorant, Deliege, & Eaton, 2003). Negative life events and difficulties are also more common in lower socioeconomic groups, for example ill health, financial hardship and poor living conditions (Weich & Lewis, 1998). Social selection theory suggests people develop depression and begin to slide down the social scale as a consequence of their illness (i.e. due to unemployment), while social causation theory implies the exposure to social adversities (common in lower socioeconomic groups) contributes to the development of the disorder (Stansfeld & Rasul, 2007).

##### *Biological bases*

Biological factors have been shown to play an important role in the relationship between life adversity and depression, strengthening or weakening this association. Deficits in serotonin (5HT) are implicated in depression (Wilhelm et al., 2006), and research has examined different variations (polymorphisms) within the gene for this serotonin transporter (5-HTT). Evidence suggests that gene-environment interactions occur, whereby depression is more likely to follow episodes of life adversity for individuals homozygous on this gene (Caspi, Sugden, Moffitt, et al., 2003; Taylor, Way, Welch, 2006). Evidence has also been found to suggest the hypothalamic-pituitary-adrenal (HPA) axis is sensitive to stress following life events (Strickland, Deakin, Percival, et al., 2002) although no firm evidence was found for the mediating role in depression. Further research combined the HPA axis

with other biological factors such as cardiovascular activity and glucose metabolism into a measure of allostatic load (AL). This research found differential effects across stages of older adult life, with younger participants showing lower AL associated with more positive social experiences, while for older participants lower AL scores were associated with better emotional support and social integration (Seeman, Singer, Ryff, et al., 2002). This evidence suggests social experiences affect biological systems, which in turn may impact on depression.

### *Cognition*

It is also widely accepted that healthy ageing profoundly impacts cognition (Smith & Baltes, 1993; Peters, 2006; Ballesteros, Nillson & Lemaire, 2009), with long-term memory retrieval known to be reliably affected (Craik, 1991). As the sample of interest is the over 65s, it is important to screen for symptoms of cognitive impairment (MCI), which becomes significantly more common as we age (Katz, Lipton, Hall, et al., 2012), and may impact on the participants ability to recall episodes of adversity in the reporting period.

### Measuring adversity

The use of three measures of life adversity; life charts, questionnaires and interviews will be outlined below.

### *Questionnaires*

The use of questionnaires is widely employed in adversity research, especially in large scale cohort studies. Well used measures include items such as the Social Readjustment Rating Scale - SRRS (Holmes & Rahe, 1967), Life Events Checklist - LEC (Johnson & McCutcheon, 1980) or Louisville Older Persons Event Scale - LOPES (Murrell, Norris, & Hutchins, 1984), among others. For an extensive list of questionnaire measures of adversity please see (Werner, Frost, Macnee, et al., 2012). Questionnaire measures are beneficial for their speed of administration, lack of training and financial demands. Drawbacks include subjective reporting, limited detail, ambiguous items, neglecting contextual information, or to distinguish between life events, difficulties and hassles (Klien & Rubovits, 1987; Orrell & Davies, 1994). Questionnaires often also fail to capture crucial temporal information between adversity experience and depression onset.

The List of Threatening Experiences Questionnaire - LTE-Q (Brugha, Bebbington, Tennant, et al, 1985) was chosen for use in the current research, as it is one of the shorter questionnaire measures (for more details see the measures section). The LTE-Q contains

only 12 items compared to 56 items on the LOPES and 50 items on the LEC. This measure has been validated against the LEDS in the adult population (18-64 year olds), and shown to display high concurrent validity, accounting for a substantial proportion of measured adversity in a relatively small number of categories (Brugha et al, 1985; Brugha & Cragg, 1990), although many items involve life events with little or no threat value, and few are rated as moderate or marked on the LEDS. It also fails to allow assessment of chronic ongoing difficulties. Furthermore, there is no current estimation of the proportion of measured adversity captured by the LTE-Q within an older adult population.

### *Life charts*

The life chart method involves visual representations of events set out temporally over the individual's life history. This was originally developed in 1915 by Adolf Meyer as part of the psychiatric assessment process to capture life events as 'experiments of nature' (see Leys, 1991 for a comprehensive review). The life chart method has recently been used to explore employment transitions in older adults (Porcellato, Carmichael, Hulme, et al., 2010; Carmichael, Hulme, Porcellato, et al., 2013a; b). Such techniques have been described as beneficial for providing visual cues for participants to 'anchor' events in time, aiding autobiographical memory recall and leading to richer information (Belli, Shay & Stafford, 2001). This method may be particularly useful for older adults with memory deficits or cognitive decline, although can be critiqued as lacking standardisation, being time consuming and based on entirely subjective reports.

### *Interview schedules*

The use of interview schedules in adversity research, is dominated by the Life Events and Difficulties Schedule - LEDS (Brown & Harris, 1978b), although other schedules include the Paykel Brief Life Event List (Paykel, 1997) and Life Stress Interview (Kendler et al., 1998), among others. For an extensive list of interview schedules for use in adversity research please see (Anderson, 2006). Some of the key benefits to interview schedules include the investigator rating of adversity, which avoids ratings being contaminated by the mood states of the participants, and the in-depth nature of the information gained. Limitations include the length of time required for training and to administer. The LEDS is one of the most comprehensive measures of life adversity. Such a method has the benefits of being standardised, capturing both acute life events and ongoing difficulties, involving objective and contextualised threat ratings, while having drawbacks of training requirements, being time consuming to administer and rate, resulting in financial

costs to the researcher. This has meant the LEDS is a relatively under-used method compared to questionnaire measures, although it has been used in the general adult population in relation to mood disorders and schizophrenia (Brown & Harris, 1978a), psychosomatic disorders (Hatcher & House, 2003), antenatal mental health (Traviss et al., 2012), and is validated for use with older adults (Orrell & Bebbington 1995; 1998).

## AIMS & HYPOTHESES

### Quantitative Section

#### Aims

##### *Overall*

1. Investigate the association between adversity and depression in older adults

##### *Phase 1*

2. Establish local prevalence rates and severity of depression in late life
3. Investigate the most commonly experienced depressive characteristics (symptom profiles) in late life
4. Identify the kinds of adverse experiences commonly experienced in late life
5. Explore the association between adversity and depression in older adults
6. Examine the effect of age and gender on the association between adversity and depression

##### *Phase 2*

7. Investigate in depth the nature of adversity experienced by older adults
8. Identify the types, frequencies and severity of life events and difficulties commonly experienced in late life
9. Compare the proportion of adversity captured by the brief LTE-Q, as compared to the in-depth LEDS
10. Determine older adult's subjective experience of adversity

#### Hypotheses

##### *Phase 1*

1. There is a positive association between adversity and depression severity
2. This may be more pronounced in the earlier stages of older adult life due to the important transitions around retirement, or in the later stages due to decreasing social supports and increasing physical illness.

### *Phase 2*

1. The LEDS data will build upon the characteristics of adversity outlined in the LTE-Q data, providing more depth of detail around adversity experienced in late life
2. Depressed participants will experience more severe events, marked difficulties, low threat difficulties, life events categorised by loss, interpersonal difficulties and less social (emotional) support
3. Non-depressed participants will experience more positive life events
4. The LTE-Q will only capture a portion of adversity measured by the LEDS interviews (i.e. no reproduction, housing, education, ceremonies, news, pets etc)

### Phase 2 Qualitative Section

#### *Research Question*

What are older adult's subjective experiences of adversity?

#### *Aims*

1. Identify the meanings within late-life adversity
2. Identify the meanings within late-life adversity linking to depression
3. Highlight how people cope with late-life adversity
4. Highlight the experience of having adversity captured through different measures of adversity, the LTE-Q and LEDS

## METHOD

### Design

A cross-sectional design was used to examine the effect of life events and age (IVs) on depression (DV). As a sub-study of the CASPER/PLUS trial, phase 1 involved extracting data from a large sample of participants who completed baseline questionnaires (including the LTE-Q and PHQ-9). Multivariate statistics were used to establish prevalence rates and examine the association between depression and life events at different stages of older adult life. From these participants, a smaller sample was drawn for phase 2 as a more in depth investigation based on the sampling frame outlined in table 1. A mixed methods approach was used to further explore the links between depression and adversity in older age, and examine the proportion of adversity as measured through the LEDS, which is captured by the brief LTE-Q measure.

### *This research within the CASPER Trial context*

As previously mentioned this research was nested within the ongoing CASPER/Plus trial. The phase 1 questionnaire study involved an amendment to the CASPER baseline measures to include the LTE-Q, alongside the already included PHQ-9. Once the LTE-Q had been incorporated into the baseline measures these were routinely sent out by the CASPER team as part of their ongoing recruitment through GP surgeries in the North of England. These baseline measures were the initial point of contact from the CASPER trial before any further follow up from the team, allocation to experimental groups or potential provision of collaborative care intervention. This data was sent back by participants to the York trials unit and inputted onto their database by the CASPER team. Following a period of 6 months data collection, available data was extracted by the York Trials Unit and sent to the researcher for analysis. The phase 2 interview study was a smaller sub-sample drawn from the phase 1 participants, who were invited to participate in more in depth interviews. This smaller sample was selected in line with the sampling frame outlined on page 32.

### *Ethical clearance*

This research received both NHS ethical approval from the Leeds East Research Committee, Yorkshire and Humber REC Central Office and clearance from the local R&D teams (see appendix 1).

## Participants

### *Recruitment*

Participants were recruited through GP practices across the North of England (Leeds, York, Durham, Newcastle), as part of ongoing invitations to take part in CASPER/Plus. This involved a database screening approach, whereby all older adults from selected GP surgeries over 65 years were invited to participate, excluding those with known alcohol dependency, psychotic symptoms, co-morbidities such as cognitive impairment or other factors which made invitation to participate inappropriate. All participants were sent consent packs and baseline questionnaires which include the PHQ-9 and LTE-Q.

Those participants from phase 1 who consented to ‘take part in other research studies’ were considered for phase 2 of the research, based on the sampling frame outlined in table 1.

*Sample size calculation - phase 1*

In order to establish a representative sample size for phase 1, a statistician simulated the relationship between LTE-Q and PHQ-9 by extrapolating from results in the literature (Kroenke, Spitzer, & Williams, 2001; Hosang, Korszun, Jones, et al., 2010; Keers, Uher, Gupta, et al., 2010). This revealed a sample size of 3000 participants would be needed to provide an estimate of the slope (regression co-efficient) of around 0.45, with a standard error of 0.049. This enabled us to describe the association in terms of a regression coefficient with a confidence interval of 0.1, that is we anticipate  $\beta=0.45$  95% CI (0.35, 0.55).

*Sampling frame - phase 2*

A smaller sample of participants were selected and invited to take part in the phase 2 LEDS interviews. This sample size was chosen due to the maximum number of interviews feasible in the research timeframe. In order to select the phase 2 participants a purposive sampling frame was used to ensure diversity within the sample in terms of depression and life events, as determined by LTE-Q and PHQ-9 scores. This method allowed for maximum variation within the sample, allowing greater insights into the relationship between adversity and depression in older adults. It also provided the opportunity to examine the dimensions of adversity particularly linked with depression for the depressed (DLE and D) groups.

The sampling frame is illustrated in table 1. The LTE-Q data from phase 1 was dichotomised to identify the presence Vs absence of life events in the preceding year, in line with other research (Prince et al., 1997). PHQ-9 data was also dichotomised to show the presence Vs absence of major depression ( $\leq 9$  and  $\geq 10$ ) also in line with other literature in the field (Kroenke et al., 2001; Kroenke, 2002). This sampling frame resulted in four participant groups of interest (see table 1), to be roughly balanced by number of participants and gender, in line with the CASPER/Plus trial.

**Table 1. Sampling Frame**

	LTE-Q: score 1+ life events	LTE-Q: score no life events
PHQ-9: score $\geq 10$	<b>DLE</b> - <i>Depressed older adults, life events in the last 12 months</i>	<b>D</b> - <i>Depressed older adults, no life events in the last 12 months</i>
PHQ-9: score $\leq 9$	<b>LE</b> - <i>Older adults not depressed, with life events in the last 12 months</i>	<b>N</b> - <i>Older adults with neither depression or life events</i>



## Measures

The phase 1 measures (PHQ-9 and LTE-Q) were sent out to older adults as part of the CASPER/PLUS trial baseline measures, while the phase 2 interviews (LEDS) were carried out by the researcher (Psychologist in Clinical Training) who was trained in using the measure.

### *Patient health questionnaire - depression module (PHQ-9)*

A brief self-report clinical measure for assessing symptoms of major depressive disorder (Kronke et al., 2001). This comprises nine items which reflect diagnostic symptom criteria, rated on a four point scale as to; 'how often are you bothered by the symptom' over the preceding two weeks. This measure offers a diagnostic cut off score for depression, which at <9 has a sensitivity of 95% and specificity of 84%. In the original study this measure was shown to have excellent internal consistency (Cronbach's alpha = 0.89), good test-retest reliability (Alpha coefficient = 0.84), and concurrent validity (Pearson's correlation = 0.73). This measure was chosen for use in this research as it is routinely used in Primary Care by GPs and clinicians in IAPT services (NHS Employers and The General Practitioners' Committee, 2009). A copy of this measure can be seen in Appendix 2.

### *List of threatening experiences questionnaire (LTE-Q)*

A self-report questionnaire to evaluate stressful life events over the preceding year (Brugha et al., 1985). This comprises twelve items which cover major categories of life events, rated dichotomously as yes/no for having been experienced over the last 6 months. The brevity of this measure was an important pre-requisite for feasibility of inclusion into the larger CASPER/plus trial baseline questionnaires. This measure is shown (Brugha & Cragg, 1990) to have excellent internal consistency (Cronbach's alpha = 0.84), good test-retest reliability (Cohen's kappa = 0.72), high sensitivity (89%) and specificity (74%). For the purposes of this study, the reporting time period was extended to 12 months, and to anchor the timing of events we requested participants to indicate the month/year of event occurrence. This measure was cleared for use in the current research by Prof Brugha on 12th January 2012 (see appendix 3). A copy of this measure can be seen in Appendix 4.

### *Life events and difficulties schedule (LEDS-2)*

A semi-structured interview schedule which facilitates the in-depth investigation of life adversity over a set reporting period (Brown & Harris, 1978b; Bifulco, Brown, Edwards, et al., 1989). This interview covers ten key areas of adversity including education, work, reproduction, housing, money, crime/legal, health, marital relationships, other relationships

and bereavement. This measure distinguishes between discrete events (episodes) and ongoing difficulties (for >4 weeks). Researchers are required to complete an intensive training programme, involving practice ratings, pilot interviews and supervision to become competent to administer this measure. The interview schedule involves a series of prompts to explore adversity experienced in the reporting period. The interviews are recorded using a dictophone and subsequently rated from audio files, using rating dictionaries with contextualised examples to standardise the rating process.

One of the key distinctions made in this measure is the threat value of events and difficulties, which are rated both according to the *subjective* reports (how the interviewee felt about the event), and according to objective *contextual* factors (for the average person in that position). The contextual rating is uncontaminated by the depressed individual's mood states, and may therefore be compared between individuals. These subjective and contextual threat values are rated along a four point scale, for both the short ( $\leq 4$  weeks) and long term (>4 weeks). The focus of events are also classified as either subject, joint or other. *Severe events* are those rated one or two for severity, and either subject or joint focussed. Difficulties are rated along a seven point severity scale, with those rated three and above and ongoing for six months or more classified as *marked difficulties*. Most studies involving this measure use the long term contextual threat ratings as a main focus in research analysis (Brugha & Cragg, 1990), as the contextual threat ratings are seen as objective and comparable over groups, while the long term threat is more clearly linked with psychopathology (as opposed to short-term threat being linked with normal stress reactions). This measure also classifies life events along a series of dimensions, including loss, humiliation, entrapment, relief or fresh starts.

For the purposes of this study, the reporting time period was the previous 12 months (in line with the larger LTE-Q study), with the dating of events carried out by month within this period. As the design of this research was cross-sectional, and all depressed participants had been so for longer than 12 months, the emphasis was on examining events which may have a *maintaining* effect in depression, rather than in provoking the onset of depression. In order to address the issue of reverse causality, events were rated for their independence from depression, with only those logically or possibly independent of depression being entered into the analyses.

This measure has been used in the general adult population in relation to mood disorders and schizophrenia (Brown & Harris, 1978a), psychosomatic disorders (Hatcher &

House, 2003), antenatal mental health (Traviss et al., 2012), and is validated for use with older adults (Orrell & Bebbington 1995; 1998).

## Procedure

### *Phase 1 - questionnaires*

The LTE-Q was formatted into the CASPER baseline questionnaires by the York trials Unit. Baseline questionnaires, including the PHQ-9 and LTE-Q, were sent out to all older adults consenting to participate in the CASPER/PLUS trial. This data was managed by the York Trials Unit and stored on their database until data was required for analysis.

### *Phase 2 – Training*

For the purposes of administering the LEDS interviews the researcher (Psychologist in Clinical Training) underwent a lengthy training program led by the developer of the measure (Dr Tirril Harris). This process involved a three day preparation phase guided by local research supervisors (Dr Gemma Traviss-Turner and Prof Allan House) who were already LEDS trained and experienced using the LEDS in other research. This was followed by a three day period of one to one training in London with the developer of the measure (Dr Tirril Harris). This involved an introduction to the measure in the context of the philosophy of the Bedford College Group, explanation of the rating system, familiarization with the manuals, video clips of interviews and consensus meetings, practice ratings and mock consensus meetings to clarify contextual threat ratings. This training phase was followed up with a series of practice ratings over a period of months from interview transcripts with close supervision and feedback from Dr Tirril Harris, who stayed in collaboration to support the consensus discussions of research interview ratings.

### *Phase 2 - recruitment*

Following the analysis of phase I data, eligible participants (who consented to take part in further research, from the local area) were categorised by sampling frame group before being randomly selected using an informal method. Selected potential participants were sent information packs containing an invitation letter (Appendix 5), information sheet (Appendix 6), and consent/decline form (Appendix 7) to take part in LEDS interviews. Participants were followed up with a telephone call to discuss the research further, ascertain interest or declination to participate and arrange interview times.

### *Phase 2 - interviews*

The 90minute interviews were carried out by the researcher (Psychologist in Clinical Training) trained to competency to administer the LEDS. Interviews were carried out at the participant's homes or the University of Leeds. In the event of home visits, the University research interview safety protocol was followed.

At the end of the LEDS interviews specific probe questions were used to further explore participant's views on the links between depression and adversity, and their coping with depression. This included the following introductory question: "We've talked about your life and the various things that have happened in the last year. If you could sum it up, what would you say about these things that we've talked about?" Additional probe questions were added if necessary to include "Do these experiences matter to you?" "Have they affected you at all?" "What sense have you made of them?" "How did you respond to these things?"

At the very end of the interview, a further question was asked to examine the subjective experience of having adversity captured through the LTE-Q and LEDS measures. This was: "We measure life experiences in different ways. One way is to come and talk to people in interviews like I have today. The other is to ask people to fill out questionnaires like the one you did before [showing questionnaire]. What do you think about these different measures? How have they captured your life experiences over the last year?"

In the event of participants becoming distressed during interviews, the researcher used common factor skills, gave the participants time and offered to terminate the interview and allow them to withdraw where necessary. Where risk of self-harm or suicide was identified during interviews, clinical judgement was used to assess and manage the situation, referring back or liaising with their GP where necessary and signposting to other services. This was also reported back to the primary and co-supervisors, and through the York Trials Unit as appropriate (as per the CASPER protocol). All research data was treated confidentially, stored in lockable drawers or as password protected documents. Data which includes personal information will be stored separately to anonymised records. All data will be destroyed 5 years after data analysis is completed.

LEDS interviews were recorded using a digital Dictaphone and rated directly from audio files using standardised manuals, without the need for full transcription. During the listening process relevant segments of the interviews were transcribed to facilitate the rating process and record verbatim the answers to additional probe questions as outlined above. Consensus meetings were held to determine the reliability of ratings, with other members of

the University department trained to competency on this measure (Dr Gemma Traviss-Turner & Professor Allan House), as well as the developer of the measure (Dr Tirril Harris).

## Analysis

### *Phase 1*

The phase 1 data was analysed using Microsoft Excel for descriptive statistics and IBM SPSS Statistics for inferential statistics. The age profile of the sample was calculated in terms of the mean, range, upper and lower quartiles. Data outlining depression prevalence rates were presented over the entire sample, and then specifically by age (early Vs late older age cohort) and gender showing the range, counts and percentages. Severity and types of depressive symptoms (responses to individual symptom items) were displayed for the entire sample using percentages. Life event data was also presented over the entire sample to show the frequencies of life events experienced, and the types of adversity experienced (responses to individual LTE-Q items) using percentages. Percentages displayed in the text are rounded to the nearest whole number, while exact percentages are reported in figures and tables.

In order to examine the association between adversity and depression, a preliminary analysis using crosstabulation tables ensured that the data was free from incomplete information. Characteristics of the larger sample were then summarised by experience of adversity (presence +1 life event Vs absence no life events), depression diagnosis (presence Vs absence), age cohort (early vs late) and gender (male vs female) to show counts and percentages of participants in each group. To highlight initial differences between these sample groups, univariable comparisons were carried out using Pearson's chi-square tests ( $\chi^2$ ). This looked at the association between adversity and depression, before examining this association over stages of older adult life, and then again by gender.

The association between life events and depression across older adult life was analysed using multivariable logistic regression, as we were interested in the power of life events, stage of life and gender (IVs- predictor variables) to predict current depression diagnosis (DV- categorical outcome variable). Assumptions were checked for running a regression analysis. Contingency tables were used to check expected frequencies (all  $>1$  and no more than  $20\% < 5$ ) for incomplete information. As all expected frequencies were greater than 5 this assumption was met. The assumption of linearity is overcome in logistic regression by transforming categorical data (using logarithmic transformation), and expressing a non-linear relationship in a linear way.

Comparative tests were conducted to establish statistical significance and act as a guide for variable entry to the regression model. The logistic regression model was then fitted using SPSS, with 'depressed' and 'non-depressed' categories as dependent variables and predictor variables being entered into the regression model simultaneously in one block (forced entry). The model was validated using the resample validation method, to check optimism of the coefficients. The model was selected on maximisation of  $R^2$  (proportion of variation in depression explained by the predictors, or model).

Residual statistics (cook's distance, leverage, standardised residual and DF Beta values) were examined to identify evidence of bias. Residual statistics were no cause of concern in interpreting the model. Cook's and DFBeta values were all  $<1$ , leverage statistics were all close to the expected value (0.002083) and less than 5% of standard residuals were outside  $\pm 2.58$ . Tests of collinearity were also run. As tolerance values were  $>1$  and VIF values were  $<10$  there were no concerns regarding multicollinearity between variables.

## *Phase 2*

### Quantitative analysis

The phase 2 data was analysed using Microsoft Excel to present descriptive statistics. The age profile of the sample was calculated in terms of mean, range, upper and lower quartiles, and demographic data presented using percentages. Data for life events and difficulties were presented over the entire sample to show the frequencies and types of life events and difficulties experienced using percentages and counts where appropriate, showing the most commonly experienced types of adversity in older adult life.

The LEDS data was not compared using inferential statistics between depressed and non-depressed groups, due to the size of sample and associated lack of statistical power. Despite this, key life event variables were identified to be presented separately for these groups using descriptive statistics. The four frames of the sample were collapsed into two groups - depressed and non-depressed. These two groups were then described to show the percentages of severe events, marked difficulties, low threat difficulties, life events categorised by loss or humiliation, positive life events, interpersonal difficulties, and social (emotional) support variables (social activity, social contacts, and level of confiding relationships) present in each group.

Finally the proportion of LEDS measured adversity captured by the LTE-Q was presented using descriptive statistics. The LTE-Q data was collapsed for the purposes of analysis to match 7 of the 10 LEDS categories to include health, miscellaneous-death,

marital/partner relationships, other relationships, work, crime/legal and money/possessions. Specific details of this process can be found in appendix 8. The LTE-Q data for phase 2 participants was examined, and the percentage of the sample reporting an event within each life event category calculated. The LEDS data was also examined and the percentage of the sample reporting at least one life event or difficulty within each life event category also calculated.

### Qualitative analysis

Thematic Analysis was used to further explore participant's views on the links between depression and adversity, and their coping with depression. This process also allowed the examination of experiences which were not captured by either the LTE-Q or LEDS quantitative analyses. This process aimed to identify patterns of meaning from the transcribed responses to the specific probe questions asked at the end of the LEDS interviews, plus the transcribed LEDS vignettes. The process of this analysis followed the six stages set out by Braun & Clarke (2006), explained in more detail below. This involved the reporting of semantic themes from a realist standpoint, ergo, taking responses at face value as representative of experience. Thematic Analysis was considered a more appropriate methodology than IPA or Grounded Theory for this evaluation, due to the theoretical flexibility, and the emphasis not being to generate theory or attempting to interpret underlying meaning from the text.

As mentioned above, the qualitative analysis process followed Braun & Clarke's (2006) six stages. This involved the initial process of *familiarising* myself with the transcribed LEDS vignettes and responses to probe questions for each of the 19 participants, reading and re-reading the transcripts, highlighting sections and noting initial thoughts on the transcripts. The second stage saw the development of initial *codes*, through systematically grouping data from across the entire data set into each code. Thirdly, this data was examined to search for *themes*, noting initial theme ideas onto post-it notes and gathering codes into these themes. The fourth stage involved a *reviewing* process, going back to check these themes against the initial coded data extracts, then across the whole data, and generating the initial thematic map. The next stage involved the ongoing refinement of themes, *defining* each clearly and choosing the most appropriate name for each theme. The final stage involved the process of *producing the report*, which offered further refinement through the choice and of extract examples, and descriptions of the themes in relation to the research question and aims.

The entire data ‘corpus’ included all transcribed LEDS vignettes and responses to each probe question for all participants. In order to answer each of the four qualitative research aims, a slightly different data ‘set’ was analysed. For research aim 1 (Identify the meanings within late-life adversity) all the LEDS vignettes plus the answers to initial probe questions were analysed for every participant in the research (n=19). For research aim 2 (Identify the meanings within late-life adversity linking to depression) all the LEDS vignettes plus the answers to initial probe questions were analysed only for depressed participants in the research (n=8). In relation to research aim 3 (Highlight how people cope with late-life adversity) all the LEDS vignettes plus the answers to initial probe questions were analysed for every participant in the research (n=19). To re-cap these initial probe questions included in the analysis of research aims 1-3 were; “We’ve talked about your life and the various things that have happened in the last year. If you could sum it up, what would you say about these things that we’ve talked about?” with additional probes as necessary including; “Do these experiences matter to you?” “Have they affected you at all?” “What sense have you made of them?” “How did you respond to these things?” Finally for research aim 4 (Highlight the experience of having adversity captured through different measures of adversity, the LTE-Q and LEDS) only the answers to the final probe question were analysed for every participant in the research (n=19). To re-cap this final probe question included in the analysis of research aim 4 was “We measure life experiences in different ways. One way is to come and talk to people in interviews like I have today. The other is to ask people to fill out questionnaires like the one you did before [showing questionnaire]. What do you think about these different measures? How have they captured your life experiences over the last year?” The outcome of this analysis was the production of four thematic maps, each relating specifically to each of these four qualitative research Aims.

