RISK FACTORS FOR SUICIDE IN OLDER PEOPLE AND GRIEF EXPERIENCES OF BEREAVED RELATIVES AND FRIENDS: A DESCRIPTIVE AND CASE CONTROL STUDY

by

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Introduction

Suicide rates in older people are high in most countries of the world, and remain high in older men in the UK. Recent Government policy has set targets to reduce suicide rates. There has never been a controlled psychological autopsy study of suicide in older people in the UK to examine the risk factors for suicide in this age group, and worldwide there has been very little research on the role of cognitive impairment, personality factors, and life problems as risk factors for suicide in older people. Although evidence suggests that those bereaved through suicide may be particularly vulnerable to developing severe grief reactions, there have been few controlled studies on the topic and little is known about grief experiences of individuals bereaved through suicide of older people. There has been no recent UK study systematically examining the impact of the legal procedures following a suicide on bereaved relatives and friends.

Aims of the study

For a sample of older people dying through suicide:

1. To describe the demographic characteristics, circumstances of death, and contact with primary care and psychiatric services.

2. To determine the prevalence of psychiatric disorder, personality disorder, and significant maladaptive personality traits.

3. To determine the nature and frequency of life problems due to physical illness, bereavement, occupation and retirement, finances, accommodation, and other factors preceding death.

4. To compare the rate of these psychiatric and life problem variables with a control group of people who had died through natural causes.

For a sample of relatives and friends bereaved through the suicide of an older person:

1. To describe the nature and frequency of problems, especially those related to the legal sequelae of suicide.

2. To determine the frequency of grief symptoms hypothesised to be particularly prominent in post-suicide bereavement compared to a group bereaved through death from natural causes.

Method

For the study on risk factors for suicide, 195 individuals 60 years and over at the time of death who had died through suicide in four counties in central England between January 1995 and May 1998 were the study subjects. Information on demographic factors, circumstances of death, contact with health services, psychiatric history and life problems before death was collected from coroners' records and medical notes. A semi-structured psychological autopsy interview with a relative or friend of the deceased was performed in 100 cases, and ICD-10 psychiatric and personality disorder diagnoses were made for each subject. Similar information was collected for a control group of 54 subjects, age and sex matched with the suicide group who had died through natural causes in same time period.

For the study on bereavement after suicide, the problems experienced during legal procedures after death and the grief experiences of 85 relatives and friends bereaved through the suicide of someone 60 years old or over (recruited from the participants from the first part of the study) were examined. In a case-control study the

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bereavement reactions in a sub-group of 46 of this sample were compared with 46 of

the control group who had been bereaved through a natural death. Interviews were

semi-structured and included the Grief Experience Questionnaire (GEQ).

Results

A Risk factors for suicide

1. 67.7% of the suicide subjects were male, and a higher proportion of men than
   women were divorced or single.

2. The commonest methods of suicide were hanging in men and drug overdose in
   women. Analgesics, antidepressants, and hypnotic drugs were the commonest
   types used in overdose.

3. 49.8% of the suicide group had seen their GP in the month before death, and
   15.4% were under psychiatric care at the time of death.

4. 77% of the suicide sample had a psychiatric disorder at the time of death, most
   often depression (63%).

5. Personality disorder or personality trait accentuation was present in 44%, with
   anankastic (obsessional) or anxious traits the most frequent.

6. Depression, personality disorder, and personality trait accentuation emerged as
   predictors of suicide in the case-control analysis.

7. Physical illness was the commonest life problem associated with suicide and
   was a contributory factor to death in 62% of cases. Distressing symptoms were
   commonly secondary to non life-threatening illnesses.

8. The presence of unresolved problems from a bereavement over one year before
   death emerged as a predictor of suicide in the case-control study.

B Bereavement after suicide

1. Forty-two percent of those bereaved through suicide reported problems in their dealings with the coroner's office, and 38.8% described distress caused by media reporting of the inquest.

2. In the case-control study of grief reactions, those bereaved through suicide scored higher on subscales of the GEQ measuring stigmatisation, shame, sense of rejection, and "unique reactions" compared with those bereaved through natural death.

Conclusions

Given the high proportion of drug overdoses in the sample, effective strategies to prevent suicide in older people might include improving the prescribing of analgesics and antidepressants. Personality factors, as well as depression, are important risk factors for suicide in older people and thorough personality assessment should be included in any risk assessment. The impact of physical symptoms, even those due to non life- threatening illnesses in contributing to suicide in older people needs to be recognised by clinicians.

Problems in the media reporting of inquests and in inquest procedures are potentially remediable sources of distress for bereaved relatives. The common themes of stigma, shame, and a sense of rejection in bereavement after suicide suggest that these areas should be specifically addressed in the counselling of relatives bereaved in this way.

1 INTRODUCTION

1.1 GENERAL INTRODUCTION

Suicide is the third most important contributor to potential years of life lost in the United Kingdom after ischaemic heart disease and cancer (Gunnell & Frankel, 1994). Despite recent declines in elderly suicide rates in many industrialised nations, including the United Kingdom, suicide rates are still highest in people over 75 years old in most countries of the world (De Leo, 1997). Recent Government policy has prioritised suicide as a public health issue and set targets for the reduction in suicide rate (Department of Health, 1992, 1999a, 1999b). A National Suicide Prevention Strategy for England has recently been published (Department of Health, 2002). In addition, the mental health care of older people receives specific attention in the recent National Service Framework (NSF) for Older People (Department of Health, 2001a). Understanding the reasons why some older people end their lives may help to prevent deaths. It will also clarify the sources of distress and hopelessness in the older population, to help guide the implementation of the NSF and other initiatives to improve the health of older people.

Every death through suicide causes distress to relatives, friends, and carers. The problems experienced by people bereaved through suicide have long been recognised as under-researched, and yet are potentially remediable (Clark & Goldney, 2000).

This thesis describes a study of the characteristics of and risk factors for suicide in older people, and the needs of those bereaved through suicide. In this chapter, after brief discussions of the definition, history, and classification of suicide, suicidal

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behaviour in older people will be discussed including risk factors for completed suicide, hopes for prevention of suicide, the gaps in our knowledge and how the study described in this thesis attempted to address some of them. In order to provide background to the second part of the study, the symptoms of normal and abnormal grief will be summarised, before discussing bereavement after suicide and the areas of this topic which need more research. The Introduction will end with the aims of the study.

1.2 SUICIDE IN OLDER PEOPLE

1.2.1 Definition of suicide

The French sociologist Emile Durkheim made a definition of suicide which remains relevant: " the termination of an individual's life resulting directly from a positive or negative act of the victim himself which he knows will produce this fatal result" (Durkheim, 1897). However, the *legal* definition of suicide varies across nations. Whereas in many countries a death will be registered as a suicide on the balance of probablities, in England and Wales, in order to record a verdict of suicide the coroner has to have evidence that the deceased person *intended to kill him or herself* (Mathews & Foreman,1993; Neeleman & Wessely,1997). This more stringent legal definition of suicide means that the official England and Wales suicide statistics tend to under-report the true number of suicides, with a large proportion of undetermined cause of death or "open" verdicts being probable suicides (O'Donnell & Farmer,1995; Neeleman & Wessely,1997).