Credibility checks were employed in order to reduce bias and enhance data quality. The open ended questions facilitated participant responding with fewer constraints imposed by the researcher. The thematic maps were shared and discussed in collaboration with supervising researchers from this project, as well as a trainee-researcher and supervisor-researcher from the Leeds DClIn Qualitative Research Group. Themes were further refined following discussions to enhance reliability. Raw data extracts are outlined in the results section to contextualize themes and allow the thematic process to be transparent to the reader. It must be noted that the research aims in this study are focused around adversity, rather than the entire world of older adults and the experience of ageing in general. This in



itself creates a negative bias to the research, both through the questions asked and the data presented in the thematic maps. It is important to note this qualitative analysis is not intended to be representative of the experience of ageing as a whole, but of *adversity* as we age.

As a researcher my position was a much younger age as compared to the sample I was investigating, which may have led me to consider life events differently to the way older adults might. I also had experience of older adults in life close to me whose experiences would naturally colour my view of late-life adversity and depression. While conducting the analysis I consequently tried to be aware of my own assumptions and remain as neutral as possible during the process. The discussions with colleagues were also useful safeguards against bias which naturally presented during this process.

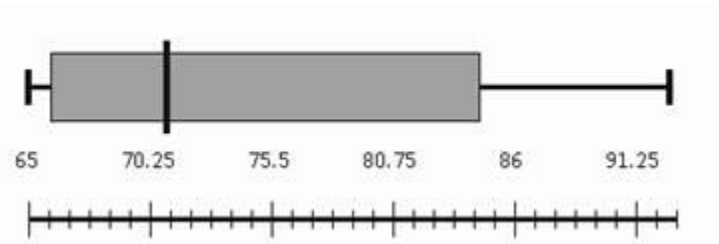
## RESULTS

### Quantitative results: Phase 1

#### *Sample demographics*

The response rate to baseline questionnaires was 92% (York Trials Unit, as of February 2014), yielding a sample of 960 in the study period. The responding participants were balanced in terms of gender (50% male: 50% female). Both genders had similar age ranges (males 65-93 years, females 65-92 years), a difference of -1.11, BCa 95% CI [-0.88, 0.66], which was non-significant  $t(952) = -0.28, p > 0.05$ .

The mean age of participants was 72 years. In terms of age cohorts, 67% of respondents were in the earlier stages of older adult life (65- 74 years) while a smaller proportion of 33% were in the later stages (75+ years). Figure 1 shows the full variation and frequencies of ages within the sample.



**Figure 1. Boxplot and whiskers to show the age range, median, upper and lower quartiles of responding participants**

### *Depression prevalence*

The prevalence of depression as categorized by the PHQ-9 cut off score of 10 was 12% across the total sample. This was seen to be higher for women (14%) than for men (10%) a difference of -0.39, BCa 95%CI [-0.08, 0.005], which was non-significant  $t(938) = -1.83, p > 0.05$ . Depression prevalence was also seen to increase with age from the early (12%) to later (13%) stages of older adult life, a difference of -0.02, BCa 95%CI [-0.07, 0.03], which was non-significant  $t(588) = -0.81, p > 0.05$ . Please see table 2 for full details of depression prevalence rates.

**Table 2. A table to show the prevalence of depression across the whole sample and subgroups of gender and age**

Sample group	Data	Diagnostic category and PHQ-9 score	
		Non-Depressed score $\leq 9$	Depressed score $\geq 10$
<b>Sample overall</b>	Total number participants	844	116
	% of total sample	87.9	12.1
	Range	0-9	10-24
<b>Men</b>	Total number participants	433	49
	% of total sample	89.8	10.2
	Range	0-9	10-24
<b>Women</b>	Total number participants	411	67
	% of total sample	86.0	14.0
	Range	0-9	10-23
<b>65-74 years (early age cohort)</b>	Total number participants	571	74
	% of total sample	88.5	11.5
	Range	0-9	10-24
<b>75+ years (later age cohort)</b>	Total number participants	273	42
	% of total sample	86.7	13.3
	Range	0-9	10-23

### *Depression severity*

The PHQ-9 data was also examined in terms of severity for the entire sample group. This data revealed that 19% of participants were presenting with symptoms of mild depression, 8% moderate, 3% moderately-severe and 1% severe. In total 31% of the sample presented with some degree of depressive experience. Please see table 3 for full details of rates of depression by severity.

**Table 3. Severity of depression across the entire sample**

<b>Depression severity &amp; PHQ-9 score</b>	<b>Non-depressed</b>	<b>Mild</b>	<b>Moderate</b>	<b>Moderately severe</b>	<b>Severe</b>
	0-4	5-9	10-14	15-19	20-27
<b>Total number participants</b>	662	182	74	28	14
<b>% of total sample</b>	69.0	19.0	7.7	2.9	1.5

### *Depression characteristics*

Participants' responses to individual items of the PHQ-9 were also examined, as seen in figure 2. This revealed that the most common items reported by participants were feeling tired (selected by 54%) and trouble sleeping (selected by 50%). The least common item reported by participants was suicidal ideation (selected by 8%).

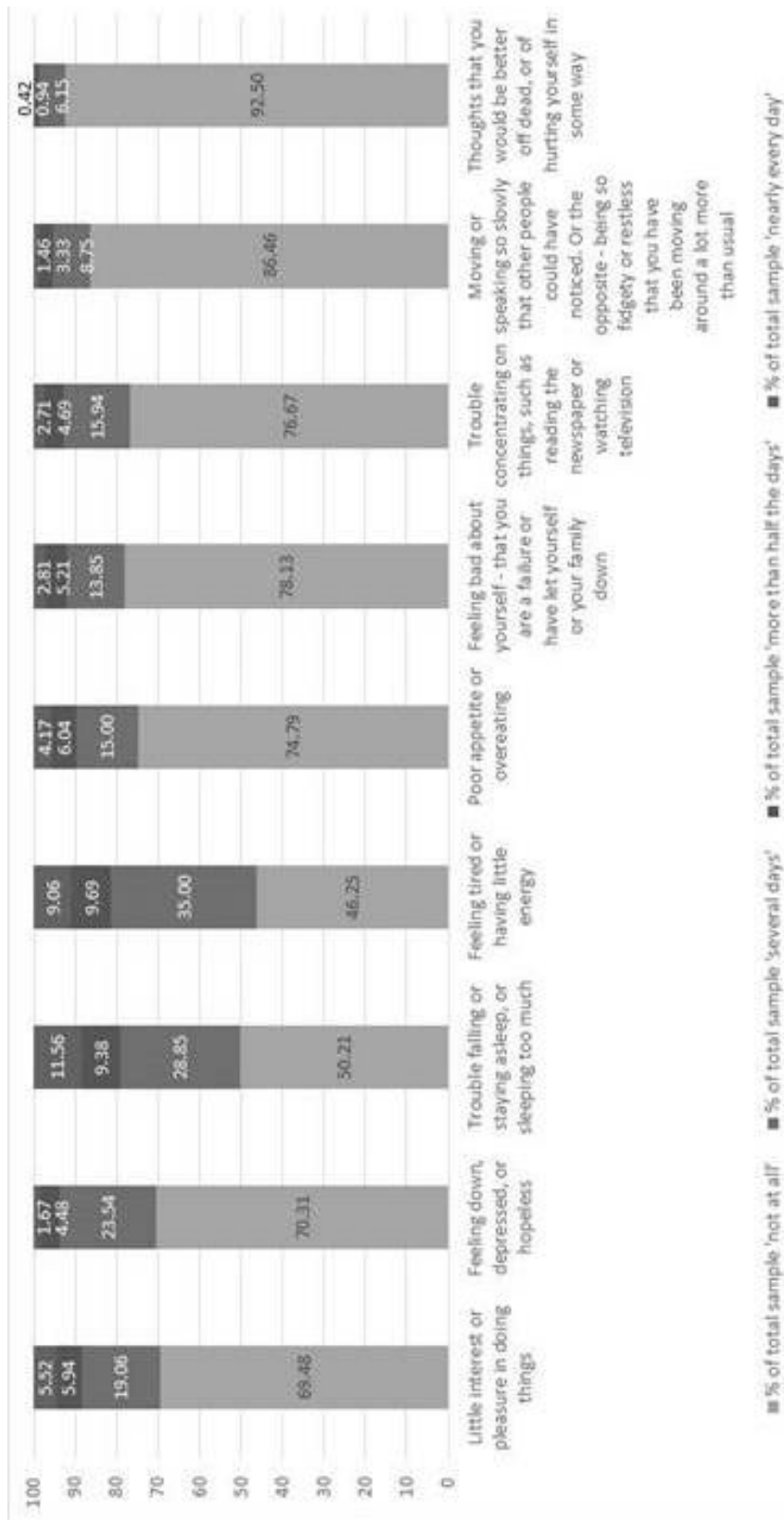
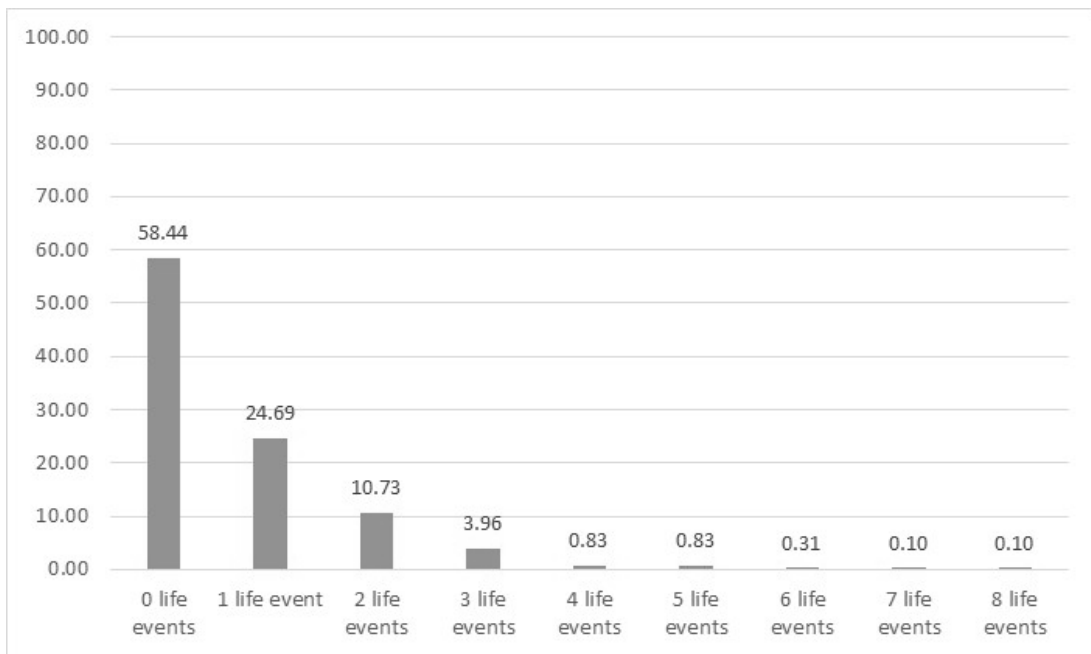


Figure 2. A stacked bar graph to show percentages of participant responses to individual items of the PHQ-9

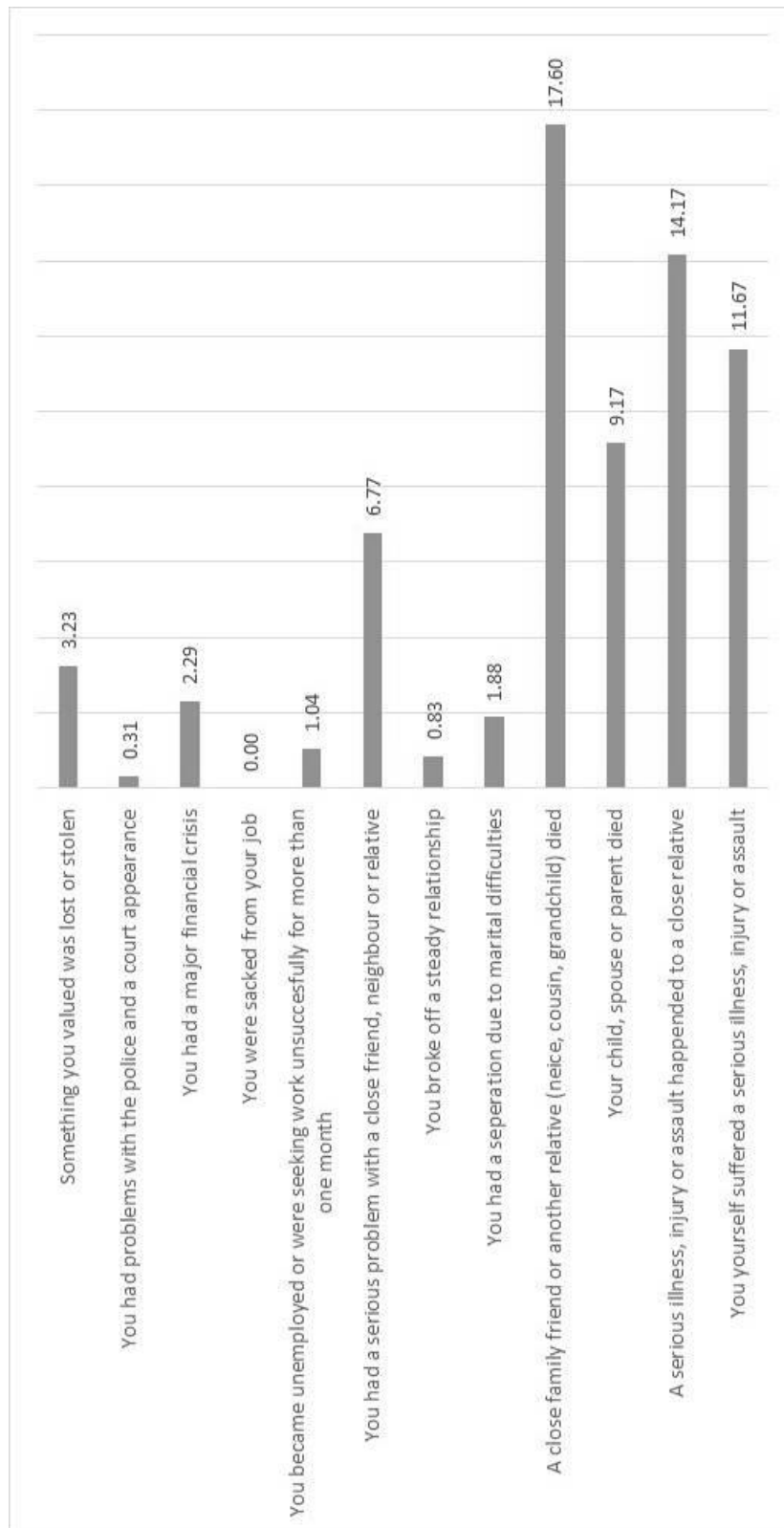
*Life event characteristics*

Data from the LTE-Q was examined and showed that just over half the older adults (58%) reported experiencing no life events in the previous 12 months, while a smaller portion reported upwards of one event (42%). The participants reporting life events in the previous 12 months largely only reported one (25%) or two (11%) events, with the remaining participants reporting between three and eight events (6%). This data can be seen in more detail in figure 3.



**Figure 3. A graph to show percentage of older adults reporting life events overall by frequency**

The LTE-Q data was also examined in terms of responses to individual items, as captured in figure 4. Among the most commonly experienced events were health-related and bereavement events. Bereavement events involved both immediate family members (9% of participants) as well as other relatives and family friends (18%). Health-related events (illness, injury or assault) involved participants themselves (12%) as well as close relatives (14%). Further details of the participant's responses to individual items can be found in figure 4.



**Figure 4. A graph to show the percentage of participants responding 'yes' to each individual item on the LTE-Q**

#### *The association between life adversity and depression*

Data was examined to look at the association between adversity experienced in the last 12 months and depression outcomes (table 4). This analysis indicates that for non-depressed participants overall, the proportion reporting no recent adversity (60%) is higher than the proportion reporting recent adversity (40%). For the depressed participants, the opposite pattern is shown, whereby the proportion reporting recent adversity (54%) is higher than those reporting none (46%). These differences between depression and recent adversity measured by the LTE-Q were shown to be representative of a highly significant  $\chi^2(1)=8.979$ ,  $p<0.001$ , and large association (Cramer's  $V = 0.97$ ).

#### *The association between life adversity and depression across stages of older adult life*

The association between recent adversity and depression was also examined across early and later stages of older adult life (table 4). For the earlier stages of older adult life, for the non-depressed participants, the proportion reporting no recent adversity (59%) is higher than the proportion reporting recent adversity (41%). For the depressed participants, the opposite pattern is shown, whereby the proportion reporting recent adversity (58%) is higher than those reporting none (42%). These differences between depression and recent adversity were shown to represent a significant  $\chi^2(1)=8.011$ ,  $p<0.005$ , yet small association (Cramer's  $V=0.111$ ) for participants between the ages of 65 and 74.

For the later stages of older adult life, for non-depressed participants, the proportion reporting no recent adversity (63%) is higher than the proportion reporting recent adversity (37%). For the depressed participants, a small difference is shown in the same direction, whereby the proportion reporting no recent adversity (52%) is slightly higher than those reporting none (48%). These differences between depression and recent adversity were not found to be representative of a significant association  $\chi^2(1)=1.614$ ,  $p>0.05$  for participants over the age of 75.

#### *The association between life adversity and depression by gender*

The association between recent adversity and depression was also examined for both male and female participants (table 4). For male older adults, for non-depressed participants, the proportion reporting no recent adversity (62%) is higher than the proportion reporting recent adversity (38%). For the depressed male participants, a small difference is shown in the same direction, whereby the proportion reporting no recent adversity (53%) is higher than those reporting none (47%). These differences between depression and recent

**Table 4. Counts and percentages of depressed and non-depressed participants by adversity, age and gender. Chi square statistics are provided. \* indicates significant differences between categories**

					Adversity		Chi square tests			
					No adversity reported in prior 12 months	Adversity reported in prior 12 months	Chi squared value	Degrees of freedom	Significance value	Cramer's V
Overall	Total sample	Depression diagnostic category	Non-depressed	Number of participants within category	509*	335*	8.979	1	0.003	0.97
				% within category	60.3	39.7				
			Depressed	Number of participants within category	53*	63*				
				% within category	45.7	54.3				
Stage of older adult life	Earlier 60-74 years	Depression diagnostic category	Non-depressed	Number of participants within category	338*	233*	8.011	1	0.005	0.111
				% within category	59.2	40.8				
			Depressed	Number of participants within category	31*	43*				
				% within category	41.9	58.1				
	Later 75+ years	Depression diagnostic category	Non-depressed	Number of participants within category	171	102	1.614	1	0.204	0.072
				% within category	62.6	37.4				
Depressed	Number of participants within category	22	20							
	% within category	52.4	47.6							
Gender	Male	Depression diagnostic category	Non-depressed	Number of participants within category	267	166	1.366	1	0.242	0.053
				% within category	61.7	38.3				
			Depressed	Number of participants within category	26	23				
				% within category	53.1	46.9				
	Female	Depression diagnostic category	Non-depressed	Number of participants within category	242*	169*	8.084	1	0.004	0.13
				% within category	58.9	41.1				
Depressed	Number of participants within category	27*	40*							
	% within category	40.3	59.7							



adversity in male older adults were not found to be representative of a significant association  $\chi^2(1)=1.366, p>0.05$ .

For the female older adults, for the non-depressed participants, the proportion reporting no recent adversity (59%) is higher than the proportion reporting recent adversity (41%). For the depressed female participants, the opposite pattern is shown, whereby the proportion reporting recent adversity (60%) is higher than those reporting none (40%). These differences between depression and recent adversity in female older adults were shown to represent a significant  $\chi^2(1)=8.084, p<0.005$ , yet small association (Cramer's  $V=0.13$ ).

### *Regression model*

The logistic regression results are displayed in table 5. The model coefficients comparing no recent adversity to the exposure of recent adversity in older adults revealed  $OR=1.795, CI=1.213-2.657, p<0.01$ . The odds ratios indicate that exposure to recent adversity increased the chance of an older adult experiencing clinical depression by nearly two fold (1.8), as compared to those reporting no recent adversity. This finding was indicative of a statistically significant difference between groups ( $p<0.01$ ). The confidence intervals indicate the true population effect is expected to lie between a fifth (1.2) and an almost three-fold (2.7) increase in the incidence of depression following recent adversity in older adults. It is important to note this odds increase in the chance of experiencing depression in the context of recent adversity is an association, which does not imply a causal relationship (that adversity triggered the depression).

The model coefficients comparing early and later stages of older adult life revealed  $OR=0.831, CI=0.55-1.251, p>0.05$ . The odds ratios indicate that being older (75 years plus) decreased the chance of an older adult experiencing clinical depression by nearly a fifth (0.8) following adverse experience, as compared to younger age. This finding was not indicative of a statistically significant difference between groups ( $p>0.05$ ). Age therefore showed no statistically significant improvement in fit or contribution to the model.

The model coefficients comparing male and female gender revealed  $OR=0.716, CI=0.482-1.062, p>0.05$ . The odds ratios indicate that being male decreased the chance of an older adult experiencing clinical depression by nearly a third (0.7) following adverse experience, as compared to female gender. This finding was not indicative of a statistically significant difference between groups ( $p>0.05$ ). Gender therefore showed no statistically significant improvement in fit or contribution to the model.

**Table 5. A table to show the logistic regression coefficients for predictors of depression**

Logistic regression coefficients for depression						
	B	SE	OR	95% CI Lower	95% CI Upper	Probability
Constant	-1.985	0.99	0.137	-2.186	-1.81	0.001
Adversity	0.585	0.2	1.795	1.213	2.657	0.003*
Age	-0.185	0.208	0.831	0.553	1.251	0.376
Gender	-0.335	0.201	0.716	0.482	1.062	0.937

\* Significant at  $p < 0.05$

Pseudo R<sup>2</sup>=0.025 (negelkerke), prob=0.006, log likelihood = 695.155

Abbreviations: B – Beta value, SE – Standard Error, OR – Odds Ratio, CI – Confidence Interval

This model explained the variation in relation to the variables outlined in table 5, yielding a pseudo R<sup>2</sup> of 0.025. Thus, the model accounted for 2.5% of the variance in depression. Resample validation was used to check the optimism of the model fit. This showed a simpler model with only one variable was more robust (pseudo R<sup>2</sup>=0.018, prob=0.003, log likelihood=698.838). Adversity alone predicted 1.8% of the variance in depression, with similar coefficients to the larger model (B=-0.591, SE=0.201, OR=0.1806, p=0.003).

Interactions of adversity by age, adversity by gender and age by gender were also tested as predictors of depression, although none were significant and therefore excluded from the regression model.

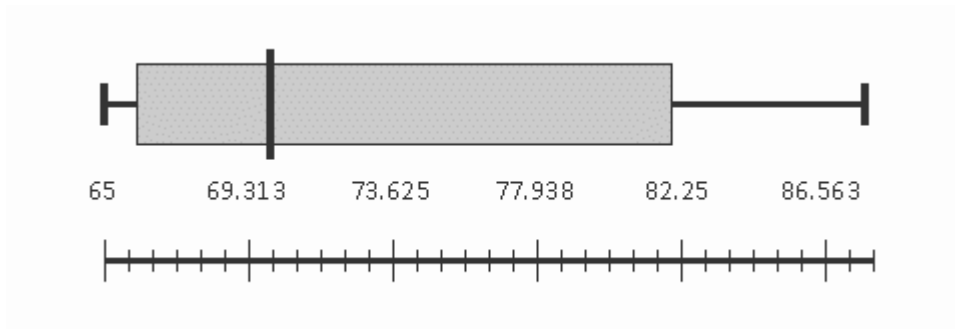
## Quantitative results: Phase 2

### *Uptake rate*

The proportion of phase 1 participants consenting to be contacted for further research was 41%. 40 potential participants were randomly selected and sent letters inviting them to participate in research interviews. Of these potential participants 12% were unable to be contacted to follow up these letters, while 40% declined (stating reasons such as not being interested, being too unwell or too busy). The remaining 48% consented to participate, yielding a sample of 19 participants willing to participate in the phase 2 LEDS interviews

### *Sample Demographics*

Participants had an average age of 72 years, and in terms of age cohorts the majority (68%) of respondents were in the earlier stages of older adult life (65- 74 years) while a smaller proportion (32%) were in the later stages (75+ years). Figure 5 shows the full variation and frequencies of ages within this sample.



**Figure 5. Boxplot and whiskers to show the age range, median, upper and lower quartiles of interviewed participants**

Of the participants agreeing to participate in interviews a larger portion (68%) were male than female (32%). From self-report data the participants were predominantly White-British (90%), Christian (68%), and retired (68%). A slightly larger portion (58%) of participants were single/ separated/ widowed or divorced than those participants who were married (42%). The sample reported being generally active - going out daily (63%), usually having someone around to talk to (63%), with just over half reporting little to no social isolation (58%). Full demographic details are available in table 6.

**Table 6. Table outlining demographic data from the phase 2 LEDS sample (n=19)**

<b>Age</b>	average	72		
	% early stages	68.40%		
	% later stages	31.60%		
<b>Gender</b>	% male	68.40%		
	% female	31.60%		
<b>Nationality</b>	% British	90%		
	% Irish	5%		
	% Bahamian	5%		
<b>Ethnicity</b>	% White-British	90%		
	% White-Irish	5%		
	% Black Caribbean	5%		
<b>Religion</b>	% Atheist	32%		
	% Christian	68%	of which:	
			% Catholic	21%
			% Church of England	26%
			% Baptist-Methodist	5%
			% Methodist	11%
		% Baptist	5%	
<b>Marital Status</b>	% married	42%		
	% other	58%	of which:	
			% single	11%
			% separated	5%
			% divorced	16%
		% widowed	26%	
<b>Employment Status</b>	% retired	68%		
	% semi-retired	32%		
<b>Post-school qualifications</b>	% none	58%		
	% college	21%		
	% university	21%		
<b>Number of people in household</b>	average	1.5		
<b>Number of confidants</b>	average	1		
<b>Level of confiding</b>	% marked	36%		
	% moderate	42%		
	% some	11%		
	% none	11%		
<b>Activity - how often goes out</b>	% daily	63%		
	% 3-6x per week	0%		
	% 1-3x per week	32%		
	% rarely	5%		
<b>Social contact - someone usually around to talk to</b>	% yes	63%		
	% no	37%		
<b>Social Isolation</b>	% marked	5%		
	% moderate	26%		
	% some	11%		
	% none	58%		
<b>Depression status</b>	% depressed	42%		
	% non-depressed	58%		

*Sampling frame*

An equal number of participants from each section of the sampling frame were invited to participate in research interviews. Those agreeing to participate from each section of the sampling frame are outlined in table 7.

**Table 7. Sampling frame showing number of participants agreeing to take part in interviews**

	LTE-Q: score 1+ life events	LTE-Q: score no life events
PHQ-9: score $\geq 10$	<b>DLE</b> (n=5)	<b>D</b> (n=3)
PHQ-9: score $\leq 9$	<b>LE</b> (n=4)	<b>N</b> (n=7)

Abbreviations: DLE – Depressed with Life Events, D – Depressed, LE – Life events, N – Neither

*LEDS life events*

Data from the LEDS was examined across the entire sample and showed the majority of older adults (84%, n=16) reported upwards of one event in the previous 12 months while a smaller portion (16%, n=3) reported no life events. Participants reporting life events on average reported 2 life events each. Around a fifth of older adults (21%, n=4) each experienced a severe life event in the preceding 12 months, with these severe events representing 9% of the total life events reported in the study.

The vast majority of life events experienced by older adults were health events (57%), with smaller proportions representing other relationships (19%), miscellaneous and death (10%) or reproduction events (10%). For full details please see figure 6. This pattern of results is comparable to the most commonly experienced events highlighted in the phase 1 LTE-Q analysis (see figure 4).

*LEDS difficulties*

Data showing difficulties from the LEDS interviews across the entire sample showed all older adults (100%, n=19) experienced upwards of one difficulty in the previous 12 months. Participants on average reported 4 difficulties each. The majority of older adults (68%, n=13) experienced at least one marked difficulty in the preceding 12 months, with these marked difficulties representing 28% of the total life events reported in the study.

Similarly to the LEDS life events profile (see figure 6) the vast majority of difficulties experienced by older adults were health events (57%), with smaller proportions representing other relationships (21%), housing (7%) and various other classifications as outlined in figure 7.

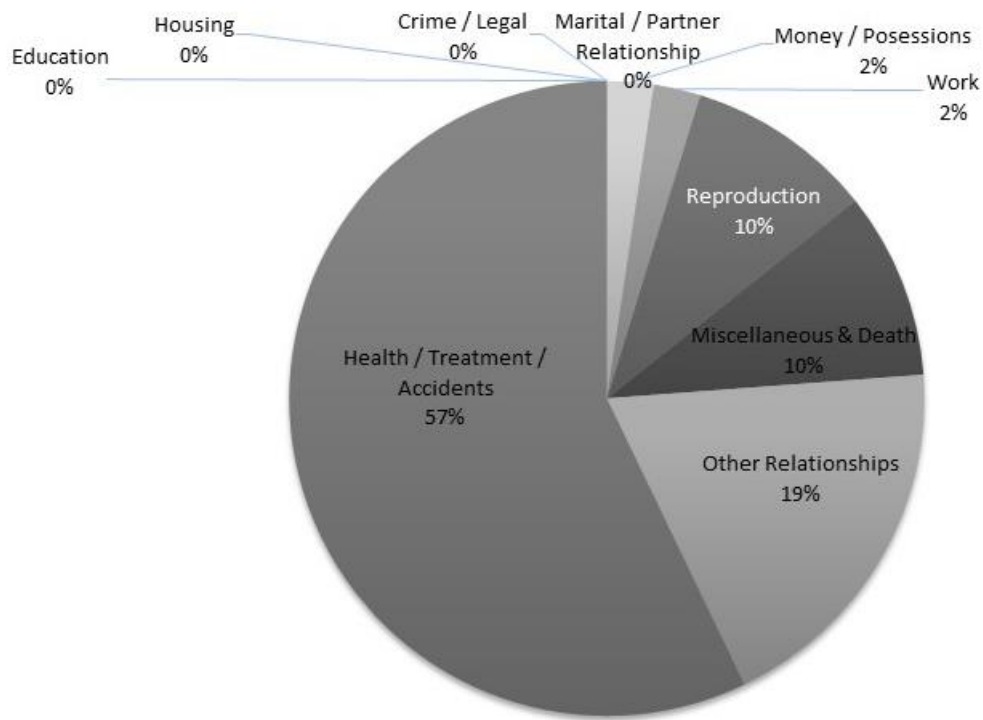


Figure 6. A pie chart to show the percentage of reported life events by LEADS classification

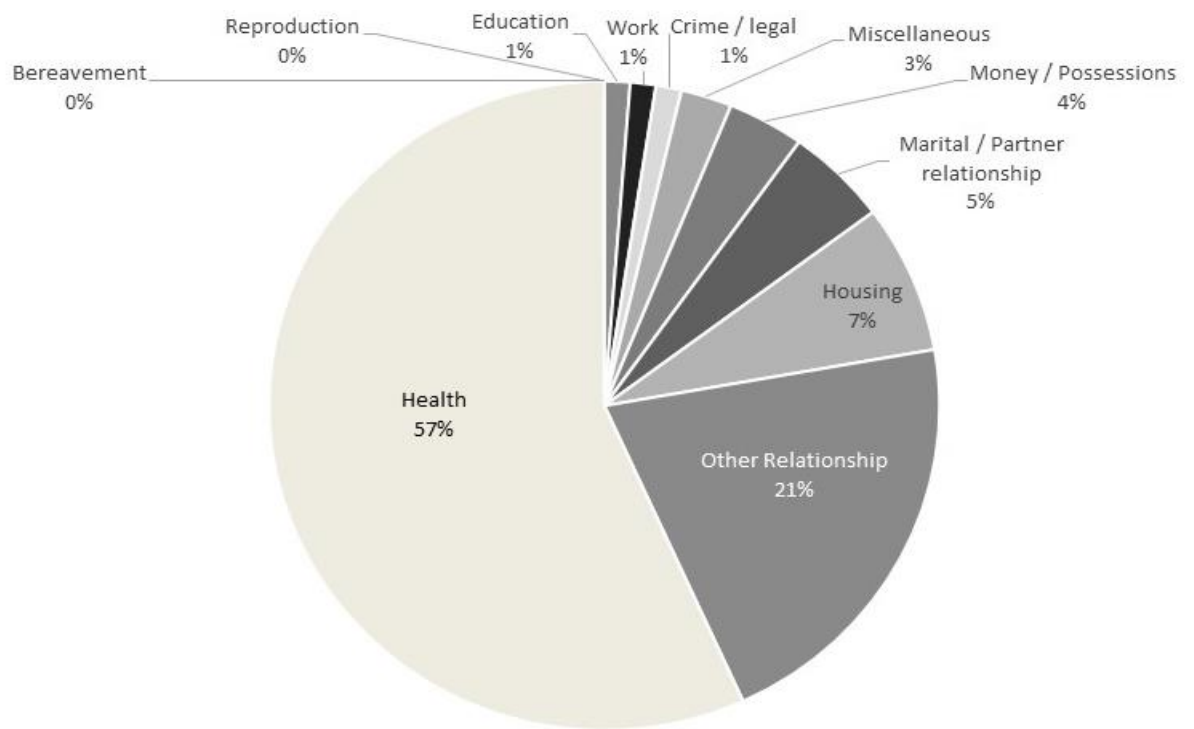


Figure 7. A pie chart to show the percentage of reported difficulties by LEADS classification

*Life events between the sampling frame groups*

The data from the phase 2 sampling frame categories were collapsed by depressive category and descriptive statistics are shown for these variables in table 8. This shows the proportion of participants reporting at least one life event variable within each sub group of the sample (i.e. within the depressed or non-depressed samples). Frequency of severe life events was shown to be low in both groups, although slightly higher for the non-depressed participants. In contrast, frequency of marked difficulties was shown to be considerably higher for depressed participants. There was a slightly higher incidence of events characterized by loss in the depressed group, as well as positive events, and a considerably higher incidence of interpersonal difficulties. The incidence of low threat difficulties was shown to be higher in the non-depressed group.

**Table 8. Proportion of participants specifically experiencing life event variables within each of the depressed and non-depressed groups (percentages and counts shown)**

		<b>DLE &amp; D frames</b> (combined n=8)	<b>LE &amp; N frames</b> (combined n=11)
<b>Severe adversity</b>	Severe Events	13% 1	27% 3
	Marked Difficulties	89% 8	64% 7
<b>Burdensomeness</b>	Low threat difficulties (non-marked)	75% 6	100% 11
<b>Dimensions</b>	Loss events (marked/ moderate)	50% 4	45% 5
	Positive events (marked/ moderate)	25% 2	9% 1
<b>Interpersonal difficulties</b>	Marital / partner and other relationship difficulties	88% 7	45% 5

Abbreviations: DLE – Depressed with Life Events, D – Depressed, LE – Life events, N – Neither

*Social emotional support between the sampling frame groups*

It is also useful to be aware of the contextual differences within subsets of a sample group which link to the variables under investigation. Descriptive statistics are also shown for self-reported social emotional support variables for the depressed and non-depressed groups separately. A larger portion of non-depressed participants self-reported indicators for social emotional support as compared with depressed participants, as outlined in table 9.

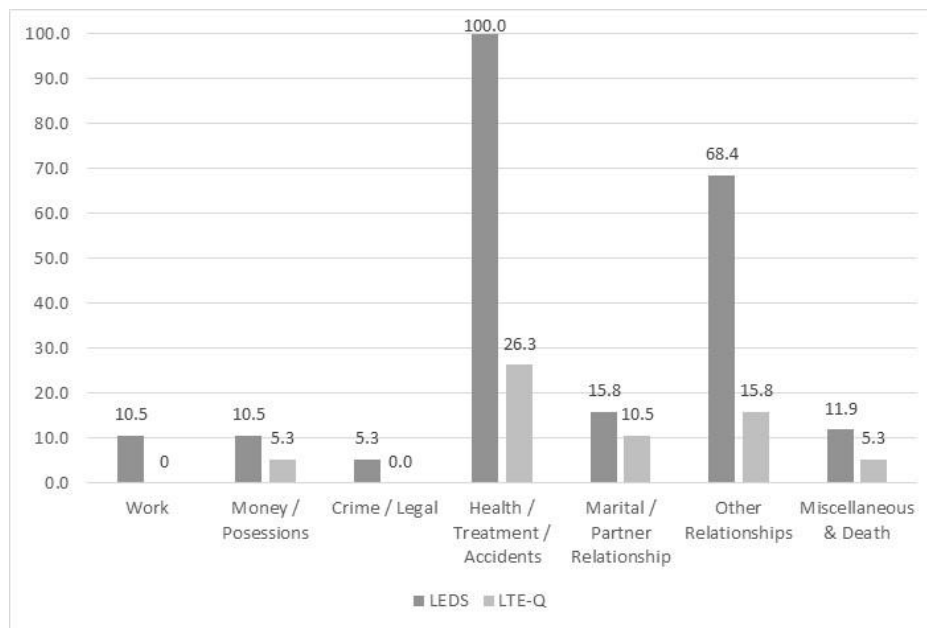
**Table 9. Proportion of participants specifically reporting social emotional support variables within each of the depressed and non-depressed groups (percentages and counts shown)**

		<b>DLE &amp; D frames</b> (combined n=8)	<b>LE &amp; N frames</b> (combined n=11)
<b>Social emotional support</b>	Average number of confidants	0.75	1.2
	Confides all / most emotionally significant areas to confidant	63%	91%
	Usually someone around to talk to	50%	73%
	Goes out more than twice per week	4	8
	Social isolation – none reported	50%	73%
		4	8

Abbreviations: DLE – Depressed with Life Events, D – Depressed, LE – Life events, N – Neither

*Comparing the LEDS and LTE-Q data for phase 2 participants*

The LEDS and LTE-Q data was collapsed into seven of the LEDS categories. The percentage of the sample reporting at least one event in each category as measured by the LEDS and LTE-Q is shown in figure 8. It can be seen that for each life event category the LEDS measure detected a larger portion of adversity than the LTE-Q. For the majority of life event categories the LEDS captured at least double the adversity as measured by the LTE-Q. This difference was most striking for health and other relationship event categories, for which the LEDS captured around four times more adverse experiences than the LTE-Q.



**Figure 8. A stacked graph to show the percentage of phase 2 participants reporting at least one event within each life event category as measured by the LEDS and LTE-Q**



## Qualitative Results: Phase 2

The qualitative interview analysis was mapped directly onto the qualitative research aims 1-4:

1. Identify the meanings within late-life adversity
2. Identify the meanings within late-life adversity linking to depression
3. Highlight how people cope with late-life adversity
4. Highlight the experience of having adversity captured through different measures of adversity, the LTE-Q and LEDS

As outlined in the following sections and displayed visually in figures 9-12. Three levels of themes were identified during this process including; meta-themes, themes and subthemes, within which fell individual codes of meaning.

### Meaning of adversity experienced in late-life

The thematic map depicting the analysis of meanings within late-life adversity can be seen in figure 9. Two meta-themes were identified as pertinent within this analysis, entitled 'Redefining the self' and 'Leaving in peace'.

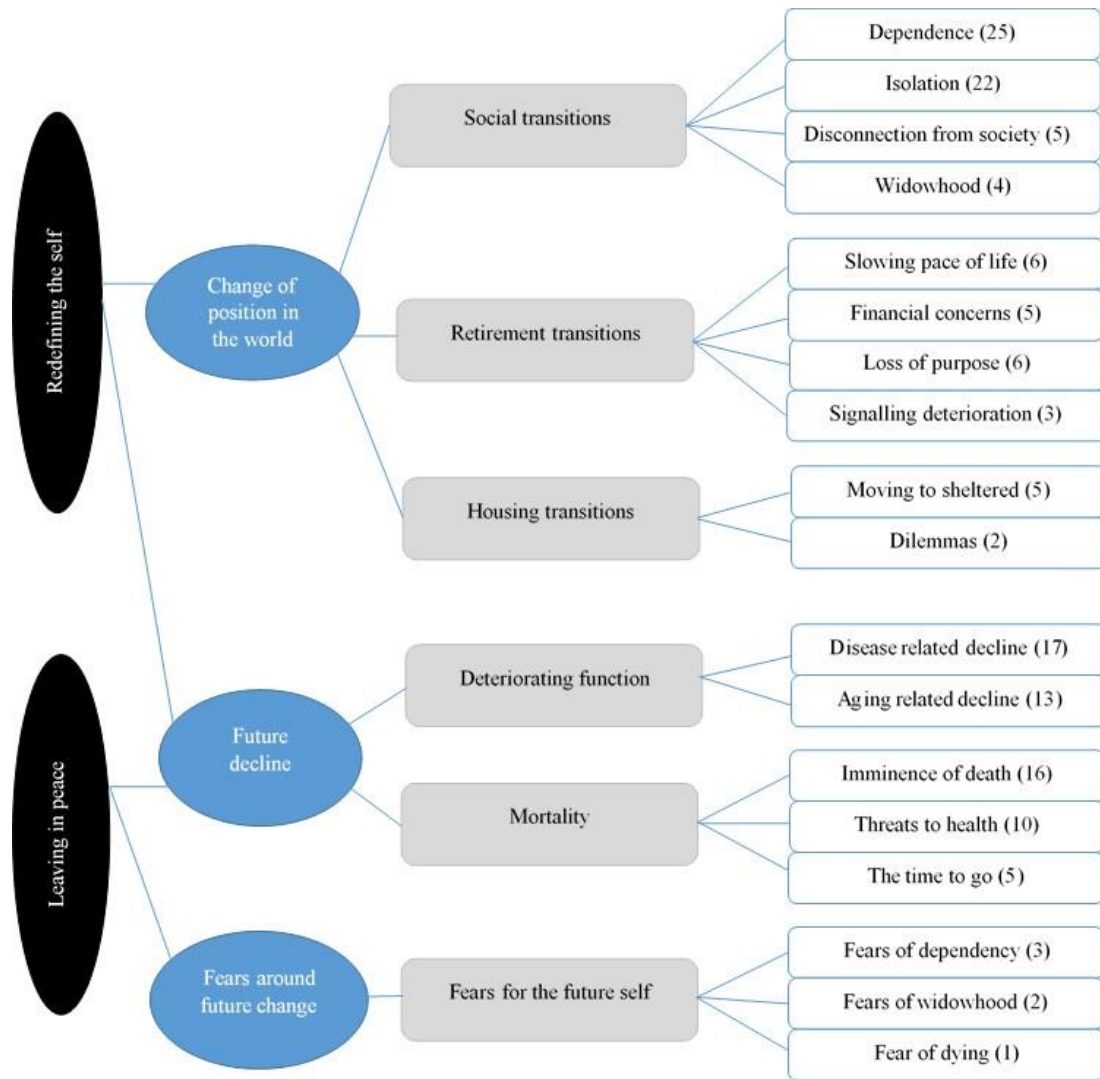
#### *Redefining the self*

This meta-theme describes the events and difficulties which link to older adults' experience of redefining their self-identity, for example through the changing nature of their position within the world, through declining function and closeness to mortality. Within this meta-theme fell two themes entitled 'Change of position in the world' and 'Future decline.'

#### Change of position in the world

This theme describes the adverse experiences which link to changing positions in the world through social shifts such as giving or receiving care, entering retirement or through changes in housing status. Within this theme fell three sub-themes entitled 'Social transitions,' 'Retirement transitions' and 'Housing transitions.'

Social transitions: This theme included four codes of meaning around the change of position socially, into dependence, isolation, disconnection from society and widowhood. The transition into '*dependence*' was experienced as being dependent on others for care ("...because now I have to depend on my wife and carers for everything,") providing care for dependent others ("My father-in-law's Alzheimer's....deteriorating...my wife and I provide caring support....cooking, cleaning & laundry...our life's being crippled...he's so dependent on us,") or being no longer able to provide care for others ("...she [wife] does a lot for me.....Now I can't do anything for her"). Social '*isolation*' was another transition



**Figure 9. Thematic map to show the meanings of adversity experienced in late life**

commonly mentioned (“[close family] moved house...used to pop in regularly...only regular contact really...I rarely leave the house so significantly more isolated now,” “[confidant] died...no longer have weekly visits from her...or go out like we did to the shops,” “...not seen friends as often in last 12months...having to spend more time caring for [father-in-law]...impacts on being able to go out and see people”). Being ‘*disconnected from society*’ was also experienced for example through changes in marital status (“I would try to go on holiday after my wife died...a man alone ‘wouldn’t be suitable’ as ‘young children are here.’ All of a sudden you’re a danger to children...a pariah”) or due to communication difficulties (“...feel I’m on the sidelines now because people are afraid to speak to me...in case they don’t understand what I say [Parkinson’s related dysarthria]. The transition into ‘*widowhood*’ was also experienced as a social change requiring adaptation (“...she [wife]

died...the family comes over, there's a funeral, everything to do...when they all go back home, everything dies down. You've been married for 46 years and suddenly you're on your own," "I lost my partner...you get used to a way of life...we relied on each other...part of a partnership...when that's broken you need to re-orientate").

**Retirement Transitions:** This theme included four codes of meaning around the change of position from employment to retirement, including the slowing pace of life, financial constraints, loss of purpose and signaling deterioration. The '*slowing pace of life*' was described as prominent in the retirement transition ("The change in routine...affected my mind-body...mental awareness. Affected sleep too," "Think when you stop working you just laze about," "My life is very monotonous now. Do the same things on each day of the week, can predict what's happening. Never used to be like that"). '*Financial constraints*' were also pertinent ("Financial aspects now bother me....can only do things which are necessary now [post-retirement]....choose not to have certain things in daily living") along with '*loss of purpose*' ("Working means you're somebody...when you retire you're nobody" "Working means I'm useful" "Doing something worthwhile. Secrets of life for work to be for you, satisfaction. Both losses when you retire") and retirement as '*signaling deterioration*' ("If you're working you're living ....if you retire you're going to die aren't you?" "If you stop working...you'll deteriorate. If something happened which meant I couldn't work that would be it for me, I'd go downhill").

**Housing Transitions:** This theme included two codes of meaning around moving to sheltered accommodation and dilemmas. The transition '*moving to sheltered*' was experienced as a response to deteriorating health and frailty ("...we're contemplating moving [husband has early stage dementia]...from our current house...to maintained flats...been to view a couple," "...first time I have difficulty getting up the stairs...will move to sheltered housing,") although some participants showed significant reluctance towards this move ("I don't want to [move]. Not going to...all my memories of them [deceased wife and son] are in here...and that's it"). Housing '*dilemmas*' were the experience of having to make decisions about moving house, whereby all outcomes were negative. The idea of being 'dammed if you do and dammed if you don't.' ("Although I have weekly concerns about wanting to move [significant housing discontent], I have nowhere to move to. The risk...it's worse than where I am now").

#### Future decline

This theme describes experiences which link to the future decline of function and proximity to death. This involves the process of redefining previously held self-identities

such as being healthy, strong or sharp-minded. Within this theme fell two sub-themes entitled 'Deteriorating function' and 'Mortality.'

Deteriorating function: This theme included two codes of meaning around deteriorating function which was experienced as disease related, or as part of the natural aging process. *'Disease related decline'* included the impact of diagnosed cognitive disorders ("They said it's Cerebro-vascular disease.....can't remember the kids birthdays. My memory's got worse since the stroke....very emotional too....just break down, can't steel myself against it, it affects me"), physical illnesses ("Put off any [heart] operation as long as possible... Seen people have operations and decline, so will live with what I know") and more general limitations in everyday life ("[Urology problem] ...need to be near a toilet all the times now...don't get much warning when I need to go...occasionally end up messing myself...sometimes...really painful...at night get up...6-20 times to visit the bathroom...very tired in the days...often sleep in my chair"). *'Ageing related decline'* included subtle cognitive changes ("I'm forgetting things more over the last 18 months....unable to retain instructions or directions now...also...find it difficult getting jobs finished..."), physical niggles ("I'm generally fit and healthy but don't feel it. Wonder if it's my age? Lots of little things which knock you down in how you feel about yourself"), mobility issues ("[I] do a lot of falling about as if I'm drunk sometimes...unsteady on my feet...fell down back steps...cracked head on stone," "I feel a stiffening and slowing down daily,") as well as reduced energy and motivation ("I've not got the energy to do things anymore, cutting the hedge, dusting.....never get round to it...Think I'll do it tomorrow and tomorrow never comes. It happens when you get older usually," "Don't feel as if I'm getting anywhere, everything's a bigger effort than it should be. Loosing motivation to do things").

Mortality: This theme included three codes of meaning around the imminence of death, threats to health and the time to go. *'Imminence of death'* relates to the increasing awareness of the reality of death and the sense of death being at close proximity ("I attend more funerals as I do anything else.....you're 79....it's countdown and that sort of thing," "Didn't think I'd reach the age I am. I haven't long to go anyway, whatever happens," "I've come to terms with the fact she's [sister] dying. When you get to 70, you're resigned to the fact you're in the next batch, on their way out"). *'Threats to health'* involves health conditions experienced by the self or close others which threaten health and life ("...news he [brother] needed open heart surgery....worried me to death," "I had a bad feeling as soon as I heard the word Cancer," "My main worry whether the [prostate] operation was successful"). *'The time to go'* refers to the idea that there comes a time when death is a

preference over life (“Why would you bother at that age? You wouldn't bother resuscitating then, it's time to go,” “If they [people in nursing care] want to die it's up to them,” “I wish the Lord would take me now, but he'll do it in his own time”).

### *Leaving in peace*

This meta-theme describes the experiences in late life which link to the sense of leaving life in peace, for example there being a time when declining function is no longer unsettling and death becomes a preference. Equally, experiences may also threaten the sense of leaving in peace, for example fearing future care needs or being left behind by others. Within this meta-theme fell two themes entitled ‘Future decline’ and ‘Fears for the future self.’

#### Future decline

As outlined previously on page 57 and above, future decline may contribute to the sense of leaving life in peace when adversity around declining function and closeness to death are no longer feared but experienced as accepted and preferential (“...doctors mentioned concerns about potential cancer...didn't concern me...I'm lucky to have reached the age I am...if it's cancer at least it's something certain...on the bright side...I'd be told...how long I've got...I could warn my children...it would be better than now, where I can sit in a chair and when I'm gone they'll have to come in and find me. I don't want that to happen. That...upsets me more than knowing when I'm going to go”). Future decline may also threaten the sense of leaving life in peace when declining function and closeness to death are feared or experienced as unsettling (“...diagnosed with prostate cancer...had a bad feeling as soon as I heard the word Cancer,” “...life too short,” “...time goes so quickly...time goes so fast with us now”).

#### Fears around future change

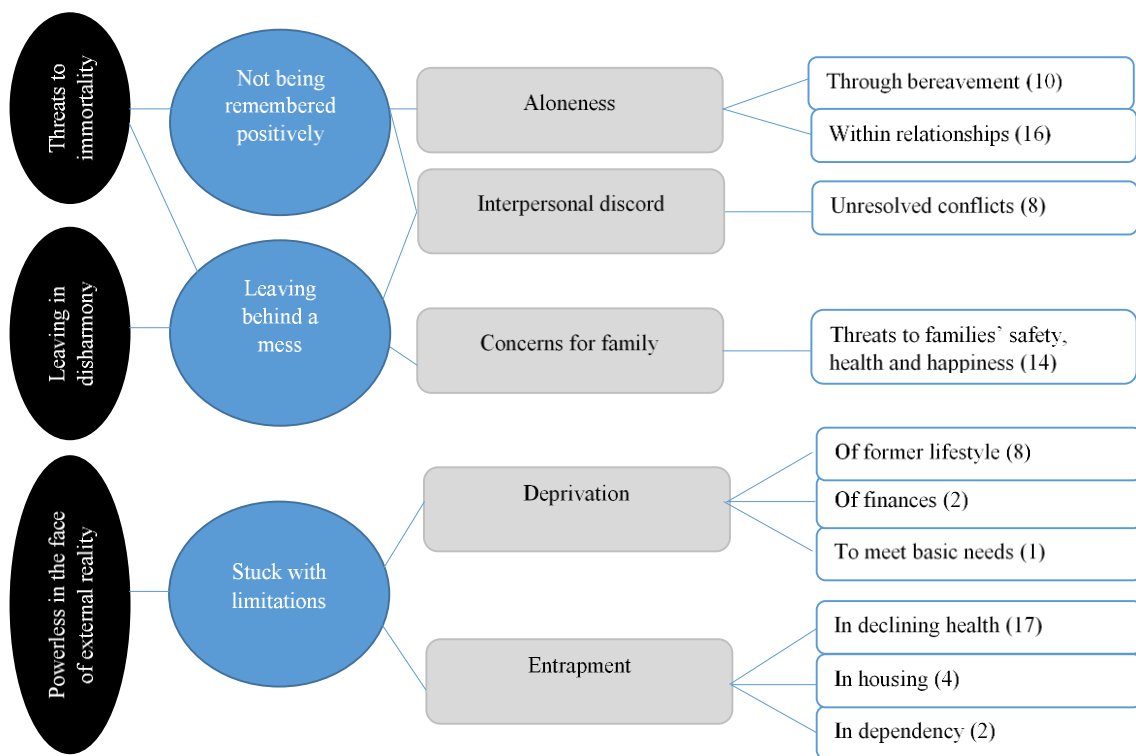
This theme highlights the adverse experiences which link to fears around changes to come in the future, which threaten the sense of leaving life in peace. Within this theme fell one sub-theme entitled ‘Fears for the future self.’ This involves the emotional responses to declining health, transition into dependency and mortality.