1.2.2. Historical perspective

Seidel (1995) described suicide in older people in the ancient Greco-Roman world, and noted the acceptance of self-killing as a solution to incurable illness or disability in these cultures. Williams (2002) summarises the history of British attitudes towards suicide. During the fifth and sixth centuries, punitive attitudes became prominent with the influence of Christian thinkers such as St Augustine. These attitudes persisted through the Middle Ages, with suicide being seen as evidence of demonic possession and "self-murderers" being denied a Christian burial. Coroner's courts could either convict someone of the crime of *felo de se* (a felon of himself) or a person could be deemed *non compos mentis,* in which case they were not convicted. Local juries often arrived at the latter verdict out of sympathy for the deceased person's family. During the tightening of English law in the sixteenth century, the punitive Court of Star Chamber was set up which made more verdicts of *felo de se*. In the seventeenth century, the renewed interest in Classical thinking contributed to tolerant attitudes. John Donne in "Biothanatos", used Christian theology to support the idea that suicide was not a sin. In 1823, Parliament abolished the religious penalties for self-murder, but suicide's criminal status only ended in 1961. Despite increased religious tolerance and de-criminalisation, suicide remains a disturbing topic surrounded by stigma.

1.2.3. Typology and taxonomy of suicide

The clinician's need for a classification of suicide which might help predict suicidal behaviour and the theoretical interests of researchers have driven attempts to classify suicide. Suicide can be studied from various perspectives; experts in each field tending to classify suicide according to their own perspective. For example the "medical

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model" links suicide closely to psychiatric illness and explores the relationship between specific disorders and suicide (for example, Lönnqvist, 2000; De Hert & Peuskens, 2000). Proponents of biological and genetic theories of suicide state that suicidal behaviour is, at least in part, independent from psychiatric syndromes, and study the neorobiological and genetic substrates of suicidal behaviour (Träskman-Bendz & Mann, 2000; Roy *et al*, 2000). Psychologists explore the types of thinking associated with suicidal behaviour (Shneidman, 1992; Williams & Pollock, 2000). Durkheim's (1897) sociological classification distinguished four types of suicide based on polar positions of social integration and regulation; egoistic, altruistic, anomic, and fatalistic, and more recent sociological and epidemiological researchers have emphasised the massive influence that societal attitudes, different cultures, and social change have on suicide rates (Bille-Brahe, 2000).

Other attempts at suicide classification have tried to integrate different perspectives, and make more clinically meaningful classifications. Ovenstone and Kreitman (1974) divided people who had died through suicide into two types; the "chronically disorganised' subtype characterised by longstanding psychological instability and social disruption prior to the suicidal act, and the "acutely disrupted" subtype whose suicide was triggered by an acute life event such as illness or bereavement. Reynolds and Berman (1995) used a statistical approach to derive five clusters of subtypes - Escapist, Confused, Aggressive, Alienated, and Depressive, which described 86% of all cases in a large series of suicides. As the authors note, it is unlikely such attempts at suicide classification will ever be widely used, because of the large overlap between categories and the significant proportion of cases not fitting into any category.

Attempts are now being made to integrate different models of suicide, exploring how different risk factors interact and influence suicidal behaviour over a course of time (van Heeringen *et al*, 2000).

1.2.4 Suicidal ideation

Suicide can be seen as a spectrum ranging from feelings of hopelessness through to suicidal death. Several large scale community surveys of older people in the USA (Paykel, 1974), Sweden (Forsell *et al*, 1997; Skoog *et al*, 1996), Ireland (Kirby *et al*, 1997), Australia (Jorm *et al*, 1995) and Germany (Linden & Barnow, 1997) have examined the rates of suicidal ideation in community dwelling older people and found broadly similar results. Feelings of hopelessness were common in these samples; 15.5% of people aged 65 and over in the Dublin study said they had felt life was not worth living in the month prior to the interview (Kirby *et al*, 1997). Serious suicidal feelings are much rarer; only 3.1% of the same sample had felt a wish to die. Older people appear to have a similar frequency of suicidal thoughts to the younger population (Paykel *et al* 1974). Most (Skoog *et al*, 1996; Forsell *et al*, 1997; Jorm *et al*, 1995) but not all (Kirby *et al*, 1997) studies have shown suicidal feelings to be commoner in older women. Rates of suicidal ideation in older people are much higher in those with depressive symptoms (Forsell *et al*, 1997; Skoog *et al*, 1996). There is a weaker link with dementia (Forsell *et al*, 1997; Rao *et al*, 1997; Draper *et al*, 1998). Linden and Barnow (1997) found that in the few cases where suicidal thoughts were not associated with a psychiatric diagnosis, significant psychiatric symptoms were nearly always present. Disability, pain, sensory impairment, institutionalisation, and single marital status have also been shown to be associated with suicidal thinking (Forsell *et al*, 1997; Jorm *et al*, 1995).