Fears for the future self: ‘*Fears of dependency*’ involved the fear of being dependent on others in the future (“thought of being cared for by anybody is awful,” “don't want to end up stuck in a chair in a home full of old fogies...can't see myself being infirm...surrounded by old people lying there all moaning and groaning...being fed cabbage through a straw”). ‘*Fears of widowhood*’ involved the fear of being widowed in the future (“Worry is we'll not

always have this relationship. Fear is the future. What will happen to each other, who's going to be left behind? Key fears. On your own. Everything would be bad about it"). 'Fear of dying' involves fears around the process of death ("I'm tired of living but scared of dying. I wish the Lord would take me now").

### Meanings of adversity linking to late-life depression

The thematic map depicting the analysis around meanings of adversity linking to late life depression can be seen in figure 10. Three meta-themes were identified as pertinent within this analysis, entitled 'Threats to immortality,' 'Leaving in disharmony' and 'Powerless in the face of external limitations'.



**Figure 10. Thematic map to show the meanings of adversity linking to late life depression**

### *Threats to immortality*

This meta-theme describes experiences which threaten the sense of the self as surviving within the minds of others after death. Within this meta-theme fell two themes entitled ‘Not being remembered positively’ and ‘Leaving behind a mess.’

#### Not being remembered positively

This theme involves the barriers to being remembered positively as close others may have died themselves, relationships may be experienced as distant, or involve conflict. These situations may threaten the sense of being remembered in a positive way by significant others, and hence threaten the sense of surviving (the self as being immortal) in the minds of others after death. Within this theme fell two sub-themes entitled ‘Aloneness’ and ‘Interpersonal discord.’

Aloneness: ‘*Through bereavement*’ relates to the experience of having had close relationships with others which have been lost through their death “Lost a lot of people over the years. Grieving over it. Makes us feel very sad we don’t see anyone anymore,” “Dad had Parkinson’s...passed away...Wednesday after [mum] started getting poorly...cancer....she died 6 weeks to day after me dad. Like someone had smacked me in the face”). ‘*Within relationships*’ refers to the experience of having objectively close networks of family and friends, but being alone and lonely within them (“I am married...but really it’s been over for the last 25 years. We do our own things....have separate bedrooms...I miss the intimate side of married life”), or the absence of emotionally close relationships (“I’d like to have a partner....I live the life of a hermit...it would be nice to be more sociable. My only regret”).

Interpersonal discord: ‘*Unresolved conflicts*’ refers to the experience of unpleasant and unwanted tensions within relationships which show no signs of improving (“Upsets me because we were such a close family, brought them up on my own, great all really a close family. People used to say god you aren’t half close to your kids. Up until last 2 years...I feel like I’ve been abandoned,” “...there’s this undercurrent of tension....our son visits occasionally but the daughter-in-law and step-children never come round, even though they only live down the road”).

#### Leaving behind a mess

This theme involves the experience of being unable to tie up loose ends, leaving a mess, for example through interpersonal conflicts, or concern about the safety of those left behind after death. In particular the experience of conflict may threaten the sense of being

preserved in the minds of others (being immortal) after death. Within this theme fell two sub-themes entitled 'Interpersonal discord' and 'Concerns for family.'

Interpersonal discord: As outlined previously above, this contributes to the sense of leaving a behind mess as conflicts are ongoing and show no signs of being resolved.

Concerns for family: '*Threats to families' safety, health and happiness*' refers to the experience of unsettled family contexts causing concern ("My ex-wife doesn't get on with anyone....always been a problem with our girls [daughters]....I often console them when they come back....it'll have turned into an argument," "Only worries is for the lads [sons]. Not living within their means....not earning enough to put into pensions. Hopefully we'll be able to leave something to them, if we don't need care," "I think about her [granddaughter] a lot....daughter-in-law's always been chaotic...never being able to look after her. One of her boyfriend's hit her [granddaughter]....she's had a very unsettled life....feel like she needs a strong positive influence").

#### *Leaving in disharmony*

This meta-theme involves the experience of leaving behind a disharmonious situation after death as opposed to leaving with a sense of peace. Within this meta-theme fell one theme entitled 'Leaving behind a mess.'

#### Leaving behind a mess

As outlined previously on page 60 and above, this links to leaving in disharmony as interpersonal conflicts threaten the sense of interpersonal peace and concerns for the wellbeing of family leaves relatives in a disharmonious position.

#### *Powerless in the face of external reality*

This meta-theme describes the experience of powerlessness in the face of an external reality, being deprived and entrapped within limitations experienced in later life. Within this meta-theme fell one theme entitled 'Stuck with limitations'

#### Stuck with limitations

This theme describes the experience of being stuck within personal limitations which are depriving and entrapping in nature. This links to the meta-theme as the individual experience is one of powerlessness to the external reality of these limitations. Within this theme fell two sub-themes entitled 'Deprivation' and 'Entrapment.'

Deprivation: This sub-theme refers to the experience of being deprived of things previously encountered. '*Of former lifestyle*' includes the former pursuit of interests which



has now unintentionally ceased (“We used to love travelling....always visiting new places. Last holiday abroad was three or four years ago...I need to be at home now where the care is provided,” “Since I’ve adapted me lifestyle....used to exercise and run around, can’t now in case...I’ll have another stroke,” “My life is very monotonous....gave my allotment up 8 years ago. Most of my time is spent sitting in my chair, putting a programme on TV I want to watch....then falling asleep”). Other areas included deprivation ‘*of finances*’ (“I do worry about money....I’m living off me state pension....got no savings to fall back on. Harder since I stopped working definitely. If I get a big job like the bathroom needing fixing I’m screwed”), and ‘*to meet basic needs*’ (“To get from my bed to the wheelchair is hard. I can’t get to the bathroom alone. I want a book and to read it, but I have to ask someone to get me a book. The frustration”).

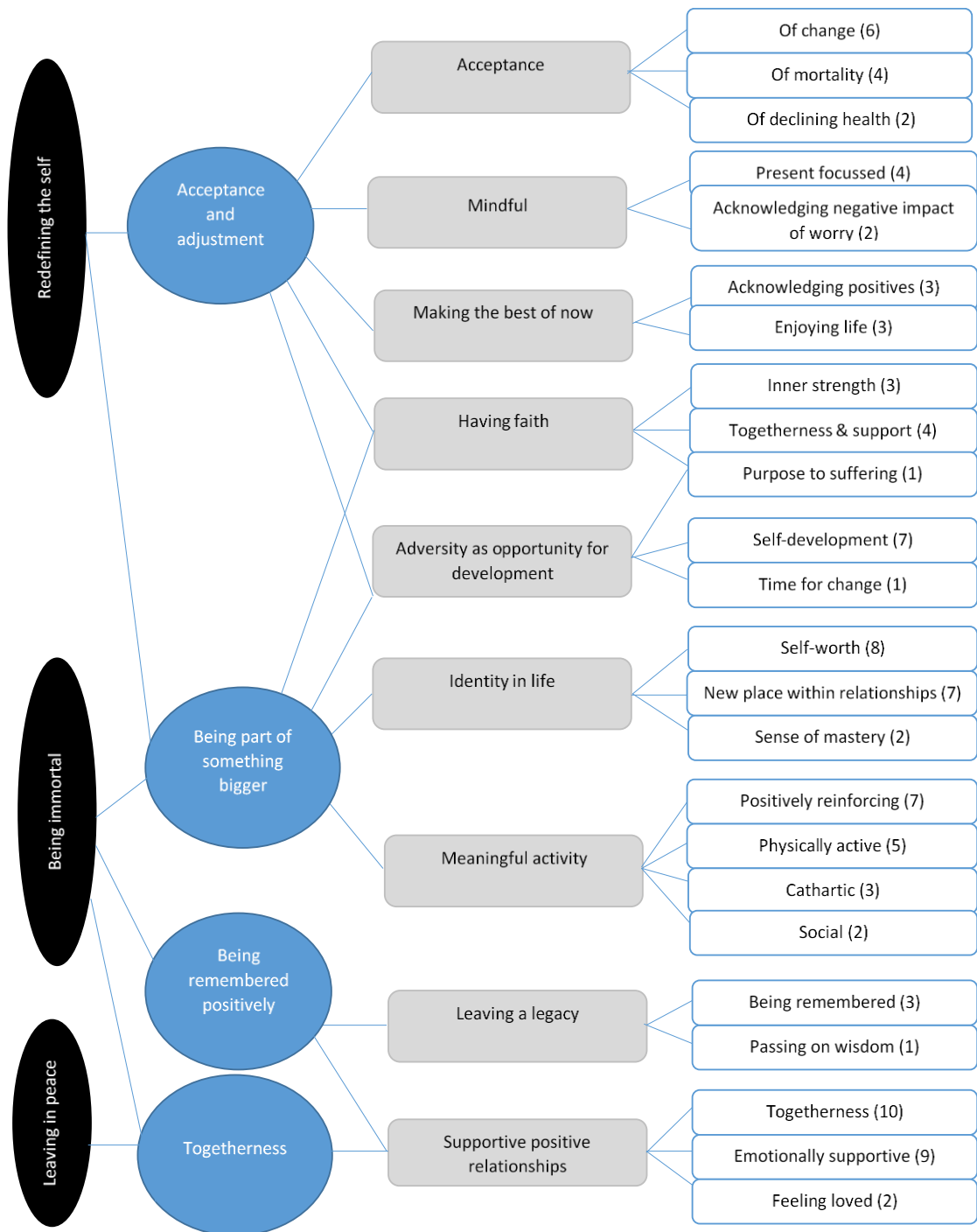
Entrapment: this sub-theme relates to the experience of being trapped in a negative situation. This involves entrapment ‘*in declining health*’ “Despair. At times lack of hope. Because with Parkinson’s it doesn’t get better, it just gets worse,” “He [husband] doesn’t talk sense....does silly things. Been suspecting it’s early signs of dementia. Just this morning he put the bread inside a plastic bag on top of the hot toaster...close to bursting into flames...concerned about safety now”), ‘*in housing*’ (“...it’s [council flat tower block]...all changed...full of druggies...murder along the street the other day...druggies’ keep asking him [son] if he wants drugs,” “It’s too rough round here on a night...I have to watch [the fading light] when I’m back off the bus or I can’t go down the ginnel. Neighbours...loud parties every weekend...awful really”) and also ‘*in dependency*’ (“she does a lot [caring] for me.....she gets irritated with me and shouts sometimes. I get really fed up”).

#### Coping with adversity in late-life

The thematic map depicting the analysis around coping with adversity in late life can be seen in figure 11. Three meta-themes were identified as pertinent within this analysis, entitled ‘Redefining the self,’ ‘Being immortal’ and ‘Leaving in peace.’

##### *Redefining the self*

This meta-theme highlights that being flexible with self-identity in older adulthood, open to redefining the self through continual adjustment to the changing context of life, is perceived as beneficial in coping with late-life adversity. Within this meta-theme fell two themes entitled ‘Acceptance and adjustment’ and ‘Being part of something bigger.’



**Figure 11. Thematic map to show how people cope with late-life adversity**

## Acceptance and adjustment

This theme identifies an accepting stance towards adverse experiences of change in late life, along with the intention towards adjusting in some way as beneficial in coping with adversity. These both link to redefining the notion of the self in later life also, for example through acceptance and openness to drive self-redefinition forwards, plus mindfulness and positivity being beneficial when self-redefinition may be unfavorable and therefore harder to accept. Within this theme fell five sub-themes entitled; ‘Acceptance,’ ‘Mindful,’ ‘Making the best of now,’ ‘Having faith’ and Adversity as an opportunity for development.’

Acceptance: This refers to an accepting view of things to come in life, as opposed to a resistant view, which was perceived to help in coping with adverse experiences. For example acceptance ‘*of change*’ or transitions experienced in late life (“Whatever comes, comes....Just have to get on with it really don’t you. There’s always going to be changes, but if you’re not prepared to go along with them you’ll be left behind,” “I know what is to be will be. Nothing any of us can do about it. Don’t let it worry me,” “I know there will be changes”) ‘*of mortality*’ (“just one of those things, we’re here today, gone tomorrow,” “Everyone has to die,” “[I’ve] come to terms with the fact my sister is dying. When you get to 70, resigned to fact you’re in the next batch, on their way out”) or ‘*of declining health*’ (“When you get older there’s a higher risk of chronic....serious illnesses. You become a bit fatalistic over it,” “I walk up to the pub on a night...it’s...top o’that hill. Know you’ve climbed it! Don’t go straight to the bar these days, I sit down for a while first. [The barmaid] sometimes brings me pint over. Try listen to me body if I need to sit down”).

Mindful: This refers to the ways older adults approach adversity which maps onto the practice of mindfulness, for example being ‘*present focused*’ (“One day at a time. I can’t move forward further than today,” “...take one day at a time, I don’t worry today about what could happen tomorrow. It won’t get you anywhere,”) and ‘*acknowledging the negative impact of worry*’ (I wouldn’t say I worry....don’t worry, it’s not going to do anything for me,” “...[I] take each event as it comes...my wife looks ahead, ‘What if? What if?’ ‘How will we cope with this?’ She spends the whole time worrying & not sleeping. ‘What happens if?’ Can’t get it out of her head. I think if it happens it happens and we deal with it, if it doesn’t happen fine. Not going to worry about it”).

Making the best of now: This refers to the attempt to make the best of the situations we find ourselves in throughout our lives, for example through ‘*acknowledging positives*’ (“Lot of times I’ve tried to look at the bright side,” “Sometimes that’s just life....tried to look at the bright side and carry on. As time goes on you realise you have to make the best

of life. It's how you look at life," "I've had a good life. Health otherwise is fine. Without Parkinson's I would be walking up mountains") or equally through '*enjoying life*' for what it is ("All part of the rich tapestry of life. If you can...try to enjoy life," "You only get one life, let's enjoy it!").

Having faith: This subtheme refers to the faith or trust people have in a larger force or belief system, experienced by the older adults in this research as religious faith. This facilitated coping with adversity through the engendered '*inner strength*' ("My faith is in God and I know there will be changes, I know there is nothing I can do about it," "It's a pain I have to bear. I wish the Lord would take me now, but he'll do it in his own time"), sense of '*togetherness and support*' both relationally with God ("[my] children offer to come round at night, but I say 'no, I'll be alright,' because I'm not alone...God is here with me," "You can pray...you're not alone," "My personal relationship with Jesus helps me with this [coping]") as well as with the church community ("Priest has helped. I'm not a religious person but I did respect the priest and prayed. Did his job and did it well," "This didn't bother me as such because my friends from church came [collected her] for mass, luncheon club and choir"), along with the experience of '*purpose to suffering*' ("Suffering shapes your character. Puts you to the test. Better in suffering than when life goes well. It gives perspective of what's important in life. Easy to forget about the big issues of life. You count your blessings").

Adversity as an opportunity for development: This subtheme relates to the experience of growing from adverse experiences, learning or developing the self in some way. For example engaging in activities of '*self-development*' ("It [granddaughter's manic episode] was upsetting but educational. I joined MIND, looked into things like mania...read about restraint, now I know the signs," "...you learn things about yourself you didn't know. They changed you in that way," "...started painting...thought let's find out about it...started putting something of myself in a painting [dancing figures of himself and his late wife]. At this time I wasn't totally sane [still depressed], but there was a therapy in it. If I can do something which means something,") and viewing adverse experiences as the '*time for change*' ("[following widowhood] I wanted to get rid of adaptations made to the house for my wife...knew I really just needed to start doing something with the house. Every morning when I got up I had something practical to do...gave me a purpose [felt this helped lift him out of the depression]").

### Being part of something bigger

This theme describes the experience of being part of a larger system, belonging to something more than separate, individual lives as beneficial in coping with late-life adversity. This was achieved through a range of experiences including belief in a greater force, viewing adversity as a chance to grow, preservation of roles in life and participation in meaningful activities. This links to the meta-theme 'redefining the self' through the internal strength and external support garnered from these larger systems. Within this theme fell four sub-themes entitled 'Having faith,' 'Adversity as opportunity for development,' 'Identity in life' and 'Meaningful activity.'

Having faith: As outlined previously on page 65, this sub-theme linked to the theme 'Being part of something bigger' through the belief in a larger force (religious faith) which engendered a sense of inner strength and purpose to suffering. This also provided a sense of togetherness both in the relationship with the belief system (God) and also through links with the faith community.

Adversity as opportunity for development: As outlined previously above, this sub-theme linked to the theme 'Being part of something bigger' through the view of adversity as a chance to develop in new areas of life, and though these experiences to be involved within larger communities.

Identity in life: This links to the preservation or development of identity in life, through roles in employment, volunteering, caring, or leisure activities, which contribute to a sense of a *'new place within relationships'* ("She's always been close to me...but it's brought us even closer," "I visit her [the widow of his close friend]...to see how she is, make sure she isn't lonely," "really important 'spice of life' meeting new people"), contributing towards a sense of *'self-worth'* ("[of his continued role as photographer] Doing something worthwhile...secrets of life for work to be for you...the satisfaction," "[on retirement] painted 6 of the neighbour's houses...approached by one of my old friend's son's to come and work for him, don't do it for the money," along with a *'sense of mastery'* in life, being good at something ("Dominos and 5s&3s I'm good at, use your head," "[neighbour] locked herself out...I went round...managed to break her back in without damaging the door. Used a technique I learned working in probation").

Meaningful activity: This subtheme refers to the experience of engaging in meaningful activity as helping to cope with life events and difficulties in late life, for example through activities which are *'positively reinforcing'* in nature ("...owe yourself from time to time to treat yourself. I enjoy that, a self-treat. An indulgence," "People who

retire and just sit there watching TV....give up and watch their life slip away. I...go out and do things” “Enjoy researching new purchases....means we can go out to new places...fun was in the buying it...take time, look round, enjoy it,”), keep older adults ‘*physically active*’ (“Try to get out in garden every day if I can,” “going out daily...to walk or cycle up the shops here...Go round the aisles I don’t need to in Tesco’s to get my exercise”), involve a ‘*cathartic*’ process (“Darts. Ever tried playing darts?!...Take it out on the darts board, throw your damage onto the darts board. Sometimes that works well. Things happen which are so trivial but get all worked up, take it out on the board,” “I try to walk 4/5 miles every Wednesday. Helps me to chill out and relax. Helps my mood improve...cool down so I don’t do and say things I wouldn’t normally do...It helps ease my mind, mind on something else”), and have a ‘*social*’ component (“really important ‘spice of life’ meeting new people and chatting to them as we walk” “Try to socialise when I can”).

### *Being immortal*

This meta-theme highlights the sense of being immortal through having a continued presence in the world after death, to live on through a mark made on the world. Within this meta-theme fell three themes entitled ‘Being part of something bigger,’ ‘Being remembered positively’ and ‘Togetherness.’

#### Being part of something bigger

As outlined previously on pages 65 and 67, this links to the meta-theme ‘Being immortal’ in particular through ‘*having faith*’ in a greater force, which provides a sense of togetherness through membership in the larger faith community and relationship with God. Having an ‘*identity in life*’ and participating in ‘*meaningful activity*’ also link to being immortal through the larger presence one has had in the world, thus creating more experiences through which to be remembered after death.

#### Being remembered positively

This theme describes experiences in life which give assurance of being remembered positively after death, to survive in the memories held strongly by others. Within this theme fell two sub-themes entitled ‘Leaving a legacy’ and ‘Supportive positive relationships.’

Leaving a legacy: This links to engaging in ways to be remembered by constructing a legacy to be left for others to experience after death. This linked to the experience of ‘*being remembered*’ by others (“Writing poetry also to move people, for admiration from people, so they keep it. It will survive,” “writing [on a slate] all the names of the...walking club...getting people to sign it...left it on the hillside for others to see,” “writing stories...our

family heritage for the grandchildren...Hers [deceased wife] as well as mine. Part of a therapy for me...Wherever my grandchildren and great grandchildren go, like it or not, [my wife] and I go with them. Our genes go with them....In effect there is a continuum”) and also ‘*passing on wisdom*’ to others (“All this knowledge and experience walking around [retired older adults]...to pass their knowledge on”).

Supportive positive relationships: This theme is outlined in full below and describes the role of close relationships with others. This links to the meta-theme being immortal through the sense that supportive others are more likely to hold positive memories of us, which may survive after our death.

#### Togetherness

This theme describes the sense of togetherness which comes from supportive relationships with others, which links to being immortal through the experience of connectedness to others who are likely to survive after our own death. Within this theme fell one sub-theme entitled ‘Supportive positive relationships.’

Supportive positive relationships: This theme describes supportive relationships as helping to cope with adversity through the sense of ‘*togetherness*’ (“Being together has helped. I’ve often said would you like a flat on your own, he wouldn’t,” “When...you hear people’s stories and experiences, people go through it too, know you’re not alone”), ‘*emotionally supportive*’ nature (“Always someone around I can talk to, would confide most things in them,”) and experience of ‘*feeling loved*’ (“General love important in development, even now in coping with this” “No such things as love when I was young, now children feel loved, they are part of my life and it works both ways”).

#### *Leaving in peace*

This meta-theme highlights the sense of leaving life in peace as being important in coping with adverse late-life experiences. Within this meta-theme fell one theme entitled ‘Togetherness.’

#### Togetherness

As outlined previously above, togetherness may contribute to the sense of leaving life in peace through emotionally supportive relationships to share the burden of adverse experiences (“When I came home [from hospital] I had them [children] all around me so it wasn’t a problem as such”), and through which to feel loved (“...children feel loved, they are part of my life and it works both ways”). Equally, a lack of togetherness may also threaten the sense of leaving life in peace, through the experience of being alone within

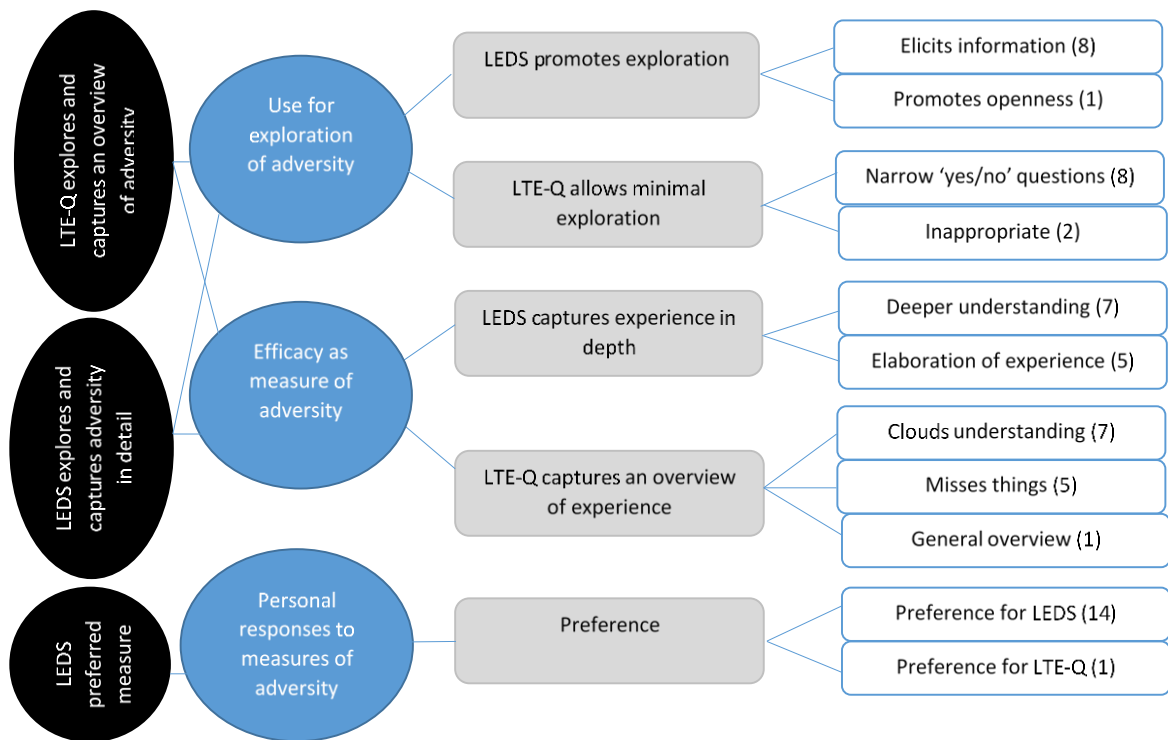
adversity (“If I’m ill I’m reluctant to let anyone know...there isn’t usually someone around to talk to, no,” “Lose...partner...no one to talk to...I’m in that position, I have nobody, feel a bit depressed and take to the bottle a little bit”).

Subjective experience of having adversity captured through different measures of adversity:  
LTE-Q and LEDS

The thematic map depicting the analysis around coping with adversity in late life can be seen in figure 12. Three meta-themes were identified as pertinent within this analysis, entitled ‘LTE-Q explores and captures an overview of adversity,’ ‘LEDS explores and captures adversity,’ and ‘LEDS preferred measure.’

*LTE-Q explores and captures an overview of adversity*

This meta-theme highlights the LTE-Q as exploring and capturing an overview of adversity. Within this meta-theme fell two themes entitled ‘Use for exploration of adversity’ and ‘Efficacy as a measure of adversity.’



**Figure 12. A thematic map to show the subjective experience of having adversity captured through different measures of adversity, the LTE-Q and LEDS**



#### Use for exploration of adversity

This theme describes the extent to which the measures were seen as exploring older adult's experiences of adversity. Within this theme fell two sub-themes, with 'LTE-Q allows minimal exploration' being pertinent to the meta-theme under discussion.

LTE-Q allows minimal exploration: This sub-theme highlights the experience of completing an LTE-Q questionnaire as only minimally exploring adversity, containing two codes of meaning around the narrow and at times inappropriate questioning. The '*Narrow 'yes/no' questions*' refers to the pre-assigned closed questions in the LTE-Q narrowing down the exploration of adverse experiences ("this [questionnaire] you're just looking at a piece of paper, and a question, you've just got to give one particular answer," "Just yes...no. Hate these! You can't say the things you're wanting to say"). These questions were also experienced at times as '*inappropriate*,' in particular for the older adult group ("...inappropriate for a retired pensioner," "...some LTE-Q questions aren't relevant to myself").

#### Efficacy as a measure of adversity

This theme highlights older adult's views of how effective each measure was at measuring their experience of recent adversity. Within this theme fell two sub-themes, with 'LTE-Q captures an overview of experiences' being pertinent to the meta-theme under discussion.

LTE-Q captures an overview of experiences: This sub-theme relates to the LTE-Q being experienced as failing to capture many adverse life events and difficulties, although providing a general sense of adversity nonetheless. Within this theme fell three codes of meaning entitled; Clouds understanding, Misses things and General overview. '*Clouds understanding*' refers to the closed responding elicited through the LTE-Q as clouding the understanding of adverse experiences ("some LTE-Q questions... could be misconstrued," "You can tick a box but it won't put across what you're trying to say...misses the point"). '*Misses things*' relates to the LTE-Q as missing experiences of adversity ("...doesn't capture my experience and suffering in the same way on the form." "Just ticking a box doesn't really capture it"). While failing to capture some aspects of adversity the LTE-Q was viewed as giving a '*general overview*,' highlights that although adversity is only minimally explored, the general sense of life adversity experienced is still captured through the measure ("you might get a feel of what's going on").

### *LEDS explores and captures adversity*

This meta-theme highlights the LEDS as exploring and capturing adversity in detail. Within this meta-theme fell two themes entitled ‘Use for exploration of adversity’ and ‘Efficacy as a measure of adversity.’

#### Use for exploration of adversity

This theme describes the extent to which the measures were seen as exploring older adult’s experiences of adversity. Within this theme fell two sub-themes, with ‘LEDS promotes exploration’ being pertinent to the meta-theme under discussion.

LEDS promotes exploration: This sub-theme describes the LEDS interviews as promoting the exploration of adversity, through the one to one process of questioning to elicit further information and promoting open communication. Within this sub-theme fell two codes of meaning around the ability to elicit information and promotes openness. ‘*Elicits information*’ refers to the experience of a LEDS interview as eliciting further information about adverse life experiences. This involved the questioning process as prompting thought (“prompted things I would have forgotten about when I completed the questionnaire”), being exploratory in nature (“could explore more”) and providing the ability to expand when responding (“...can’t expand on anything when you’re just ticking a box”). In doing this, it was also considered not all information gained was relevant to the investigation (“Downside of LEDS is that you get extraneous information alongside that”). ‘*Promotes openness*’ highlights the process of having a one to one LEDS interview as opening more honest communication around adverse experiences than the LTE-Q questionnaire (“Wouldn’t have been as honest on paper...been absolutely honest here”).

#### Efficacy as a measure of adversity

This theme highlights older adult’s views of how effective each measure was at measuring their experience of recent adversity. Within this theme fell two sub-themes, with ‘LEDS captures experiences’ being pertinent to the meta-theme under discussion.

LEDS captures experiences: This sub-theme involved older adults feeling the LEDS interview captured their experiences of adversity, by gaining a thorough understanding and through the elaboration of detail around adversity experienced. Within this sub-theme fell two codes of meaning around having a deeper understanding and the elaboration of experience. *Deeper understanding* refers to the LEDS gaining a deeper understanding of adverse experiences than the questionnaire (“...you can go more deeply into it,” “greater understanding,” “...listen to you and where you’re coming from, may understand a bit

better,” “...may learn more than just reading my name yes or no on that form”). *Elaboration of experience* links to the LEDS interview process as allowing experiences to be elaborated upon (“can get your point of view over better,” “...more rounded picture,” “...think perhaps of a different way of putting the adversity”) with the potential for weighting (“...interview is better as...can weight things”) and linking (“...link things together”) experiences.

#### *LEDS preferred measure*

This meta-theme highlights preferred measure of adversity as experienced by older adults in this research. Within this meta-theme fell one theme entitled ‘Personal responses to measures of adversity.’

#### Personal responses to measures of adversity

This theme highlights the different personal responses older adults had to the measures of adversity used, with the one sub-theme covering ‘preference.’ It must be noted that this theme does not reflect personal responses to the analysis (which participants were unaware of) but more specifically to the process of measurement.

Preference: This sub-theme grouped the personal preferences to measures of adversity, with preference for LEDS and preference for LTE-Q represented as codes of meaning. ‘*Preference for LEDS*’ involved numerous responses to the LEDS as being a preferential measure of adversity. This was represented by repeated positive and preferential responses to participation in a LEDS interview (“I prefer the interview,” “...would pick an interview every time,” “Much better to have a one to one interview”), as well as the interview process being considered cathartic (“Feel better talking to you,” “wouldn’t have sat and cried with a questionnaire...get it off your chest”). At the same time, one participant conveyed a ‘*preference for LTE-Q*’ which was experienced as an adequate or ‘good enough’ measure of adversity (“Questionnaire probably would have done”).

## DISCUSSION

### Late-life depression

#### *Prevalence*

This study aimed to explore the prevalence and characteristics of depressive symptoms across stages of older adult life within the UK. The results showed 31% of older adults experienced some symptoms of depression (12% clinically significant symptoms, plus 19% mild depressive symptoms), which is in line with other reported findings

internationally (Blazer, Hughes & George, 1987; Kaji et al., 2010; Park, Kim, Kim et al., 2012).

The results show a slightly lower prevalence of 12% for clinically significant depression within the UK over 65 age group than previously reported in research carried out in the late 1990's; reporting a prevalence of 15% (Carter et al., 1999), or the early 2000's; reporting a prevalence of 18% (Zivin, Llewelyn, Lang, et al., 2010). Similar reductions in prevalence rates of clinically significant depression have been reported over the last couple of decades within the USA (Blazer, 2003a). This finding may reflect the changing trends in depression prevalence over time, perhaps due to the increasing treatment of depression in late life. Over the last 20 years within the UK prescriptions of SSRIs for older adults have been steadily increasing (Morgan, Griffiths, & Majeed., 2008), while referrals for psychological support have shown a more recent increase in line with the IAPT roll out (Beechend, Santos, Hughes et al., 2012). It is also possible some of the variation in these results are due to differences in outcome measures used within this study (PHQ-9), that of Carter et al., 1999 (GP diagnosis), or Zivin et al., 2010 (CES-D). Prevalence rates of clinically significant depression within the USA are seen to vary significantly depending on the measurement tool used; 7% using the CIDI-SF (Mojtabai & Olfson, 2004) and 15% using the CES-D (Zivin et al., 2010).

Despite these factors, the rate of clinically significant depression in this study was significantly lower than those of 20-30% published in other research (Castro-Costa, Dewey, Stewert et al., 2007; Sale et al., 2008; Hermans & Evinghaus, 2012). It may be the data reported in this research is an underrepresentation of the true depression prevalence rate within the population. For instance, potential participants with depression are less likely to respond to questionnaires (Sales, Plomondon, Megid et al., 2004), and the PHQ-9 used was a self-report rather than a diagnostic measure of depression. Despite this, our questionnaire response rate of 92% exceeds average response rates to clinical psychology surveys (Van Horn, Green & Martinussen, 2009), and indeed the gold standard (80%) expected within pharmaceutical research (Fincham, 2009). In addition, prevalence of depression using the PHQ-9 has been well validated against various other diagnostic tools (Priyanka, Boyle, Tu, et al., 2010).

There are, however, other important differences between this research and other studies which may account for the lower prevalence of depression. For example other research studied older adults with co-morbid health conditions (Sale et al., 2008; Hermans & Evinghaus, 2012) and poorer health is thought to increase risk of depression (Park &

Unutzer, 2011). This relationship has been examined more specifically in a comparison of over 65's in the UK and USA, which found increased prevalence of depression was linked to higher levels of functional impairment (activities of daily living), which was independent of chronic health conditions themselves (Zivin et al., 2010).

In a large study within continental Europe the SHARE project aimed to examine many confounding variables in depression prevalence. This study found significant variation in depression prevalence between European countries with the lowest prevalence (19-21%) reported in Hellenic countries; Greece, and Germanic countries; Sweden, Denmark, Netherlands, Germany, Austria and Switzerland, with significantly higher prevalence (28-33%) reported in Latin countries; France, Italy and Spain (Castro-Costa, Dewey, Stewart et al., 2007). This elegantly designed study controlled for the effects of age, gender, education and cognitive function, ruling these out as accounting for the difference in prevalence rates. It is possible that the socioeconomic status of countries within this study may account for some of this variation, for example through public policies impacting on pension provisions which alter quality of life in older adulthood. Older adult's socioeconomic position has been shown to be another risk factor for depression, accounting for variation in depression prevalence over various studies (Zivin et al., 2010; Almeida, Pirkis, Kerse, et al., 2012).

Differences were observed in this research showing higher incidences of depression in women, in line with other cited research (Carter et al., 1999; Alexopoulos, 2005), and also for the later stages of life (75+ years) in line with other published data (Henderson et al., 1997; Palsson, Ostling & Skoog, 2001). The reason these differences failed to reach significance may be due to the sample size (for age in particular) or confounding variables which are known to influence the relationship between age and depression. For example, other research has shown the higher prevalence of depression in older age groups becomes non-significant when functional limitations, cognitive impairment and lower socioeconomic position are controlled for (Blazer, Burcheu, Service & George, 1991; Zivin et al., 2010).

### *Characteristics*

This study found the most commonly reported symptoms of depression among older adults were somatic symptoms, with 53.75% reporting 'feeling tired' and 49.79% reporting 'trouble sleeping'. This is in line with findings from the SHARE project, which found fatigue and sleeplessness were consistently the highest reported depressive symptoms among older adults in ten countries across continental Europe (Castro-Costa, Dewey, Stewart et al., 2007). Interestingly, they found a higher prevalence of these symptoms in

women, a finding which has been reported previously (Prince, Beekman, Deeg, et al., 1999; Silverstien, Edwards, Gamma, et al., 2013) and may contribute towards the higher prevalence of depression observed for women in the current research.

It is important to note that the extent of these somatic symptoms may not all be attributable to depression. Tiredness is known to increase with the healthy ageing process, and is independently associated with pain and comorbid health conditions, as well as depression (Avlund, Rantanen & Schroll, 2007). Changes to the sleep cycle involving older adults sleeping less is also known to be associated with comorbid health conditions, physiological and cognitive changes with age (Kamel & Gammack, 2006). It is also possible that depressed participants attribute normal ageing-related physiological changes as pathological symptoms of depression, hence increased reporting of these symptoms in depressed individuals.

#### Adversity in late-life

##### *Prevalence*

This study set out to measure the adversity experienced by older adults over the previous year using both a checklist and interview measure. The prevalence of adversity was measured in phase 1 of the study using the LTE-Q checklist, revealing 41% of older adults experienced in excess of one life event in the reporting period, in line with earlier UK research within the over 65 population using the LTE-Q (Prince et al., 1997) and the LEDS (Butler, Orrell, Ukoumunne et al., 2004). It must be acknowledged that this prevalence is lower than other reported findings using checklist measures in the older adult group, which report between 87-92% of participants experiencing recent adversity (Sale et al., 2008; Hermans, Evinghaus & Hilgenkamp, 2012). It is possible that this disparity is due to methodological differences between these studies and the current research; younger cohorts of older adults (<65 years), recruitment of participants with comorbid health conditions or cross cultural differences with the Netherlands and Canada. It is equally possible that our finding underreports the true prevalence of life adversity within the population due to the different checklist measures used.

Phase 2 of this research using the LEDS interview found a larger prevalence of adversity; 84% of participants experienced in excess of one life event over the reporting period, in line with international research using interview measures within both the over 65 population (reporting 80% prevalence – Hardy et al., 2002) and the working age population (reporting 81% prevalence – Leskela, Ryttsa, Konulainen et al., 2006). This LEDS analysis

also revealed a much lower proportion, 21% of older adults, experienced a severe event in the previous 12 months. This is in line with earlier research reporting 23% prevalence of severe events in the UK using LEDS interviews with the over 65's (Murphy, 1982) and working age populations (Hatcher & House, 2003). It is notable that the prevalence of severe events in this study is lower than those found using the LEDS with clinical populations of older adults; with psychiatric problems (Murphy, 1982) or dementia (Orrell & Bebbington, 1998; Butler et al., 2004; Waite, Bebbington, Skelton-Robinson et al., 2004).

The phase 2 LEDS research also revealed the prevalence of difficulties was much higher in late life than events, with all older adults (100%) reporting in excess of one difficulty in the preceding 12 months, while 68% reported experiencing marked difficulties within this time period. This finding is distinctly higher than other UK research published using the LEDS with this age group which reported between 20-40% of older adults experienced marked difficulties, depending on their psychiatric status (Murphy, 1982). This may reflect the changing pressures on older adults in recent years particularly in line with the economic crisis and associated increased cost of living, particularly in relation to rising fuel and food bills.

### *Characteristics*

In terms of the characteristics of adversity experienced in the older adult group, the phase 1 LTE-Q analysis unsurprisingly revealed the most commonly experienced events were bereavements (concerning immediate family, relatives and family friends) and health events (concerning the self and others), closely mirroring previous research using the LTE-Q within the over 65 population in the UK (Prince et al., 1997), as well as international research using the Life experience survey in both the USA (Nacoste & Wise, 1991) and Canada (Sale et al., 2008). The phase 2 LEDS analysis showed agreement with the LTE-Q, also revealing health and bereavement events to be among the most commonly reported. This has been found previously using the LEDS in an older adult population within the UK (Murphy, 1982), as well as using other interview measures in the USA (Hardy et al., 2002) and Japan (Kaji et al., 2010). The in depth LEDS interviews additionally revealed commonly reported events in late life to include those concerning other relationships and reproduction events. This may reflect relationships with friends becoming more distant in late life when older adults move house to become closer to children, as well as the events surrounding the advent of becoming a grandparent.

The characteristics of difficulties measured using the LEDS showed concordance with the events experienced during late life, with difficulties around health, other

relationships and housing being most commonly reported, a finding which is mirrored in earlier UK research (Murphy, 1982).

### Depression and adversity in late life

#### *The association between adversity and depression*

This study provides a unique insight into the association between adversity and depression in late life within the UK, utilizing both a large scale survey and in depth interviews, while interpreting the data through complementary quantitative and qualitative analyses. The data overwhelmingly points to how well older adults cope with adversity in late life. The majority of older adults who experience adverse life events and difficulties cope well and remain free from depression.

The phase 1 analysis of LTE-Q and PHQ-9 data revealed a significant association between depression and recent adversity. A larger portion of depressed participants experienced recent adversity (54%), as compared with non-depressed participants (38%). The regression model showed recent adversity increases the odds of an older adult having depression, with adversity alone accounting for 1.8% of the variance in depression. This finding is supported by various other checklist research in the field (Prince et al., 2007; Sale et al., 2008; Kaji et al., 2010; Hermans et al., 2012). This may be explained in terms of poor adjustment to the changes required following disruptive experiences of adversity (Holmes & Rahe, 1967; Dohrenwend & Dohrenwend, 1978; Creed, 1985), or the meaning within adverse experience inducing negative emotional symptoms (Brown & Harris, 1978a; Finlay-Jones & Brown, 1981; Fridja, 1986). Late-life adversity may also link with depressive symptoms through the experience of learned helplessness (Seligman, 1972), whereby older adults become increasingly more passive due to the belief that initiating any action is pointless in the context of continuing life events and difficulties. Events characterized by declining health and disability, shown in this study to be the most prevalent in late life, may also increase the risk of depression through reduced engagement in valued leisure activities, socializing and a decrease in the availability of emotional support (Blazer, 2003a).

It is important to note this relationship is bidirectional, depression may increase the likelihood of adverse experiences, for example depression is known to complicate the course and recovery from physical illnesses (Frasure-Smith, Lesperance & Talajic, 1993; Whyte, Pollock, Wagner, et al., 2001), as well as lead to disability through depression-related cognitive impairments in late life (Alexopoulos, Vrontou, Kakuma, et al., 1996). Additionally, biological changes associated with late-life depression such as variations in



genetic (Nebes, Vora, Melzer, et al, 2001), neurotransmitter (Sheline, Mintum, Moerlein., et al., 2002), and neuroendocrine systems (Davies, David, Mathe, et al., 1984) may increase the susceptibility to depression following the experience of adversity, akin to the gene-environment interaction known to increase risk of depression in working age adults (Caspi et al., 2003).

When additional variables were included into the regression model the association between adversity and depression was shown to stand for people in the earlier, but not later stages of older adult life. To the author's knowledge this is a unique finding in the literature. This finding may be attributable to the changes in the kinds of adverse experiences we encounter with age. For example, reflecting the important transitions around retirement more likely to be experienced in the early stages of older adult life. It is also possible that depression is less socially-associated in late life due to developmental changes in coping behavior as we age. One theory suggests as we age our coping resources develop, for example increased self-esteem and emotional maturity help to protect against the negative impact of adverse experience (Gove, Ortega & Style, 1989; Janoff-Bulman, 1992). Another theory suggests that as we go through life and survive exposure to adverse life difficulties without becoming depressed, we become less likely to have a new episode of depression in late life (Yang, 2007). It may also be noted that this finding could be linked to the small sample size in the late stages of older adult life, meaning the analysis lacked statistical power.

This association was also shown to stand for female, but not male participants. To the author's knowledge this is a unique finding in the older adult literature. This finding is supported by the view working age women are thought to be at greater risk of depression following life adversity, particularly for women in couples with highly differentiated gender roles (Nazroo, Edwards & Brown, 1997). This role differentiation is thought to provide less scope for sharing the burden of adversity, whereby men are more likely to emotionally distance themselves from adverse experiences while women are more likely to personalize and self-blame. It has also been suggested that women experience more life adversity and have less control over these experiences due to the lower degree of financial resources or social power as compared to their male counterparts (Nolen-Hoeksema, Larson & Grayson, 1999). It is possible these factors were influencing the risk of depression in the depressed older women in this study, although it is also important to note the increase in the prevalence of adverse experiences for women in this research, which may have influenced the findings.

### *The characteristics of adversity and depression*

The descriptive analysis of the smaller phase 2 LEDS and PHQ-9 data revealed the frequency of severe life events was shown to be low over both groups, although slightly higher for the non-depressed participants. This finding is in contrast to previous research which found depressed older adults experience significantly more severe events than controls, using both the LEDS (Murphy, 1982; Orrell & Bebbington, 1995; Orrell & Bebbington, 1998) and other measures of adversity (Leskela et al., 2006). A key methodological difference is that our study was unable to look solely at events which preceded depression onset. Our study was examining the maintaining effects of adversity instead of triggering effects. It is possible that severe life events have a more significant role in the onset than maintenance of depression.

Interestingly, although the prevalence of difficulties was high across both groups there were more severe (marked) difficulties observed in the depressed group. This is in line with other LEDS research in the older adult group (Murphy, 1982; Murrell & Norris, 1984; Davies, 1994a; Davies, 1994b). It is possible that severe difficulties have a more significant role in the maintenance of late-life depression, while severe events have a role in triggering depression. This would reflect the ongoing adverse situations particularly associated with late-life such as caregiving (Kramer & Lambert, 1999), functional decline and disability (Bruce, 2002). This could be explained using the stress paradigm (Holmes & Rahe, 1967; Dohrenwend & Dohrenwend, 1978; Creed, 1985) whereby older adults already have depleted resources to cope due to the presence of ongoing low threat difficulties, putting them at increased risk of depression when they are required to adjust in the event of severe life difficulties.

The portion of low threat (non-marked) difficulties were observed to be higher in the non-depressed group, in contrast to our hypothesis, checklist research in older adults (Landreville & Vezina, 1992) or LEDS research in working age groups (Traviss et al., 2012). It is possible that this in-depth investigation using the LEDS shows how adversity in late life is characterized in general by the presence of many low threat difficulties, but this does not have a specific role in depressive experience. It is also possible that as the sample size of this part of our study was small, we therefore failed to capture the significance of low threat difficulties in the population as a whole.

The depressed LEDS group were also known to experience a slightly higher incidence of loss events, interpersonal difficulties and positive events than their non-depressed counterparts. The increase in loss events is both in line with our hypothesis and

complimented by other literature in the field which suggests loss events are linked to the onset of depression (Finlay-Jones & Brown, 1981; Surtees, 1997). The significance of this finding is highlighted by Brown & Harris (1978a), who describe loss and disappointment as; ‘central features of most events bringing about clinical depression.’ This finding could be explained in terms of psychodynamic theory, which suggests depression is a pathological process whereby people are stuck in a state of mourning for an internalized lost object (Freud, 1917). To the author’s knowledge there are no studies supporting the role of loss events in the maintenance of late-life depression. The higher incidence of interpersonal difficulties in depressed older adults is to the author’s knowledge a unique finding in the literature, but can be supported by research in working age adults (Brown et al., 2010). Although interpersonal difficulties are likely to be extremely stressful for some older adults and may trigger the onset of, or maintain depressive experience, it is possible that depressive symptoms may be the cause of interpersonal tensions and burdens for people around them (Moos et al., 1998). For this reason, and due to the lack of ability to include this factor in a controlled analysis, interpersonal difficulties will not be considered as a potential risk factor in depressive experience in late life. More puzzling was the increased prevalence of positive events in the depressed group, which was contrary to our hypothesis. The lack of information on the content of positive life events leaves this finding open to discussion. Although research has found positive life events are linked to greater remission rates from depression (Harris et al., 1999), due to the cross-sectional nature of our research it was impossible to determine any effect on depressive experience from follow-up measurement. It is possible this finding was observed due to biased sampling, if our depressed interviewees were more likely to be positive about outcomes and encounter positive experiences, or equally due to chance as the sample size for this part of the research was small.

The LEDS analysis also showed the depressed group to have fewer variables indicating social emotional support. They reported fewer confidants, were less able to confide in the confidants they did have, went out and spoke to people less frequently and were rated by researchers as being more socially isolated than non-depressed individuals. Although this was only based on a descriptive analysis due to the small sample size, the finding has been supported by other research in both older adults (Murphy, 1982; Emmerson, Burvill, Finlay-Jones, et al., 1989; Prince et al., 1997) and working age adults (Brown & Harris, 1978a; Leskela et al., 2006). Theoretically this could be explained in terms of the stress buffering model (Cohen & Wills, 1985), in particular the finding that

emotional support acts as a reserve buffering against the negative effects of adversity and help people to cope more effectively (Kessler & McLeod, 1985). In the absence of emotional support, older adults may have fewer opportunities to express negative emotions, share the burden of responsibility for adverse experience or receive reassurances from others around them. Lowenthal (1965) further specified the view that lack of confiding relationships put people at risk of poor mental health in late life, suggesting it is older adults who have desired and pursued emotionally close relationships, but lacked them in life who are particularly at risk. Those at increased risk of poor mental health would therefore not include older adults who make a choice to be socially isolated in life, or who have had and lost close confiding relationships. Moreover the increase in risk may link to the capacity for emotional closeness with others (Holmes, 2001), or the ability to feel close to an internalized other (Bowlby, 1988), which are theoretically rooted in attachment theory (Bowlby, 1969; Ainsworth, 1989).

Our research demonstrates older adults experiencing adverse life experiences may be at increased risk of depressive symptoms, with marked difficulties and lower social emotional support playing a particular role in this relationship.

#### Measures of adversity in late life

##### *LTE-Q provides an overview but misses things*

Both quantitative and qualitative data showed the LTE-Q to provide a good overview of adverse experience. In particular this was found for the characteristics of adversity experienced, for example showing health and bereavement to be the most commonly rated adverse experiences in late-life. This finding is supported by research in the working age population which found the LTE-Q to have a good degree of concordance with the characteristics of LEDS measured adversity (Brugha et al., 1985). This finding makes sense methodologically as the questionnaire is designed for brevity to be used in large scale research, and therefore to provide an overview of experience.

In terms of prevalence, unsurprisingly the LTE-Q was shown to be a less sensitive measure of adversity, capturing less than half the adverse experiences within most categories of adversity. This finding was mirrored in the qualitative data which suggested the LTE-Q failed to capture some aspects of their adversity which were covered in the LEDS interview. This was explained through the minimal exploration provided by the LTE-Q using narrow and at times inappropriate questions, which led to things being missed and understanding compromised. This finding is supported by other research comparing another

checklist measure (LEC) to the LEDS in the adolescent population, which concluded many significant experiences of adversity were missed (Duggal, Malkoff-Schwartz, Birmaher, et al., 2000). Interestingly, this research found the kinds of adverse experiences missed by the checklist measure included a significant portion of events considered to have potentially provoked the onset of depression. Due to the cross-sectional design of our research there was no opportunity to investigate this assertion.

#### *LEDS provides an in depth account*

The qualitative analysis also revealed older adults felt the LEDS captured adversity in depth, through a thorough exploration using techniques to elicit recall, which they felt would lead to deeper understanding of their experience. It is possible that the interview approach could be particularly beneficial for measurement of adversity in late life due to the ability of the measure to support recollection of recent long term memory, which is known to decline with the healthy ageing process (Craik, 1991). Whereas the questionnaire provides limited prompts for each category of adversity, the interview schedule provides multiple prompts within in each category, providing additional opportunities for recollection.

Although the LEDS was the measure of choice for older adults in this study, it must be noted that this judgment was on the basis of the measurement process (taking part in an interview as opposed to filling out a questionnaire) rather than the measurement outcome per se. Despite this there are clear reasons why the LEDS is considered the ‘gold standard’ for measuring adversity (Anderson, 2006), and this study provides initial support for this being particularly important in the older adult group.

### Adversity, depression and coping in late life

#### *Redefining the self*

##### Late-life adversity

Qualitative data revealed late-life adversity involved redefining the self, due to the changing position in the world experienced through social, retirement, and housing transitions, as well as declining health. Transitions theory suggests life events involving transition are significant in life due to the acquisition of new roles, re-definement of previously held roles or change in role salience (Cowan, 1991). Social transitions are shown to be particularly pertinent in late life as sudden changes in social context such as; loss of a close other (in widowhood), decline in the quality of relationships (due to conflict or

dependence) or transition into a caregiving relationship are linked to depressive experience (Kramer & Lambert, 1999; Blazer & Hybels, 2005). Evidence also supports the significance of the retirement transition, which is thought to be particularly pertinent when work has been a self-defining feature in life (Carmichael et al., 2013b), and may impact on older adults negatively through decreased social participation and devalued sense of identity (Schaie, 1992). Housing relocations are also considered be a particularly stressful event in late life, linked to both positive and negative psychological outcomes (Armer, 1993). It is likely social, employment, housing and health transitions in late life are experienced as interlinked, for example research has found exits from the labor market in late life are driven by declining health and caring responsibilities, as well as by retirement choice (Carmichael et al., 2013a).

#### Late-life adversity and depression

Depressed participants in our research reported adverse experiences linked to the feeling of powerlessness, being deprived and entrapped within the reality of late life changes. Depletion theory suggests as we age we encounter more frequent losses, bodily changes and disease, which are experienced as both internal and external depletion (Bahe & Bahe, 1990). The recognition of the realities and losses associated with ageing is thought to facilitate the choice to establish more realistic life goals or compensate for lost goals, both which are likely to contribute to a sense of self-redefinition.

The sense of powerlessness highlighted in our research is supported by the finding that experiences of late-life adversity are more chronic and less amenable to change than those experienced by younger controls (Isaacowitz & Seligman, 2002), engendering a sense of being powerless to change them. Equally depressive experience is known to contribute to the generalized perception of situational hopelessness and thoughts of problems being unsolvable (McNaughton, Patterson, Irwin, et al., 1992). Research has further established chronic late-life difficulties are appraised as threatening and accompanied by a lack of belief in resources to cope, resulting in avoidance coping strategies and increased risk of depression (Moos, et al., 2006). This suggests the sense of powerlessness (belief in lack of resources to cope) may lead to less effective coping appraisals and strategies which impacts on the outcome of late-life adversity.

In line with the experience of powerlessness, research has suggested lack of perceived control (or belief that actions will alter outcomes) is a key mediator in the relationship between adverse experience and depressive symptomatology (Price et al., 2002). Within late life this relationship has been examined further, revealing adverse

experiences to be a key determinant of decline in personal control, which in turn acts as a vulnerability factor for negative psychological outcomes (Cairney & Krause, 2008). This can be linked to the future decline described in this research and associated functional limitations, leading to a sense of reduced control, or powerlessness. As discussed previously, learned helplessness theoretically links lack of perceived control with depressive experience following adverse contexts (Seligman, 1972; Blazer, 2003b). The idea being that the ongoing nature of adversity leads to the expectation that any efforts towards action are futile, with depression here being the behavioral response to the ongoing nature of late-life adversity. Complimentary research has shown (in contrast to our concept of powerlessness) environmental mastery, or the ability to manipulate and control the environment, having a sense of competence in the world is linked to positive outcomes in later life (Ryff, 1989a,b).

#### Coping with late-life adversity

Pertinent to coping with late-life adversity was the intention towards self-redefinition, involving acceptance and continual adjustment, while being flexible with self-identity. This process was experienced as involving the benefits of a mindful and positive outlook, and an attempt to make the best of the situation. Research has shown periods of positive emotional experience are more likely to endure and be experienced as meaningful by older adults, who also report increased positive affect with age (Mroczek & Kolarz, 1998). This finding can be taken as support for the emphasis on older adults 'making the best' of their current situations in our research, which may help to reduce the risk of depression onset or maintenance. In addition, positive reappraisals and approach coping styles (cognitive restructuring, seeking information and negotiation) following ongoing difficulties in late-life have been associated with self-reported gains from those difficulties (Moos et al., 2006). This may link to an increased sense of hope and control in the face of adversity, as opposed to the powerlessness experienced by the depressed older adults in our research.

We also presented a focus on adversity being an opportunity for developing a new self-identity, branching into new skills, roles, and relationships. The experience of growth, in which older adults' lives may be enhanced following adversity is well documented (Hardy et al., 2002; Helgeson & Lopez, 2010). It has been suggested that as adversity threatens our assumptions about the self and the world, growth or successful adjustment following such experiences are thought to involve processes of restoration and/or reconstruction of self-assumptions (Janoff-Bulman, 1992). Research further examined contributors to this process of growth and found social resources to be a key component

(Tedeschi & Calhoun, 2004). The particular benefit of social resources are thought to be the opportunities to disclose adverse experiences to others, which helps in cognitively processing the event, promoting self-reflection and providing time to plan future changes. This finding is supported by the large scale prospective SHARE project, which suggests participation in socially productive activities such as volunteering, in particular those involving reciprocal exchange improves quality of life in older adults across Europe (Siegrist & Wahrendorf, 2009).

Theoretically the ability to find acceptance and adjust following adverse experience can be situated within Erikson's final developmental stage in life 'ego integrity vs despair.' In this stage of life, ego integrity involves an acceptance of the current self as well as acceptance of the self in the past, looking back over life (Erikson, 1959). Self-acceptance has further been identified by Ryff as a central feature in the model of successful ageing (Ryff, 1989b), along with the linked concept, sense of coherence. This latter concept additionally refers to viewing life experiences within the context of the self and the world, considering how comprehensible, manageable and meaningful experiences are, and acts as a motivational force for coping responses (Antonovsky, 1987). Sense of coherence has been linked to better perceived mental health among older adults (Nygren et al., 2005), and may contribute to older adults' ability to accept and adjust to adverse experiences in late life.

It is interesting to consider the coping styles older adults use to promote adjustment in the face of late-life adversity. Research has examined this process and put forward the idea of 'selective optimization with compensation,' where compensation involves new ways of meeting goals, and optimization involves increased time and effort expended to meet goals (Lang, Reickhmann & Baltes, 2002). Both these strategies could be described as being part of the 'assimilative mode' (Brandtstadter & Greve, 1994) where older adults make efforts to modify their current situation in line with valued goals, in order to maintain self-identity and esteem. It is recognised that contextual changes sometimes outweigh the efforts made to assimilate in line with previously held goals, and suggested that an 'accommodative mode' is used to adjust goals in line with contextual constraints, in order to overcome feelings of hopelessness and depression, hence regaining a sense of achievement (Brandtstadter & Greve, 1994). Both the assimilative and accommodative style of coping are associated with maintained wellbeing and reduced risk of depression in older adults (Bailly, Joulain, Herve et al., 2012), and likely are beneficial in adjusting to a changing position within the world and sense of powerlessness highlighted in this research.



### *Leaving in peace*

#### Late-life adversity

Experiences of late-life adversity were felt to have polar influences on the sense of leaving life in peace. Some experiences were felt as increasing the sense of peace towards the end of life, when declining health is no longer perceived as unsettling and death becomes a preference. Other experiences were felt to create a disharmonious sense of leaving life, when deteriorating health and death are seen as unsettling, and fears surround future care needs or being left behind by others. The sense of leaving life in peace may be affected by the kinds of adversity older adults experience and also the way these experiences are remembered. Erikson suggested adjustment to change and loss is the most important and difficult developmental task in adulthood (Erikson, 1964), which we described as being prominent features of late life adversity. As a way of coping with these experiences in late life, a natural reaction is to begin to look back over life (reminisce) and consider the meaning held within it (Parker, 1995). Erikson's stage of 'ego integrity vs despair' involves a deep introspection and attempt at reconciliation with life's perceived successes and failures (Erikson, 1959). The successful working through of this conflict results in a deep sense of meaning in life, which would likely produce the sense of leaving in peace described in our research. When this conflict can't be worked through (due to difficulties making sense and reconciling past events), strong negative emotions and despair arises, likely to create a sense of leaving life in disharmony. It is suggested that reminiscing over the past may be done in different ways (Cappeliez & O'Rourke, 2006), with one specific form of reminiscing, 'death preparation,' involving a way of looking back over the past which engenders a calm and accepting attitude towards our own mortality (Korte et al., 2011), likely creating the sense of peace we describe here. Other research has suggested that older adults who show an inner struggle with 'existential regret,' involving intrusive thoughts around missed opportunities from the past, have poorer outcomes following adverse experiences (Reker, 2008).

The sense of disharmony around death and dying highlighted in our research may be situated in our current cultural context. Attitudes towards death and dying over the last 1000 years were summarized by Ariès (1981), who talks of the shift from a 'tame death' experienced in medieval times to the 'invisible death' we have today. This work suggests Christianity in medieval Europe tamed the concept of death, as death and dying were seen as transition to eternal life, being communal events and surrounded by specific practices. The contrast is made with the loss of spirituality in modern Europe, which has seen death

culturally denied of existence, experienced without communal processes to give it meaning, and so becomes more terrifying and overwhelming due to the sense of invisibility in our cultural world. This may contribute to the fears around declining health and death described by the older adults in this research.

#### Late-life adversity and depression

The depressed older adults described interpersonal difficulties such as ongoing conflicts or family concerns led to the experience of aloneness, which contributed to a disharmonious sense of leaving life. This finding is supported by UK research which has found loneliness and social support deficits (seeing a relative less than once per week, unable to identify supportive neighbors, having one or less supportive friends, upset or bother in relationships with a child, or being unsatisfied with the support from friends) to be the two most striking risk factors for depression (Prince et al., 1997). This study concluded that functional decline leading to immobility, isolation within the home, reduced contact with emotionally supportive friends and a reduced sense of community are underlying mechanisms for the onset of late life depression. Further research in Japan has found an association between depressive symptoms and stress in relationships with relatives, colleagues and neighbours, with the strongest association being with the experience of having no one to talk to (Kaji et al., 2010). Both these studies support the experience of interpersonal conflict and aloneness as pertinent to depression as described in our study.

It is also possible that the style of reminiscing over adverse interpersonal experiences (such as conflict and family concerns) may link with depressive experience. A form of reminiscence called ‘bitterness revival’ has been described which involves negative memories of one’s self in the past constantly being brought up, without being integrated into the sense of self (Korte et al., 2011). Korte and colleagues’ research revealed bitterness revival is uniquely linked to depression (as opposed to anxiety) as a result of unresolved conflicts, interpersonal losses or failures experienced in the preceding years. This research suggests the impact of interpersonal conflict and aloneness on depressive symptomatology described in this research may be moderated by reminiscence style.

#### Coping with late-life adversity

Experienced as pertinent to coping with late life adversity was attaining a sense of togetherness with others, creating a sense of peace through emotionally supportive relationships to share the burden of adversity. This is supported by the finding that depressive symptoms are associated with emotionally supportive relationships (Kaji et al.,

2010), thought to both directly enhance wellbeing, thereby reducing the susceptibility to depression onset, and also serve as a buffer to aid coping with adversity and reduce the subsequent risk of depression following adverse experience (Bruce, 2002). Recent Japanese research has examined a range of social moderators on the adversity-depression relationship in late life, finding frequent emotionally supportive contacts with family members as the most significant moderating variable (Katsumata et al., 2012). This study further found the frequency of these contacts to particularly moderate the impact of adverse interpersonal events and difficulties, which suggests emotionally supportive relationships may help older adults cope with the impact of interpersonal conflict.

Theoretically the concept ‘leaving in peace’ as described here can be related back to the ancient philosophical writings of Epicurus (Jones, 1989; Yalom, 2011), who described the core desire to attain a happy life, characterised by peace, in freedom from fear or pain, and surrounded by friends. This highlights the significance of all the main components of this meta-theme, including; the sense of disharmonious-peacefulness in life, the sense of fearfulness-contentment with end of life issues and the sense of aloneness-togetherness with others.

### *Being immortal*

#### Late-life adversity and depression

Older adults with late-life depression experienced adversity which threatened immortality, raising uncertainty around their survival in the minds of others after death. This was experienced through the sense of aloneness through interpersonal conflicts and family concerns, which led to doubt around being remembered positively after death. These findings are supported by evidence that the sense of aloneness, or the linked emotional experience of loneliness is associated with late-life depression, thought to involve self-perpetuating mechanisms of reduced confidence in relationships, alienation and isolation from society (Aylaz, Akturk, Erci, et al., 2012). Research suggests it is the loss of intimate relationships which is significant in this relationship (Green, Copeland, Dewey, et al., 2002), with the loss of friends, thought to provide the most emotional support, being more pertinent to the sense of late-life aloneness (Lee, 1985).

The concept of threatened immortality is also situated within the ancient philosophical writings of Epicurus (Jones, 1989; Yalom, 2011), who posits the root of human suffering being the fear of death and our craving for eternal life. In addition, Yalom (1991) writes extensively about ‘existence pain,’ which involves the inevitability of death,

our freedom to make what we will of our lives, our basic aloneness and lack of any real meaning to life.

#### Coping with late-life adversity

Striving towards being immortal was experienced as pertinent to older adults in coping with adversity, through togetherness with others in relationships, leading to the sense of being part of larger networks with a greater certainty of being remembered positively after death. The research supporting togetherness with others has been discussed previously in our research, as has the significance of this concept historically within the writings of ancient Greek philosopher Epicurus (Jones, 1989; Yalom, 2011).

The concept of aloneness-togetherness is also put forward as a key component within the conversational model of psychotherapy (Hobson, 1985), where the patient's sense of personal being is thought to be developed (or indeed destroyed) in ways of relating to others. An aim within therapy is to create a sense of relating called 'aloneness-togetherness,' the sense of being together while standing alone, through mutual understanding and care, to allow the patient to feel accepted and understood so their sense of being is fully fostered. This therapeutic focus can help us understand the sense of togetherness highlighted by older adults within this research. Facing our own mortality is something we ultimately face alone, some may consider the ultimate aloneness. Having the sense of being together with others where we can stand alone to face our own mortality may help to foster the sense of immortality in our being with others who survive even after we are gone.

One factor which linked particularly to the sense of togetherness in our research was having faith, both through the faith community itself and in relation to god. Faith further contributes towards a sense of immortality through faith beliefs around eternal life. This finding is supported in the literature as religion has previously been described as a way healthy older adults cope with stressful life events (Hamilton et al., 2012), and linked to improved outcomes for depressed patients (Koenig, 2009). Religious older adults have additionally been found to have higher levels of perceived support than non-religious controls (Paragamet & Cummings, 2010). It is possible this may occur simply through contact with people at regular church services and events, or also be encouraged by the belief systems which emphasize a sense of relational connectedness.

Older adults also described striving for immortality through engaging in activities of self-development, through new roles and relationships, or constructing a legacy in order to cope with adverse events. This is supported in research showing engagement in exercise (Park et al., 2012; Ku et al., 2012), recreational leisure activities (Schaie, 1992) and

volunteerism (Donnelly & Hinterlong, 2009) are linked to lower risk of depression in older adults. This can be linked theoretically to the ‘ripple effect,’ the idea that each person creates concentric circles of influence on others in the world which continue to have influence for years or generations after death (Yalom, 2011). This influence is not thought to focus on a self-image or identity, but rather an idea, piece of wisdom, experience, guidance, skill or trait which passes on and spreads outwards, akin to ripples in a pond. The idea is that knowing our ripples persist, continue existing through others, fills us with a sense of satisfaction and joy, hence contributing to the sense of being immortal after death.

### Limitations

#### *Design*

It must be acknowledged that a limitation of this study was the cross-sectional design, lack of a temporal measure of variables in phase 1, and lack of participants with recent-onset depression in phase 2 to be able to calculate the temporal relationship between variables. This resulted in us being unable to draw inferences around the causal effect of adversity on late-life depression. The results were taken to reflect the effect of adversity maintaining depressive symptomatology in late life. It is also important to recognize the bidirectional nature of the relationships between variables under discussion. Although adversity is likely to trigger and maintain depressive symptomatology (which we term eventogenic depression), it is equally probable that depression triggers and maintains adverse experiences (which we term depressogenic adversity).

#### *Participants*

Participation bias likely impacted on the reported findings of this research as the sample of interest, depressed participants may have been less likely to respond to questionnaires, opt in for further research or agree to participate in interviews. The interviewees in the phase 2 sample were therefore willing to be interviewed, and may have been less depressed and more outward looking in general. This acts as a confounding variable in the research as the experience of participants unwilling to come to interviews, potentially more depressed, less outward looking and living within the most adverse contexts, were not represented in the research data.

There is also the potential for a generalisation problem as the participants were recruited from a clinical trial (CASPER). As recruitment to this trial was through GP practices the eligibility of potential participants would have been decided by GP practice staff, without necessarily having in-depth knowledge of the study. This may have

contributed to the under-recruitment of potential participants to the study in the first place which could impact on the generalisability of the findings.

### *Measures*

Measurement bias may have impacted on the data as the LEDS schedule was developed in the 70s and 80s, based on a predominantly female sample of working-age women. Some of the rating vignettes are currently outdated and not-applicable to the older adult group, which may have contributed to bias in the contextualized ratings presented in this research. Equally the PHQ-9 is a one-dimensional measure of depression, which may have contributed to biased measurement as we failed to measure the late-life variations in depressive experience, such as vascular depression (Krishnan, Hayes & Blazer, 1997), the depression-executive dysfunction syndrome (Alexopoulos, Kiosses, Klimstra, et al., 2002), or were unable to distinguish between depression which was early- or late-onset in life (Alexopoulos, 2005). It is also possible that a portion of the participants classified as depressed or non-depressed using the PHQ-9 were experiencing co-morbid mental health problems such as anxiety, which potentially impacted on the findings.

Recall bias may also have impacted on the findings as both the LTE-Q and LEDS measures of adversity relied on retrospective reports of life events by the older adults themselves, which may have impacted on the data due to recall bias. Imperfections in memory recall contributes to error in life events data collection, as research shows respondents fail to report around 4% of life events (hospitalization or road accident) after 3 months, which increases to around 35% after 12 months (Cannell et al., 1965; Cash & Moss, 1972). Despite this, research has examined 'event decay' in the elderly which reveals while the reporting of non-severe life events tails off gradually, the reporting of severe life events remains constant across the 12 month period (Emmerson et al., 1989). This suggests the most threatening life events are less likely to be forgotten and not later recalled, indicating recall bias is a less significant limitation to this research.

### *Procedure*

Recruitment bias may have been present as one of the exclusion criteria for the CASPER/PLUS trial may have acted as a barrier to the recruitment of adults with significant life events. The CASPER/PLUS protocol excluded "other factors that would make an invitation to participate in the trial inappropriate (i.e. recent bereavement or terminal malignancy)." One concern is that the recruitment may, therefore, not be wholly representative of the range of life events experienced by older adults. This exclusion criteria

was, however, ethically important in preventing the recruitment of distressed individuals to the research, and therefore not compromising their wellbeing. It is also important to note that the phase 2 participants were recruited for invitation to interviews via an informal random sampling method. The informal nature of this sampling method was open to unconscious bias towards or away from certain names, which may have impacted on the participants recruited for interviews.

### *Analysis*

Due to the research questions asked in this research there was no exploration around the positive experiences of ageing in this population. Likewise when older adults talked about positive experiences of ageing in the interviews this data was not presented in the results. This creates a negative bias to the qualitative findings, which may not have been as prominent if issues such as protective factors, positive experiences or social reengagement has been explored in the interviews. It is also important to note that there were no credibility checks regarding the analysis carried out with older adult participants from this research. This meant it wasn't possible to ascertain what older adults made of the analysis and refine accordingly, leaving the process of analysis open to further bias.

Other confounding variables left unmeasured in this research such as participant's socioeconomic position, health status, functional impairment, coping style or lifetime cumulative adversity may additionally have impacted on the findings. This may have impacted on the results as there are known links between depression, recent adversity and all the variables listed above. As some of this data was collected as part of the CASPER trial, it makes for an interesting avenue for further research.

### Research implications

Suggestions for further research include the replication and extension of our study to further elucidate the mechanisms by which adversity maintains or provokes depression in the elderly. The recruitment of older adults to interviews with recent onset depression would allow provoking mechanisms to be examined, while allowing further investigation of the roles of marked difficulties and social emotional support. This would also provide opportunity for refining the dimensions of adversity which link to late-life depression. A complimentary research project would be to establish an in-depth longitudinal study to evaluate more specifically the mechanisms involved in the relationship between adversity, depression and coping variables in late life.

The development of a more current and age-sensitive LEDS measure for use with older adults is another avenue for future research. The phase 2 data from our research would provide the opportunity for development of age sensitive vignette examples to add as a supplement into the LEDS rating dictionaries. This would have the potential to support more valid contextual ratings for the older adult population today.

Further qualitative research may also be useful to establish both desirable and feasible interventions, based on themes highlighted in this research to support older people in coping. This would be helpful in developing realistic interventions which could be piloted in the local area. It is likely that some of the issues raised in this study could be tackled with a collaboration between primary care, social services, housing associations and volunteer organisations.

#### Clinical implications

This research has highlighted older adults as a group who experience significant adversity and while many remain resilient in the face of these experiences, some represent an 'at risk' group in need of psychological support. It is important as clinicians that we remember the importance of the social context when working with older adults, in particular the social roles, connectedness and quality of support available.

One of our findings was that depressed individuals experience late-life adversity within the dimension of powerlessness, while pertinent to coping were activities of self-redefinition involving acceptance and adjustment. An implication of this finding for psychological support would be to help older adults to explore their sense of agency in the world, looking at avenues for personal growth and development in late life. This may be beneficial in both preparation for and in response to the experience of late-life adversity. Power mapping has been put forward as a therapeutic technique to make power and powerlessness explicit in therapy, looking at pathology being held within the context of someone's life, rather than within themselves (Hagan & Smail, 1997). This concept may help to highlight areas for self-development and increase motivation in therapy. Power mapping may be useful for older adults who lack a sense of control in their lives as they face the challenges associated with ageing, and equally where earlier experiences of powerlessness play out again in the present. This technique may help older adults observe the factors which hold them back from self-development and move blame away from themselves. The process of mapping power out visually may help older adults notice the things which they lack power to change as well as empowering them to make self-redefining changes to move forward in life.



An additional finding was depressed individuals experience late-life adversity within the dimensions 'leaving in disharmony' and 'threats to immortality', while pertinent to coping were activities to promote 'leaving in peace' and 'being immortal'. An implication in line with this is to provide older adults with appropriate emotional support to work through their past experiences, while supporting them through the polar influences late-life adversity has on the sense of leaving life in peace. The use of reminiscence in therapy can help older adults maintain a sense of integrity and mastery in life, in particular focusing on reducing 'bitterness revival' in older adults with depression (Korte et al., 2011). Linking to our research this emphasis on reminiscence may focus on past experiences which have contributed to the sense of self, revisiting past events across the life trajectory to process them and reduce the sense of leaving life in disharmony as identified by our depressed older adults. It may be possible to see how comparisons made with an idealised self, rather than a realistic self may contribute to the sense of disharmony. The purpose of reminiscence described here would be to increase the senses of life coherence and leaving in peace. Reminiscing, or looking back, to look forwards in life.

Additionally, Yalom (1991) describes the emphasis on disillusioning patients in therapy, helping them towards acceptance of the basic facts of life and death, whereby confronting death is seen as a process which can help us live life more fully. The sense conveyed is one of us 'in it together' to face these philosophical questions of life. This view suggests there is nothing remarkably different about the dilemmas we face in old age, rather they are more certain and salient due to their position nearing the end of life. A suggestion for use in therapy may be to help older adults consider the 'rippling effect' they have had on the world already, and to consider ways they may still pass something of themselves into the future, to consider themselves being immortal.

The provision of psychological support in general may require additional health promotion, targeted specifically at the older adult group, to increase awareness of current mental health provision. It is also important to consider the delivery of support in a more flexible way for the older adult group, for example through home-based interventions for older adults within primary care. This research has shown the entrapping nature of adverse experiences in late life, for example in declining health and mobility, which may make it difficult for people to access psychological support independently. As many people find accessing mental health services stigmatising and embarrassing, it is important to offer services which are accessible in a confidential way to optimise engagement in services for those who want it.

## Conclusion

This study provides a unique insight into the association between adversity and depression in late life within the UK, utilizing both a large scale survey and in depth interviews, while interpreting the data through complementary quantitative and qualitative analyses. The data overwhelmingly points to how well older adults cope with adversity in late life. The majority of older adults who experience adverse life events and difficulties cope well and remain free from depression. Our study provided evidence to suggest adversity in late life may be characterized by the presence of many low threat difficulties, while highlighting the role of marked difficulties and a lack of social emotional support in the maintenance of depression. Older adults qualitative accounts allowed us to see the importance of having a positive outlook on life, being intent on self-redefinition and development, while having a sense of togetherness with others, in facing the challenges of late-life adversity. It is important for people in supporting roles to be aware of the social contexts of older adults, and facilitate the process of looking back over life or consideration of mortality where appropriate. It may be beneficial for depressed older adults to receive the support required to explore their experience of powerlessness and blocks to self-redefinition. Future research employing both questionnaire and interview methodology will further refine our knowledge of the association between adversity and depression in older adults, while focusing the development of interventions beneficial within this age group.

## REFERENCES

- Ainsworth, M. (1989) Attachments beyond infancy. *American Psychologist*, **44**(4), 709-716.
- Alexopoulos, G. S. (2005) Depression in the elderly. *The Lancet*, **365**, 1961-1970.
- Alexopoulos, G. S., Vrontou, C., Kakuma, T., Meyers, B. S., Young, R. C., Klausner, E. & Clarkin, J. (1996) Disability in geriatric depression. *American Journal of Psychiatry*, **153**(7), 877-885.
- Alexopoulos, G. S., Kiosses, D. N., Klimstra, S., Kalayam, B. & Bruce, M. L. (2002) Clinical presentation of the “depression-executive dysfunction syndrome” of late life. *American Journal of Geriatric Psychiatry*, **10**, 98-102
- Almeida, O. P., Pirkis, J., Kerse, N., Sim, M., Flicker, L., Snowdon, J., Draper, B., Byrne, G., Lautenschlager, N. T., Stocks, N., Alfonso, H. & Plaff, J. J. (2012) Socioeconomic disadvantage increases risk of prevalent and persistent depression in later life. *Journal of Affective Disorders*, **138**, 322-331.

Ames, D. (2001) Depression and the Elderly. Chapter in: A. Dawson and A. Tylee *Depression: Social and Economic Timebomb*. London: BMJ Publishing.

Anderson, B. (2006) Methods of Life Stress Assessment. *Pittsburgh Mind-Body Center, Website*. Webpage last revised 04/10/2006. Retrieved on 02/02/2013 from: [http://pmbcii.psy.cmu.edu/core\\_c/lifestress.html](http://pmbcii.psy.cmu.edu/core_c/lifestress.html).

Anthony, K., Proctor, A., Silverman, A. & Murphy, E. (1987) Mood and Behaviour Problems Following the Relocation of Elderly Patients with Mental Illness. *Age and Ageing*, **16**(6), 355-365.

Antonovsky, A. (1987) *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass inc.

APA - American Psychiatric Association (1994) *Diagnostic and Statistic Manual of Mental Disorders 4<sup>th</sup> Edition Text Revision: DSM-IV*. Washington, American Psychiatric Press Inc.

Ariès, P. (1981) *The hour of our death: The classic history of western attitudes towards death over the last one hundred thousand years*. New York: Vintage Books.

Armer, J. (1993) Elderly relocation to a congregate setting: factors influencing adjustment. *Issues in Mental Health Nursing*, **14**, 157-172.

Aylaz, R., Akturk, U., Erci, B., Ozturk, H. & Alsan, H. (2012) Relationship between depression and loneliness in elderly and examination of influential factors. *Archives of Gerontology and Geriatrics*, **55**, 548-554.

Avlund, K., Rantanen, T. & Schroll, M. (2007) Factors underlying tiredness in older adults. *Aging and Clinical Experimental Research*, **19**(1), 16-25.

Bahes, P. & Bahes, M. (1990) *Successful Aging: Perspectives from the behavioral sciences*. Cambridge: Cambridge University Press.

Bailly, N., Joulain, M., Herve, C. & Alaphillipe, D. (2012) Coping with negative life events in old age: The role of tenacious goal pursuit and flexible goal adjustment. *Aging & Mental Health*, **16**(3-4), 431-437.

Ballesteros, S., Nilsson, L. & Lemaire, P. (2009) Ageing, Cognition and Neuroscience: An Introduction. *European Journal of Cognitive Psychology*, **21**(2-3), 161-175.

Bebbington, P. E., Brugha, T., Maccarthy, B., Potter, J., Sturt, E., Wykes, T., McGuffin, P. (1988). The Camberwell collaborative depression study .1. depressed probands - adversity and the form of depression. *British Journal of Psychiatry*, **152**, 754-765.

Bebbington, P. & Guffin, P. (1989) Interactive models of depression. In: E. Paykel & K. Herbst (Eds) *Depression an Integrative Approach*. London: Hinemann Medical Books.

Beck, A. T., Rush, A. J., Shaw, B. F. & Emery, G. (1979) *Cognitive Therapy for Depression*. New York: Guildford Press. Cited in: Townend, M. & Grant, A. (2008) Process and Related Issues in Cognitive Behavioural Assessment. Chapter 3 in: *Assessment and Case Formulation in CBT*. Grant, A., Townend, M., Mills, J. & Cockx, A. London: Sage.

Beechend, C., Santos, K., Hughes, J. H., et al. (2012) *Mid Essex IAPT: Improving access to psychological therapies for older people 2011-2012*. Cambridge: Primary Care and Liaison Psychiatry Services: Cambridge University Health Partners.

Belli, R. F., Shay, W. L. & Stafford, F. P. (2001) Event History Calendars and Question List Surveys: A Direct Comparison of Interviewing Methods. *Public Opinion Quarterly*, **65**, 45-74.

Bifulco, A., Brown, G., Edwards, A., Harris, T., Neilson, E., Richards, C. & Robinson, R. (1989) *Life Events and Difficulties Schedule (LEDS-2). Volume 1: Life Events Manual*. London: Royal Holloway and Bedford New College, University of London.

Birrer, R. B. & Vemuri, S. P. (2004) Depression in Later Life: A diagnostic and therapeutic challenge. *American Family Physician*, **69**(10), 2375-2382.

Blazer, D. (2003a) Impact of late-life depression on the social network. *American Journal of Psychiatry*, **140**, 162-166.

Blazer, D. (2003b) Depression in Late Life: Review and Commentary. *Journal of Gerontology*, **58A**(3), 249-265.

Blazer, D., Hughes, D. & George, L. (1987) The epidemiology of depression in an elderly community. *The gerontologist*, **27**, 281-287.

Blazer, D., Burcheu, B., Service, C & George, L. (1991) The association of age and depression among the elderly: an epidemiologic exploration. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, **46**, M210-M215.

Blazer, D. & Hybels, C. F. (2005) Origins of depression in later life. *Psychological Medicine*, **35**, 1241-1252.

Bowlby, J. (1969) *Attachment and Loss: Vol 1. Attachment*. New York: Basic Books. Cited in: Hooper et al. (2012) Using attachment theory in medical settings: Implications for primary care physicians. *Journal of Mental health*, **21**(1), 23-37.

Bowlby, J. (1980) Attachment and Loss – Retrospect and Prospect. *American Journal of Orthopsychiatry*, **52**(4),664-678.

Bowlby, J. (1988) *A Secure Base: Clinical Applications of Attachment Theory*. London: Routledge.

Brandtstadter, J. & Greve, W. (1994) The aging self: Stabilizing and protective processes. *Developmental Psychology*, **5**, 58-67.

Braun, V. & Clarke, V. (2006) Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, **3**, 77-101.

Brown, G., & Harris, T. (1978a) *The Social Origins of Depression*. London: Tavistock Publications.

Brown, G., & Harris, T. (1978b) *The Bedford College Life Events and Difficulty Schedule: Directory of Contextual Threat Ratings of Events*. London: Bedford College, University of London.

Brown, G. W., Harris, T. O., Hepworth, C., Robinson, R. (1994) Clinical and Psychosocial Origins of Chronic Depressive Episodes in a Patient Enquiry. *British Journal of Psychiatry*, **165**, 457-465.

Brown, G. W., Harris, T. O., Kendrick, T., Chatwin, J., Craig, T. K. J., Kelly, V. (2010). Antidepressants, social adversity and outcome of depression in general practice. *Journal of Affective Disorders*, **121**(3), 239-246.

Bruce, M. L. (2002) Psychosocial risk factors for late-life depression. *Biological Psychiatry*, **52**, 175-184.

Brugha, T., Bebbington, P., Tennant, C. & Hurry, J. (1985) The List of Threatening Experiences: A Subset of 12 Life Event Categories with Considerable Long-Term Contextual Threat. *Psychological Medicine*, **15**, 189-194.

Brugha, T.S. & Cragg, D. (1990). The List of Threatening Life Experiences: the Reliability and Validity of a Brief Life Events Questionnaire. *Acta Psychiatrica Scandinavica*, **82**, 77-81.

Burmeister, M., McInnis, M. G., & Zöllner, S. (2008). Psychiatric genetics: Progress amid controversy. *Nature reviews. Genetics*, **9**(7), 527-40.

Butler, R., Orrell, M., Ukoumunne, O. C. & Bebbington, P. (2004) Life events and survival in dementia: A 5 year follow-up study. *Australian and New Zealand Journal of Psychiatry*, **38**, 702-705.

Byng, R. & Gask, L. (2009) Improving Access to Psychological Therapies: Implications for Mental Health Care in General Practice. *British Journal of General Practice*, **59**(566), 640-641.

Cairney, J., & Krause, N. (2008). Negative life events and age-related decline in mastery: Are older adults more vulnerable to the control-eroding effect of stress? *Journals of Gerontology Series B-Psychological Sciences and Social Sciences*, **63**(3), S162-S170.

Cannell, C.F., Fisher, G. & Bakker, T. (1965) Reporting of Hospitalization in the Health Interview Survey. *Vital and Health Statistics*. Publication 1000, Series 2, Number 6. Washington: Government Printing Office.

Cappeliez, P. & O'Rourke, N. (2006) Empirical validation of a model of reminiscence and health in later life. *Journals of Gerontology: Psychological Sciences*, **61**, 237-244.

Carmichael F, Hulme C, Porcellato L. (2013a) Work histories of older people: evidence from mixed method occupational history calendars. *Working Paper WP13-05*, Academic Unit of Health Economics, Leeds Institute of Health Sciences, University of Leeds.

Carmichael F, Hulme C, Porcellato L. (2013b) Older age and ill-health: links to work and worklessness. *International Journal of Workplace Health Management*, **6**(1), 54-65.

Carter, M., Moser, K. & Kelly., S. (1999) Health of Older People: Disease Prevalence, Prescription and Referral Rates, England and Wales 1996. *Office for National Statistics, Health Statistics Quarterly*, **04**, 9-15.

Cash, W. S. & Moss, A. J. (1972) Optimum Recall Period for Reporting Persons Injured in Motor Vehicle Accidents. *Vital and Health Statistics*. Publication HSM 72-1050, Series 2, Number 50. Washington: Government Printing Office.

Caspi, A., Sugden, K., Moffitt, T. E., Taylor, A., Craig, I. W., Harrington, H., McClay, J., Mill, J., Martin, J., Braithwaite, A., & Poulton, R. (2003) Influence of life stress on depression: Moderation by a polymorphism in the 5-HTT gene. *Science*, **301**(5631), 386-9.

Castro-Costa, E., Dewey, M., Stewart, R., et al. (2007) Prevalence of depressive symptoms and syndromes in later life in ten European countries: The SHARE study. *The British Journal of Psychiatry*, **191**, 393-401.

Clark, D. A. & Beck, A. T. (1999) *Scientific Foundations of Cognitive Theory and Therapy of Depression*. New York: John Wiley & Sons.

Cohen, S. & Wills, T. A. (1985) Stress, social support and the buffering hypothesis. *Psychological Bulletin*, **98**(2), 310-357.

Cowan, P. A. (1991) Individual and family life transitions: A proposal for a new definition. In P. A. Cowan & M. Hetherington (Eds) *Family Transitions* (pp. 3-30). New Jersey: Lawrence Erlbaum Associates.

Craig, T. K. J. (1996) Adversity and depression. *International Journal of Psychiatry*, **8**, 341-353.

Craik, F. I. M. (1991) Memory Functions in Normal Ageing. In: Yanigihara, T. & Peterson, R. C. (Eds) *Memory Disorders: Research and Clinical Practice* (pp. 347-367). New York: Marcel Dekker.

Creed, R. (1985) Life Events and Physical Illness. *Journal of Psychosomatic Research*, **29**(2), 113- 123.

Davies, A. D. M. (1994a) Life events in the rural elderly. In Copeland, J. R. M., Abou-Saleh, M. T., Blazer, D. G. (Eds) *Principles and Practice of Geriatric Psychiatry*. New York: John Wiley and Sons, pp.114.

Davies, A. D. M. (1994b) Life events in the normal elderly. In Copeland, J. R. M., Abou-Saleh, M. T., Blazer, D. G. (Eds) *Principles and Practice of Geriatric Psychiatry*. New York: John Wiley and Sons, pp.106.

Davies, K., David, B., Mathe, A., Mohs, R. & Rothpearl, A. (1984) Age and the dexamethasone suppression test in depression. *American Journal of Psychiatry*, **141**, 872-874.

DoH - Department of Health (2011) *2010/11 National Survey of Investment in Mental Health Services for Older People*. Mental Health Strategies: Department of Health.

Dohrenwend, B. P. (2006) Inventorying Stressful life Events as Risk Factors for Psychopathology: Toward Resolution of the Problem of Intracategory Variability. *Psychological Bulletin*, **132**(3), 477-495.

Dohrenwend, B. S. & Dohrenwend, B. S. (1978) Some issues in research in stressful life events. *Journal of Nervous and Mental Disease*, **166**, 7-15.

Donnelly, E. A. & Hinterlong, J. E. (2009) Changes in Social Participation and Volunteer Activity among Recently Widowed Older Adults. *The Gerontologist*, **50**(2), 158-169.

Duggal, S., Malkoff-Schwartz, S., Birmaher, B., Anderson, A. P., Matty, M. K., Houck, P. R., Bailey-Orr, M., Williamson, D. S. & Frank, E. (2000) Assessment of life stress in adolescents: Self-report versus interview methods. *Journal of the American Academy of Child and Adolescent Psychiatry*, **39**(4), 445-452.

Dunell, K. (2007) Ageing and Mortality in the UK: National Statisticians Annual Article on the Population. *Population Trends*, **134**, 6-23.

Eberhart, N. K. & Hammen, C. L. (2010) Interpersonal Style, Stress, and Depression: An examination of Transactional and Diathesis Stress Models. *Journal of Social and Clinical Psychology*, **29**(1), 23-38.

Ekers, D., Richards, D. A., & Gilbody, S. (2008) A meta-analysis of randomised trials of behavioural treatment of depression. *Psychological Medicine*, **38**, 611-623.

Emmerson, J. P., Burvill, P. W., Finlay-Jones, R. & Hall, W. (1989) Life events, difficulties and confiding relationships in the depressed elderly. *British Journal of Psychiatry*, **155**, 787-792.

Erickson, E. (1959) Identity and the life cycle. *Psychological issues*, **1**, 18-164.

Erikson, E. (1964) *Childhood and society*. New York: Norton.

Ferster, A. (1973) A Functional Analysis of Depression. *American Psychologist*, **28**, 857-870.

Fincham, J. E. (2009) Response rates and responsiveness for surveys, standards and the journal. *American Journal of Pharmaceutical Education*, **72**(2), 43.

Finlay-Jones, R. & Brown, G. W. (1981) Types of stressful life events and the onset of anxiety and depressive disorders. *Psychological Medicine*, **11**, 803-315.

Frasure-Smith, N., Lesperance, F. & Talajic, M (1993) Depression following myocardial infarction. Impact on 6-month survival. *The Journal of the American Medical Association*, **270**, 1819-1825.

Freud, S. (1917) *Mourning and Melancholia*. XVII (2<sup>nd</sup> Ed) London: Hogarth Press.

Freud, S. (1939) *The Basic Writings of Sigmund Freud*. New York: Random House. Cited in: Kinsella, P. & Garland, A. (2009) *Cognitive Behavioural Therapy for Mental Health Workers: A Beginner's Guide*. London: Routledge.

Fridja, N. G. (1986) *The Emotions*. Cambridge: Cambridge University Press.

Goodman, M., Rubenstein, R. L., Alexander, B. B. & Luborsky, M. (1991) Cultural Differences among Elderly Women in Coping with the Death of an Adult Child, *Journal of Gerontology*, **46**, S321-329.

Goodyer, I. M., & Altham, P. M. E. (1991). Lifetime exit events and recent social and family adversities in anxious and depressed school-age-children and adolescents .2. *Journal of Affective Disorders*, **21**(4), 229-238.



Gove, W. R., Ortega, S. T. & Style, C. B. (1989) The maturation and role perspective on ageing and self through the adult years: An empirical investigation. *American Journal of Sociology*, **94**, 1117-1145.

Green, B. H., Copeland, J. R., Dewey, M. E., Sharma, V., Saunders, P. A., Davidson, I. A., Sullivan, C. & McWilliam, C. (2002) Risk factors for depression in elderly people: a prospective study. *Acta Psychiatrica Scandinavica*, **86**, 213-217.

Grimby, A., & Svanborg, A. (1996). Life Events and Quality of Life in Old Age. Reports from a Medical-Social Intervention Study. *Aging Clinical and Experimental Research*, **8**, 162-169.

Gruenberg, A., Goldstein, R. & Pincus, H. (2005) Classification of Depression: Research and Diagnostic Criteria: DSM-IV & ICD-10. Chapter 1 In: J. Licinio, & M. Wong (eds) *Biology of Depression: From Novel Insights to Therapeutic Strategies*. Munich, Wiley VCH.

Guttman, D. (1978) Life events and decision making in older adults. *The Gerontologist*, **18**(5), 462-467.

Hagan, T. & Smail, D. (1997) Power Mapping – 1. Background and Basic Methodology. *Journal of Community and Applied Social Psychology*, **7**, 257-267.

Hamilton, J. B., Sandelowski, M., Moore, A. D., Agarwal, M & Koenig, H. G. (2012) "You Need a Song to Bring You Through": The Use of Religious Songs to Manage Stressful Life Events. *The Gerontologist*, **0**(0), 1-13.

Hardy, S. E., Concato, J. & Gill, T. M. (2002) Stressful Life Events among Community Living Older Persons. *Journal of General International Medicine*, **17**(11), 841-847.

Harris, T. O., Brown, G. W. & Robinson, R. (1999) Befriending as an Intervention for Chronic Depression among Women in an Inner City. 11: Role of Fresh Start Experiences and Baseline Psychosocial Factors in Remission from Depression. *British Journal of Psychiatry*, **174**, 225-233.

Hatcher, S. & House, A. (2003) Life Events, Difficulties and Dilemmas in the Onset of Chronic Fatigue Syndrome: A Case-Control Study. *Psychological Medicine*, **33**(7), 1185-1192.

Helgeson, V. S. & Lopez, L. C. (2010) Social support and growth following adversity. In: J. W. Reich, A. J. Zatura, & J. S. Hall (Eds) *Handbook of Adult Resilience*, (pp.309-330) New York: Guildford Press.

Heim, C. & Binder, E. B. (2012). Current Research Trends in Early Life Stress and Depression: Review of Human Studies on Sensitive Periods, Gene-Environment Interactions, and Epigenetics. *Experimental Neurology*, **233**(1), 102-11.

Henderson, A. S., Korten, A. E., Jacomb, P. A. (1997) The Course of Depression in the Elderly: A Longitudinal Community Based Study in Australia. *Psychological Medicine*, **27**, 119-29.

Hermans, H. & Evenhuis, H. (2012) Life events and their Associations with Depression and Anxiety in Older People with Intellectual Disabilities: Results of the HA-ID Study. *Journal of Affective Disorders*, **138**(1-2), 79-85.

Hermans, H., Evinghaus, H. & Hilgenkamp, T. (2012) Life events in older (>50 years) adults with intellectual disabilities. *European Geriatric Medicine*, **3**(1), S136.

Hirschfeld, R., Keller, M., Panico, S., Arons, B., Barlow, D., Davidoff, F., Endicott, J., Froom, J., Goldstein, M., Gorman, J., Guthrie, D., Marek, R. & Turner, T. (1997) The National Depressive and Manic –Depressive Association Consensus Statement on the Under-treatment of Depression. *Journal of the American Medical Association*, **277**, 333-340.

Hobson, R. (1985) *Forms of Feeling: The Heart of Psychotherapy*. London: Tavistock Publications.

Holmes, J. (2001) *The Search for the Secure Base: Attachment Theory and Psychotherapy*. Hove: Brunner-Routledge.

Holmes, T., & Rahe, R. (1967) The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*, **11**, 213-218.

Hosang, G.M., Korszun, A., Jones, L., Jones, I., Gray, J.M., Gunasinghe, C.M., McGuffin, P., & Farmer, A.E. (2010) Adverse Life Event Reporting and Worst Illness Episodes in Unipolar and Bipolar Affective Disorders: Measuring Environmental Risk for Genetic Research. *Psychological Medicine*, **40**, 1829-1837.

Houghton, S., Curran, J. & Saxon, D. (2008) An Uncontrolled Evaluation of Group Behavioural Activation for Depression. *Behavioural and Cognitive Psychotherapy*, **36**(2), 235-239.

Huchinson, J. G. & Williams, P. G. (2007) Neuroticism, daily hassles, and depressive symptoms: An examination of moderating and mediating effects. *Personality and Individual Differences*, **42**, 1367-1378.

Isaacowitz, D. M. & Seligman, M. E. P. (2002) Cognitive style predictors of affect change in older adults. *International Journal of Ageing and Human Development*, **54**, 233-253.

Jacobsen, N. S., Dobson, K. S., Traux, P. A., Addis, M. E., Koerner, K., Gollan, J. K., Gortner, E. & Prince, S. E. (1996) A Component Analysis of Cognitive Behavioural Treatment. *Journal of Consulting and Clinical Psychology*, **64**, 295-304.

Janoff-Bulman, R. (1992) *Shattered assumptions: Towards a new psychology of trauma*. New York: Free press.

Johnson, J. H. & McCutcheon, S. (1980) Assessing life stress in older children and adolescents: preliminary findings with the LEC. In: I. G. Sarason & C. D. Spielberger (Eds) *Stress and Anxiety*. Washington: Hemisphere.

Jones, H. (1989) *The Epicurean Tradition*. London: Routledge

Kaji, T., Mishima, K., Kitamura, S., Nagase, M., Li, L., Kaneita, Y., Ohida, T., Nishikawa, T. & Uchiyama, M. (2010) Relationship between Late-Life Depression and Life Stressors: Large-scale Cross-Sectional Study of a Representative Sample of the Japanese General Population. *Psychiatry and Clinical Neurosciences*, **64**, 426-434.

Kamel, N. S. & Gammack, J. K. (2005) Insomnia in the elderly: Cause, Approach and Treatment. *The American Journal of Medicine*, **119**(6), 463-469.

Katsumata, Y., Arai, A., Ishida, K., Tomimori, M., Lee, R. B., & Tamashiro, H. (2012). Which categories of social and lifestyle activities moderate the association between negative life events and depressive symptoms among community-dwelling older adults in Japan? *International Psychogeriatrics*, **24**(2), 307-315.

Katz, M. J., Lipton, R. B., Hall, C. B., Zimmerman, M. E., Sanders, A. E., Verghese, J., Dickson, D. W. & Derby, C. A. (2012) Age-specific and Sex-specific Prevalence and Incidence of Mild Cognitive Impairment, Dementia, and Alzheimer Dementia in Blacks and Whites: A Report from the Einstein Ageing Study. *Alzheimer Disease and Associated Disorders*, **26**(4), 335-343.

Keers, R., Uher, R., Gupta, B., Rietschel, M., Schulze, T.G., Hauser, J., Skibinska, M. et al. (2010) Stressful Life Events, Cognitive Symptoms of Depression and Response to Antidepressants in GENDEP. *Journal of Affective Disorders*, **127**, 337-342.

Kendler, K. S., Hettema, J. M., Butera, F., Gardner, C. O. & Prescott, C. A. (2003) Life Event Dimensions of Loss, Humiliation, Entrapment, and Danger in the Prediction of Onsets of Major Depression and Generalised Anxiety. *Archives of General Psychiatry*, **60**(8), 789-796.

Kennedy, G. J. (1996) The Epidemiology of Late-Life Depression. Chapter 2 in: G. J. Kennedy (Ed) *Suicide and Depression in Late-Life: Critical Issues in Treatment, Research and Public Policy*. Chichester: Wiley.

Kessler, R. C. & McLeod, J. C. (1985) *Social support and Mental Health in Community Samples*. New York: Academic press.

Klien, D. N. & Rubovits, D. R. (1987) Reliability of Subjects on Stressful Life Events Inventories: Longitudinal Studies. *Journal of Behavioral Medicine*, **10**, 501-512.

Knapp, M. (2012) Mental Health in an Age of Austerity. *Evidence Based Mental Health*, **15**, 54-55.

Koenig, H. G. (2009) Research on religion, spirituality and mental health: a review. *Canadian Journal of Psychiatry*, **54**(5), 283-291.

Korte, J., Bohlmeijer, E. T., Westerhof, G. J. & Pot, A. M. (2011) Reminiscence and Adaptation to Critical Life Events in Older Adults with Mild to Moderate Depressive Symptoms. *Ageing & Mental Health*, **15**(5), 638-646.

Kramer, B. J. & Lambert, J. D. (1999) Caregiving as a Life Course transition among older husbands: A prospective study. *The Gerontologist*, **39**(6), 658-667.

Krause, N. (1998) Early Parental Loss, Recent Life Events, and Changes in Health Among Older Adults. *Journal of Ageing and Health*, **10**(4), 395-421.

Krause, N. (2004) Lifetime Trauma, Emotional Support and Life Satisfaction among Older Adults. *The Gerontologist*, **44**(5), 615-623.

Krishnan, K., Hayes, J. & Blazer, D. (1997) MRI-defined vascular depression. *American Journal of Psychiatry*, **154**, 497-501.

Kroenke, K. (2002) The PHQ-9: a New Depression Diagnostic and Severity Measure. *Psychiatric Annals*, **32**(9), 1-7.

Kroenke, K., Spitzer, R., & Williams, J. (2001) The PHQ-9: Validity of a Brief Depression Severity Measure. *Journal of General Internal Medicine*, **16**(9), 606-613.

Ku, P. W., Fox, K. R., Chen, L. J. & Chou, P. (2012) Physical activity and depressive symptoms in older adults. *American Journal of preventative medicine*, **42**(4), 355-362.

Kumari, N. & Blackburn, I. M. (1992) How Specific are Negative Automatic Thoughts to a Depressed Population – An Exploratory Study. *British Journal of Medical Psychology*, **65**(2), 167-176.

La Greca, A. J., Akers, R. L., & Dwyer, J. W. (1988). Life events and alcohol behavior among older adults. *Gerontologist*, **28**(4), 552-558.

Landreville, P., & Vezina, J. (1992). A comparison between daily hassles and major life events as correlates of well-being in older adults. *Canadian Journal on Aging-Revue Canadienne Du Vieillissement*, **11**(2), 137-149.

Lang, F. R., Reickmann, N. & Baltes, M. M. (2002) Adapting to ageing losses: Do resources facilitate strategies of selection, compensation and optimization in everyday functioning? *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, **57**(B), 501-509.

Lee, G. R. (1985) Kinship and social support of the elderly: the case of the United States. *Ageing and Society*, **5**, 19-38.

Lejuez, C. W., Hopko, D. R., LePage, J. P., Hopko, S. D. & McNeil, D. W. (2001) A Brief Behavioural Activation Treatment for Depression. *Cognitive and Behavioural Treatment for Depression*, **8**(2), 164-175.

Leskela, U., Rytsa, H., Konulainen, E., Melartin, T., Sokero, P., Lestela-Mielonen, P. & Isometsa, E. (2006) The influence of adversity and perceived social support on the outcome of major depressive disorder in subjects with different levels of depressive symptoms. *Psychological Medicine*, **36**, 779-788.

Leys, R. (1991) Types of One: Adolf Meyer's Life Charts and the Representation of Individuality. *Representations*, **34**, 1-28.

Lorant, V., Deliege, D. & Eaton, W. (2003) Socioeconomic Inequalities in Depression: A Meta-analysis. *American Journal of Epidemiology*, **157**, 98-112.

Lowenthal, M. F. (1965) Antecedents of isolation and mental illness in old age. *Archives of General Psychiatry*, **12**, 245-254.

Malyszczak, K., Pawlowski, T., Pyszel, A., Ingot, M., & Kiejna, A. (2007). Neuroticism and life adversity in the development of depressive symptoms. *European Psychiatry*, **22**, S237-S237.

Maschi, T., Morgen, K., Zgboa, K., Courtney, D. & Ristow, J. (2011) Age, Cumulative Trauma and Stressful Life Events, and Post-traumatic Stress Symptoms among Older Adults in Prison: Do Subjective Impressions Matter? *The Gerontologist*, **51**(5), 675-686.

Maslow, A. H. (1968) *Toward a psychology of being* (2nd Ed). New York: Van Nostrand. Cited in: Ryff, C. (1989a) Happiness is everything, or is it? Explorations on the meaning of Psychological Wellbeing. *Journal of Personality and Social Psychology*, **57**(6), 1069-1081.

McLanahan, S. S. & Sorensen, A. B. (1984) *Life Events and Psychological Wellbeing over the Lifecourse*. Proceedings of the Workshop on Life Course Research with

Panel Data, SSRC Committee on Life Course Perspectives on Human Development, Baltimore, Maryland, November 1981.

McNaughton, M. E., Patterson, T. I., Irwin, M. R. & Grant, I. (1992) The relationship of life adversity, social support and coping to hospitalisation with major depression. *The Journal of Nervous and Mental Disease*, **180**(8), 491-497.

Moos, R. H., Cronkite, R. C. & Moos, B. S. (1998) Family and Extrafamily resources and the 10-year course of treated depression. *Journal of Abnormal Psychology*, **107**, 450-460.

Moos, R. H., Brennan, P. L., Schutte, K. K. & Moos, M. S. (2006) Older adults coping with negative life events: Common processes of managing health, interpersonal and financial work / stressors. *International Journal of Aging and Human Development*, **62**(1), 39-59.

Morgan, O., Griffiths, C. & Majeed, A. (2008) Antidepressant prescribing and changes in antidepressant poisoning mortality and suicide in England, 1993-2004. *Journal of Public Health*, **30**, 60-68.

Mojtabai, R. & Olfson, M. (2004) Major depression in community-dwelling middle-aged and older adults: prevalence and 2- and 4- year follow-up symptoms. *Psychological Medicine*, **4**, 623-634.

Murphy, E. (1982) Social Origins of Depression in Old Age. *The British Journal of Psychiatry*, **141**, 135-142.

Murrell, S. A. & Norris, F. H. (1984) Resources, Life Events, and Changes in Positive Affect and Depression in Older Adults. *American Journal of Community Psychology*, **12**(4), 445-463.

Murrell, S. A., Meeks, S. & Walker, J. (1991) Protective Functions of Health and Self-esteem against Depression in Older Adults Facing Illness or Bereavement. *Psychology and Aging*, **6**, 352-360.

Murrell, S. A., Norris, F. H. & Hutchins, G. M. (1984) Distribution and Desirability of Life Events in Older Adults: Population and Policy Implications. *Journal of Community Psychology*, **12**, 301-11.

Myroczek, D. & Kolarz, C. (1998) The effect of age on positive and negative affect: a developmental perspective on happiness. *Journal of Personality and Social Psychology*, **75**, 1333-1349.

Nacoste, D. R. B. & Wise, E. H. (1991) The relationship among negative life events. Cognitions and depression within three generations. *The Gerontologist*, **31**(3), 397-403.

National Institute for Health and Clinical Excellence (2009) *Depression: Quick Reference Guide. Treatment and Management of Depression in Adults, including Adults with a Chronic Physical Health Problem*. London: NICE

Nazroo, J. Y., Edwards, A. C. & Brown, G. W. (1997) Gender differences in the onset of depression following shared life event: A study of couples. *Psychological Medicine*, **27**, 9-19.

Nebes, R., Vora, I., Melzer, C., Fuki, M. B., Williams, R. L., Kamboh, M. I., Saxton, J., Houck, P. R., DeKosky, S. T. & Reynolds, C. F. (2001) Relationship of deep white matter hyper intensities and apolipoprotein E genotype to depressive symptoms in older adults without clinical depression. *American Journal of Psychiatry*, **158**, 878-884.

Neimeyer, R. A., Kazantzis, N., Kassler, D. M., Baker, K. D. & Fletcher, R. (2008) Group Cognitive Behavioural Therapy for Depression Outcomes Predicted by Willingness to Engage in Homework and Cognitive Restructuring Skill Acquisition. *Cognitive Behaviour Therapy*, **37**(4), 199-215.

Neugarten, B. L. (1968). Personality change in late life: A Developmental perspective. Cited in: Ryff, C. (1989b) Beyond Ponce de Leon and Life Satisfaction: New Directions in Quest of Successful Ageing. *International Journal of Behavioural Development*, **12**(1), 35-55.

NHS Employers and The General Practitioners' Committee (2009) *Quality and Outcome Framework guidance for GMS contract 2009/10: Delivering investment in general practice*. British Medical Association.

Nolen-Hoeksema, S., Larson, J. & Grayson, C. (1999) Explaining the gender difference in depressive symptoms. *Journal of Personality and Social Psychology*, **77**, 1061-1072.

Norris, F. H., & Murrell, S. A. (1984) protective function of resources related to life events, global stress, and depression in older adults. *Journal of Health and Social Behaviour*, **25**, 424-437.

Norris, F. H., & Murrell, S. A. (1987). Transitory impact of life-event stress on psychological symptoms in older adults. *Journal of Health and Social Behavior*, **28**(2), 197-211.

Nygren, B., Alex, L., Jonsen, E., Gustaffson, Y., Norberg, A. & Lundman, B. (2005) Resilience, Sense of Coherence, Purpose in life, and Self-transcendence in relation to perceived physical and mental health among the oldest old. *Aging & Mental Health*, **9**(4), 354-362.

Orrell, M., & Davies, A. D. M. (1994) Life Events in the Elderly. *International Review of Psychiatry*, **6**, 59-71.

Orrell, M., & Bebbington, P. (1995) Life Events and Senile Dementia: Admission, Deterioration and Social Environment Change. *Psychological Medicine*, **25**, 373-386.

Orrell, M., & Bebbington, P. (1998) Life Events and Cognition in Dementia. *Aging and Mental Health*, **2**(1), 53-59.

Palsson, S., Ostling, S. & Skoog, J. (2001) The incidence of first onset depression in a population followed from the age of 70 to 85. *Psychological Medicine*, **31**, 1159-1158.

Paragamet, K. I. & Cummings, J. (2010) Anchored by faith: Religion as a resilience factor. Chapter 10 in: J. W. Reich, A. J. Zatura, J. S. Hall (Eds) *Handbook of adult resilience*. The Guildford Press: New York.

Park, M. & Unutzer, J. (2011) Geriatric depression in primary care. *Psychiatric Clinics of North America*, **34**(2), 469.

Park, J. H., Kim, K. W., Kim, M. H., Kim, M. D., Kim, B. J., Kim, S. K., Kim, J. L., Moon, S. W., Bae, J. N., Woo, J. I., Ryu, S. H., Yoon, J. C., Lee, N. J., Lee, D. Y., Lee, D. W., Lee, S. B., Lee, J. J., Lee, J. Y., Lee, C. U., Chang, S. M., Jhoo, J. H. & Cho, M. J. (2012) A nationwide survey on the prevalence and risk factors of late-life depression in South Korea. *Journal of Affective Disorders*, **138**, 34-40.

Parker, R. G. (1995) Reminiscence: A community theory framework. *Gerontologist*, **35**, 515-525.

Patterson, I. (1996). Participation in leisure activities by older adults after a stressful life event: The loss of a spouse. *International Journal of Aging & Human Development*, **42**(2), 123-142.

Peters, R. (2006) Ageing and the Brain. *Postgraduate Medical Journal*, **82**(964), 84-88.

Piazza, J., & Charles, S. (2004). Remembering emotion for a major life event: Older adults' experience of relocation. *Gerontologist*, **44**, 272-272.

Porcellato, L., Carmichael, F., Hulme, C., Ingham, B. & Prashar, A. (2010) Giving Older Workers a Voice: Constraints on the Employment of Older People in the North West of England. *Work, Employment and Society*, **24**, 85-103.

Paykel, E. S. (1997) The interview for recent life events. *Psychological Medicine*, **27**, 301-310.

Price, R. H., Choi, J. N., & Vinokur, A. D. (2002). Links in the chain of adversity following job loss: how financial strain and loss of personal control lead to depression, impaired functioning, and poor health. *Journal of occupational health psychology*, **7**(4), 302-312.



Prince, M.J., Harwood, R.H., Blizard, R.A., Thomas, A., & Mann, A.H. (1997) Social Support Deficits, Loneliness and Life Events as Risk Factors for Depression in Old Age. The Gospel Oak Project VI. *Psychological Medicine*, **27**(2), 323-332.

Prince, M. J., Beekman, A. T. F., Deeg, D. J. H., Fuhrer, R., Kivela, S. L., Lawlor, B. A., Iqbal, A., Magnusson, H., Meller, I., Oyten, V., Reischies, F., Roelands, M., Skoog, I., Turrina, C. & Copeland, J. R. M. (1999) Depression symptoms in late life assessed using the EURO-D scale: Effect of age, gender and marital status in 14 European countries. *British Journal of Psychiatry*, **174**, 339-345.

Priyanka, P., Boyle, L. L., Tu, X. M. & Conwell, Y. (2010) Inter-rater reliability and validity of the PHQ-9 and GAD-7 to identify depression and anxiety in older adults receiving ageing services care management. *American Journal of Geriatric Psychiatry*, **18**(3), S113-S114.

Reker, G. (2008). Resilience as a Mediator of Stressful Life Events and Subjective Well-being, Existential Regret, and Physical Health in Older Adults. *Gerontologist*, **48**, 114-114.

Richards, D. & Whyte, M. (2009) *Reach Out: National Programme Student Materials to Support the Delivery of Training for Psychological Wellbeing Practitioners Delivering Low Intensity Interventions* (2<sup>nd</sup> Ed) UK: Rethink.

Ryff, C. (1989a) Happiness is everything, or is it? Explorations on the meaning of Psychological Wellbeing. *Journal of Personality and Social Psychology*, **57**(6), 1069-1081.

Ryff, C. (1989b) Beyond Ponce de Leon and Life Satisfaction: New Directions in Quest of Successful Ageing. *International Journal of Behavioural Development*, **12**(1), 35-55.

Sale, J. E. M., Gignac, M., & Hawker, G. (2008). The relationship between disease symptoms, life events, coping and treatment, and depression among older adults with osteoarthritis. *Journal of Rheumatology*, **35**(2), 335-342.

Sales, A. E., Plomondon, M. E., Megid, D. J., Spertus, J. A. & Rumsfeld, J. S. (2004) Assessing response bias from missing quality of life data: the Iccman method. *Health and Quality of Life Outcomes*, **2**, 49.

Sandin, B., Chorot, P., Santed, M. A. & Valiente, R. M. (2004) Differences in Negative Life Events between Patients with Anxiety Disorders, Depression and Hypochondriasis. *Anxiety, Stress and Coping*, **17**(1), 37-47.

Schaie, K. W. (1992) *The Societal Context of Ageing Individuals' Behavior*. Symposium on Investing in Ageing: The Psychological, Sociological and Anthropological Coalition. The Annual meeting of the Gerontological Society of America. Washington, November 19th 1992.

Seeman, T. E., Singer, B. H., Ryff, C. D., Love, G. D. & Levy-Storms, L. (2002) Social Relationships, Gender, and Allostatic Load across two age cohorts. *Psychosomatic Medicine*, **64**, 395-406.

Seligman, M. E. P. (1972) Learned Helplessness. *Annual Review of Medicine*, **23**, 407.

Sheline, Y., Mintum, M., Moerlein, S. & Snyder, A. Z. (2002) Greater loss of 5-HT(1A) receptors in midlife than in late life. *American Journal of Psychiatry*, **159**, 430-435.

Shmotkin, D., & Litwin, H. (2009). Cumulative adversity and depressive symptoms among older adults in Israel: the differential roles of self-oriented versus other-oriented events of potential trauma. *Social Psychiatry and Psychiatric Epidemiology*, **44**(11), 989-997.

Shrira, A. (2012). The effect of lifetime cumulative adversity on change and chronicity in depressive symptoms and quality of life in older adults. *International Psychogeriatrics*, **24**(12), 1988-1997.

Siegrist, J. & Wahrendorf, M. (2009) Participation in socially productive activities and quality of life in early old age: findings from SHARE. *Journal of European Social Policy*, **19**(4), 317-326.

Silverstien, B., Edwards, T., Gamma, A., Ajdacic-Gross, V., Rossler, W. & Angst, J. (2013) The role played by depression associated with somatic symptomatology in accounting for the gender difference in the prevalence of depression. *Social Psychiatry and Psychiatric Epidemiology*, **48**(2), 257-263.

Smith, J. & Baltes, P. B. (1993) Differential Psychological Ageing – Profiles of the Old and Very Old. *Ageing and Society*, **13**, 551-587.

Stansfeld, S. & Rasul, F. (2007) Psychosocial Factors, Depression and Illness. Chapter 2 in: A. Steptoe. (Ed) *Depression and Physical Illness*. Cambridge: Cambridge University Press.

Strickland, P. L., Deakin, J. F. W., Percival, C., Dixon, J., Gater, R. A., & Goldberg, D. P. (2002). Bio-social origins of depression in the community - Interactions between social adversity, cortisol and serotonin neurotransmission. *British Journal of Psychiatry*, **180**, 168-173.

Surtees, P. G. (1997) Adversity, Vulnerability and Depression. *Stress Medicine*, **13**, 185-191.

Surtees, P. G., & Wainwright, N. W. J. (1999). Surviving adversity: event decay, vulnerability and the onset of anxiety and depressive disorder. *European Archives of Psychiatry and Clinical Neuroscience*, **249**(2), 86-95.

Taylor, S. E., Way, B. M., Welch, W. T., Hilmert, C. J., Lehman, B. J., & Eisenberger, N. I. (2006). Early family environment, current adversity, the serotonin transporter promoter Polymorphism, and Depressive Symptomatology. *Biological Psychiatry*, **60**, 671-676.

Tedeschi, R. G. & Calhoun, L. G. (2004) Target article: Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, **15**(1), 1-18.

Tennant, C., Bebbington, P. & Hurry, J. (1981) The role of life events in depressive illness: is there a substantial causal relation? *Psychological Medicine*, **11**, 379-389.

Traviss, G. D., Meer, S., West, R. M. & House, A. O. (2012) Life Events & Difficulties and their association with antenatal distress in White and South Asian women in the UK. *Journal of Social Psychiatry and Psychiatric Epidemiology*, **48**(5), 725-734.

Ustun, T. B., Ayuso-Mateos, J. L., Chatterji, S., Mathers, C., Murray, C. J. L. (2004) Global Burden of Depressive Disorders in the Year 2000. *British Journal of Psychiatry*, **184**, 386-392.

Van Horn, P. S., Green, K. E. & Martinussen, M. (2009) Survey response rates and survey administration in counselling and clinical psychology: A meta-analysis. *Educational and Psychological Measurement*, **69**(3), 389-403.

Waite, A., Bebbington, P., Skelton-Robinson, M. & Orrell, M. (2004) Life events, depression and social support in dementia. *British Journal of Clinical Psychology*, **43**, 313-324.

Weich, S. & Lewis, G. (1998) Material Standard of Living, Social Class and the Prevalence of the Common Mental Disorders in Great Britain. *Journal of Epidemiological Community Health*, **52**, 8-14.

Werner, J. S., Frost, M. H., Macnee, C. L., McCahe, S. & Rice, V. H. (2012) Major and Minor Life Stressors, Measures and Health Outcomes. Chapter 6 in: V. H. Rice (Ed) *Handbook of Stress, Coping and Health, Implications for Nursing Research Theory and Practice*. London: Sage.

Whiteford, H. A., Degenhardt, L., Rehm, J., Baxter, A. J., Ferrari, J., Erskine, H. E., Charlson, F. J., Norman, R. E., Flaxman, A. D., Johns, N., Burstein, R., Murray, C. J. L. & Vos, T. (2013) Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. *The Lancet*, **382**(9904), 1575-1586.

WHO - World Health Organisation (1992) *ICD-10: The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. Geneva, World Health Organisation.

WHO - World Health Organisation (2001) *The World Health Report 2001. Mental Health: New Understanding, New Hope*. Geneva, World Health Organisation.

Whyte, E., Pollock, B. G., Wagner, W., et al. (2001) influence of serotonin transporter linked region polymorphism on platelet activation in geriatric depression. *American Journal of Psychiatry*, **158**, 2074-2076.

Wilcox, S., & King, A. C. (2004). The effects of life events and interpersonal loss on exercise adherence in older adults. *Journal of Aging and Physical Activity*, **12**(2), 117-130.

Wilhelm, K., Mitchell, P. B., Niven, H., Finch, A., Wedgwood, L., Scimone, A., Blair, I. P., Parker, G., & Schofield, P. R. (2006). Life events, first depression onset and the serotonin transporter gene. *The British Journal of Psychiatry: The Journal of Mental Science*, **188**, 210-5.

Yalom, I. D. (1991) *Love's executioner and other tales of psychotherapy*. Penguin books: London.

Yalom, I. D. (2011) *Staring at the sun. Overcoming the dread of death*. London: Piatkus

Yang, Y. (2007) Is old age depressing? Growth trajectories and cohort variations in late-life depression. *Journal of Health and Social Behavior*, **48**, 16-32.

Zivin, K., Llewellyn, D. J., Lang, I. A., Vijan, S., Kabeto, M. U., Miller, E. M. & Langa, K. M. (2010) Depression among older adults in the United States and England. *American Journal of Geriatric Psychiatry*, **18**(11), 1036-1044.

## APPENDIX

1. NHS REC ethical approval letter
2. Patient Health Questionnaire - Depression Module (PHQ-9)
3. LTE-Q consent e-mail Prof. Brugha
4. List of Threatening Experiences Questionnaire (LTE-Q )
5. Participant invitation letter
6. Participant information sheet
7. Participant consent/decline form
8. Table LTE-Q collapsed into LEDS

Appendix 1. NHS REC ethical approval letter

THE UNIVERSITY *of York*

The Department of Health Sciences

Dr Carol Chu  
Leeds East Research Committee  
Yorkshire and the Humber REC Central O  
First Floor  
Millside  
Mill Pond Lane  
Leeds  
LS6 4EP

Alcuin C Block  
University of York  
Heslington  
York, YO10 5DD  
Email: [simon.gilbody@york.ac.uk](mailto:simon.gilbody@york.ac.uk)  
Tel: 01904 321370

14 February 2013

Dear Dr Chu

Collaborative care and active surveillance for screen-positive elders with sub-clinical depression: a pilot study and definitive and randomised evaluation –

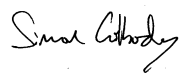
**The CASPER Study (REC Ref: 10/H1306/61) –  
Substantial Amendment 15**

We enclose with this letter a Notice of Amendment Form relevant to the above study which received a favourable ethical opinion from the committee on 28<sup>th</sup> October 2010. This is Substantial Amendment 15. I also enclose the following document:

- Life events study protocol v2.1 12Feb13
- Life events interview invitation letter v2.1 12Feb13
- Life events study interview PIS v2.1 12Feb13
- Life events interview consent form v2.1 12Feb13
- Life events study interview schedule (LEDS) v2.1 12Feb13
- CASPER baseline qr v2.5 4Jan13

Please do not hesitate to contact Helen Lewis, CASPER Study Manager (Tel: 01904 321330; Email: [Helen.lewis@york.ac.uk](mailto:Helen.lewis@york.ac.uk)), if you have any queries.

Best wishes and kind regards



Professor Simon Gilbody on behalf of the CASPER Study Team

## PHQ-9 Depression

**Over the last 2 weeks, how often have you  
been bothered by any of the following problems?**

*(Please circle to indicate your answer”*

	Not all	at Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things.....	0	1	2	3
2. Feeling down, depressed, or hopeless.....	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much.....	0	1	2	3
4. Feeling tired or having little energy.....	0	1	2	3
5. Poor appetite or overeating.....	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down.....	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television.....	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual.....	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way.....	0	1	2	3

**Column totals**

\_\_\_ + \_\_\_ + \_\_\_ +

\_\_\_


= **Total Score**

\_\_\_\_\_

### Appendix 3. LTE-Q consent e-mail Prof. Brugha

**Date:** Fri, 11 Jan 2013 14:19:41 -0000 [11/01/2013 14:19:41 GMT]  
**From:** Terry Brugha <TBrugha@socpsy.le.u-net.com>  
**To:** Hjordis Donoghue <ps08hmb@leeds.ac.uk>  
**Reply-To:** tsb@le.ac.uk  
**Subject:** Re: LTE-Q copywrite  
**Priority:** normal  
**Part(s):**  2 LTEQ Postal Version.zip [application/zip] 1,133 KB   
[Download All Attachments \(in .zip file\)](#) 

**Headers:** [Show All Headers](#)

 1 Mail message body [text/plain] 2.60 KB 

Yes you may use the LTE-Q with the proposed modifications in your study (and in any future studies in which you wish to do so). I was approached in the years soon after it was published by a group who wanted to use it in an elderly population. I don't now recall who they were. They may have made alterations also. Hope this is helpful. See also the attached additional information.

Kind regards,

Terry

---

Terry Brugha,  
Professor of Psychiatry,  
Department of Health Sciences,  
University of Leicester.  
<http://www2.le.ac.uk/departments/health-sciences/research/psychiatry/staff/tsb>

E) <tsb@le.ac.uk>




Appendix 4. List of Threatening Experiences Questionnaire (LTE-Q)

The following is a list of important life events. For each life event please circle 'yes' if you have experienced that life event over the <u>last year</u> and 'no' if you have not. For those events that you have experienced, please also indicate the date that the event occurred with as much accuracy as you can.			
Life event	Y / N		Timing
You yourself suffered a serious illness, injury or an assault	YES	NO	Month _____ Year _____
A serious illness, injury or assault happened to a close relative	YES	NO	Month _____ Year _____
Your parent, child or spouse died	YES	NO	Month _____ Year _____
A close family friend or another relative (aunt, cousin, grandparent) died	YES	NO	Month _____ Year _____
You had a separation due to marital difficulties	YES	NO	Month _____ Year _____
You broke off a steady relationship	YES	NO	Month _____ Year _____
You had a serious problem with a close friend, neighbour or relative	YES	NO	Month _____ Year _____
You became unemployed or you were seeking work unsuccessfully for more than one month	YES	NO	Month _____ Year _____
You were sacked from your job	YES	NO	Month _____ Year _____
You had a major financial crisis	YES	NO	Month _____ Year _____
You had problems with the police and a court appearance	YES	NO	Month _____ Year _____
Something you valued was lost or stolen	YES	NO	Month _____ Year _____

Appendix 5. Participant invitation letter



The Leeds Teaching Hospitals   
NHS Trust



**Interview Invitation Letter**

Our ref: «TrialCode»  
NHS Number: «NHSNumber»  
«Title» «Initial» «Surname»  
«Address1»  
«Address2»  
«Address3»  
«City»  
«County»  
«Postcode»

Charles Thackrah Building  
University of Leeds  
101 Clarendon Road  
**Leeds**  
LS2 9LJ

Date

Dear «Title» «Surname»

**An invitation to participate in an interview as part of the CASPER study:  
An interview on the experience of life events and difficulties**

As you know, researchers at the University of Leeds are conducting a study called CASPER. We are grateful that you are taking part in this study. **As part of the CASPER study, we want some participants to take part in an individual interview about their experience of life events and difficulties.**

The enclosed information leaflet explains the interview in more detail. **A researcher will telephone you in a few days to tell you more about this aspect of the CASPER study and find out if you would like to take part. The researcher's name is Hjordis Donoghue.**

Of course, taking part in an interview is voluntary. If you do not wish to take part, please let Hjordis know when she telephones, or ring her directly on 0113 343 0829. Alternatively, you can email her at ps08hmb@leeds.ac.uk. If you decide not to take part in the interview your participation in the main CASPER study will continue, and the standard of care you receive from your GP will not be affected in any way.

If you have any queries, please contact Hjordis at the University of Leeds on 0113 343 0829. If there is no-one available, please leave a message and someone will contact you as soon as possible.


Thank you for your time and help.

Yours sincerely

Hjordis Donoghue, MSc BSc  
Psychologist in Clinical Training

## Appendix 6. Participant information sheet



The Leeds Teaching Hospitals   
NHS Trust



### Information about the Research Interview

#### Invitation to take part in an interview

You have already kindly agreed to take part in the CASPER Study looking at mental well-being in older adults.

We are now inviting you to take part in an interview looking at your experience of life events and difficulties.

#### Why am I being invited to take part?

We want to talk to a variety of older adults from the study about their experience of life events and difficulties.

We are hoping to hold 40 individual interviews. The main purpose of the discussions is to find out about the life events and difficulties experienced by older adults and whether these may be related to the experience of depressive symptoms.

You may already have completed a *Patient Health Questionnaire* and we are interested in interviewing older adults with a range of different answers to that questionnaire.

#### Why is it important to know about life adversity

There is little research into the link between depressive symptoms and life events in the UK population. There is also little research into the kinds of life events people experience across stages of older adult life.

The findings of this research will provide an estimation of local depression rates in older adults, and further the understanding around the life events commonly experienced in these stages of life.

This may highlight areas which could be addressed within therapy to improve the wellbeing of older adults and their families.

#### What will I need to do if I take part?

If you agree to take part, you will take part in an individual interview which will last about 60-90 minutes. The interview will be held in either your own home, or at the University of Leeds - whichever is more convenient for you. A researcher will contact you to arrange a date and time.

A researcher will want to talk to you about your experiences of life events and stresses you may have had in the past 12 months. This will involve questions about changes in your health, bereavements, leisure activities, housing arrangements, employment or retirement, financial situation, and relationships with people around you.

There are no right and wrong answers to any questions we will ask in the interview. We just want to find out about your experiences.

You are free to end the interview at any time and you do not have to discuss anything that you don't want to. All our researchers are female.

The interviews will be audio-recorded on a dictaphone so that we can keep an accurate record of everything that is said. The recording will be saved onto a secure university computer.

We can pay you for any travel expenses you incur if you decide to attend the University of Leeds for your interview. You will just need to keep travel tickets or get a receipt from any taxi you use.

### **What are the possible benefits of taking part?**

Some people find that talking about their experiences helps. The results of the discussions may help researchers to understand more about the type of life events experienced at different stages of older adult life, and how this links to the experience of depressive symptoms. We hope the information we from this research will go toward improving services for older adults who are experiencing emotional difficulties.

### **What are the possible disadvantages of taking part?**

If you take part in an interview, you will need to give roughly 60-90 minutes of your time.

We will also ask you about life events and difficulties over the past 2 years, which some people may find upsetting to discuss. If you are feeling unhappy or upset talking about these experiences you can tell the researcher who will stop asking questions if you want them to.

We will discuss what kind of support you have available, should you need some support after the interview. We will ask you if you would like to contact a health professional, such as your GP. All older adults who take part will be provided with details of various places they can go to for help and support.

On very rare occasions we may feel that someone is so distressed that

they are at risk of hurting themselves or other people. In these circumstances we would need to inform your GP or another doctor. We would always discuss this with you first and help you to get the support you need.

### **Do I have to take part?**

No, it's voluntary. If you decide not to take part in the interview, no one will mind and it will not affect your participation in the CASPER study.

### **What happens when the interviews finish?**

When the interviews finish, we will write up the information and may publish it in journals that will be read by health professionals and researchers. We may present the results at conferences and meetings. At no point will your identity be known.

We will give you a summary of the results if you wish.

### **If I take part, will all the information be kept confidential?**

Yes, only the research team will know that you have taken part in the interviews.

The interview will be audio recorded with your permission, and each audio recorded interview labelled with a study number that does not identify you personally.

You will be anonymous in any written reports of the research.

All recordings will be stored securely for a period of 5 years after the study is finished; then they will be destroyed.

### Who is organising and funding the study?

This part of the CASPER Study is being organised by researchers at the University of Leeds, funded as part of the Doctoral training programme in Clinical Psychology, through Leeds Teaching Hospitals NHS Trust.

### Who has reviewed and checked the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well-being and dignity. This research has been reviewed and approved by Yorkshire and the Humber Research Ethics Committee.

### What do I do now?

A researcher will telephone you in the next few days to find out if you would like to take part. The researcher can give you more information if you need it and will be happy to answer any of your questions.

### Thank you for reading this!

**If you have any questions about the study please contact us.** A friend or relative may speak to us on your behalf if you wish. There is an answering machine available 24 hours a day, so please leave a message and one of the research team will contact you as soon as possible.

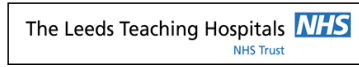
#### Contact details:

**Researcher:** Hjordis Donoghue

**Research helpline:** 0113 343 0829

**Address:** Charles Thackrah Building, University of Leeds, 101 Clarendon Road, Leeds, LS2 9LJ

Appendix 7. Participant consent/decline form



**Interview Consent Form**

**Title of Project:** Life Adversity and Depression Across Stages of Older Adult Life  
**Contact Name:** Hjordis Donoghue MSc BSc (Psychologist in Clinical Training)  
**Contact Details:** Charles Thackrah Building, University of Leeds, 101 Clarendon Road, Leeds, LS2 9LJ Tel: 0113 343 0829; Email: [ps08hmb@leeds.ac.uk](mailto:ps08hmb@leeds.ac.uk)

- Please initial each box**
1. I confirm that I have read and understand the information sheet [version 1, 29/10/12] for this study and have had the opportunity to ask questions
  2. I understand that taking part in an interview for this study is voluntary and that I am free to withdraw at any time without giving any reason
  3. I understand that the interview will be audio-recorded and the recording will be stored on a secure computer at the University of Leeds for up to 5 years
  5. I understand that the audio-files will be strictly confidential and that I will be anonymous in any written reports from the research
  6. I understand that I can have an audio-copy of the interview and/or a summary of the project findings if I wish
  7. I understand that my details (e.g. name, address, doctor's practice) will be strictly confidential, stored securely at the University of Leeds and will not be passed on to any individual within or outside the University
  8. I agree to take part in the above study by taking part in a one to one interview

\_\_\_\_\_  
Name of Participant (print)                      Date                      Signature

\_\_\_\_\_  
Researcher (print)                      Date                      Signature

- Please initial each box**
- I wish to be sent an audio-copy of the interview
- I wish to be sent a summary of the project findings

Appendix 8. Table LTE-Q collapsed into LEDS

LTE-Q item	LEDS group
You yourself suffered a serious illness, injury or assault	Health
A serious illness, injury or assault happened to a close relative	Health
Your child, spouse or parent died	Miscellaneous / Death
A close family friend or another relative (niece, cousin, grandchild) died	Miscellaneous / Death
You had a separation due to marital difficulties	Marital / Partner relationship
You broke off a steady relationship	Marital / Partner relationship
You had a serious problem with a close friend, neighbour or relative	Other relationships
You became unemployed or were seeking work unsuccessfully for more than one month	Employment
You were sacked from your job	Employment
You had a major financial crisis	Money / Possessions
You had problems with the police and a court appearance	Crime / Legal
Something you valued was lost or stolen	Money / Possessions