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1.2.5 Indirect self-destructive behaviour

Older people are prone to behaviours which, although not directly suicidal, increase the chance of dying. Such behaviours range from acts such as food refusal with the aim of starving to death, to behaviours of less direct intent such as non-adherence to treatment. Indirect self-destructive behaviours are more common in institutional settings, and may be a substitute for more overt suicidal acts in physically dependent people. Risk factors for such behaviour include physical dependence (Draper *et al*, 2002), cognitive impairment (Nelson & Farberow, 1980; Draper *et al*, 2002), low religiosity, dissatisfaction with treatment and loss events (Nelson & Farberow, 1980). Nursing homes with high staff turnover, a large number of residents and low cost had an increased prevalence of life threatening behaviour in one American study (Osgood *et al*, 1991).

1.2.6 Deliberate self-harm

The boundary between indirect self-destructive behaviour and deliberate self-harm is blurred. Bean (1973) in a study of overdoses in older people, demonstrated overlap in the characteristics of "accidental" overdoses and those labelled "deliberate" by admitting medical teams. Bean suggested that the categorisation of self harm acts may be influenced by factors such as the type of drug ingested rather than the circumstances of the act itself. The high suicidal intent of most acts of deliberate self-harm in older people contrasts with the more heterogenous nature of these acts in the young (Draper, 1996; Conwell, 1997). Salib *et al* (2001a) found that elderly suicide attempters share many characteristics with older people dying through suicide, concluding that each act of deliberate self-harm in the elderly should be regarded as a failed suicide. There is

marked international variation in rates of deliberate self-harm in older people; a European study revealed rates ranging from 14 per 100,000 in Würzburg, Germany, to 111 per 100,000 in Huddinge, Sweden (De Leo *et al* ; 2001). The *absolute number* of attempted suicides is higher in older women in a 3:2 ratio, but *rates* according to gender are similar because there are fewer older men than women (Draper, 1996). Other demographic risk factors associated with self-harm in older people include widowed, single, or divorced marital status and low socio-economic group (Draper, 1996). In developed countries drug overdose is the commonest method of self-harm in older people with benzodiazepines, analgesics, and antidepressants the usual drugs used (Draper, 1996).

Older people attempting suicide are more likely to suffer psychiatric illness than younger patients (Merrill & Owens, 1990; Ticehurst *et al*, 2002) and if admitted spend longer in hospital (Ticehurst *et al*, 2002). Well over half will have depression, with alcohol abuse in 5-32% and other psychiatric disorders in around 10% (Draper, 1996). In a detailed study (Batchelor & Napier,1953), 75% of older suicide attempters were described as "vulnerable personalities"; sensitivity, anxiety, obsessionality, and dependency being the predominant traits. Later studies have been disappointing in their lack of personality assessments, but personality *disorder* seems much less common than in the younger self harm population (Draper, 1996).

Unresolved grief, usually following spousal bereavement, was present in 13-44% of older self-harm patients in Draper's review (1996). Older suicide attempters seem to be more socially isolated than the general population of the same age, with a higher proportion living alone (Nowers, 1993), and with less help available at a time of crisis

(Lyness *et al*, 1992). Pierce (1987) found that 63% of his sample suffered "significant physical illness", but in only 18% did he feel that the illness had contributed towards the suicidal act.

A British study found the rate of repetition of self-harm in a cohort of older deliberate self-harm patients to be 5.4% annually, lower than for younger age groups. However, the rate of *completed suicide* (around 6% during the 2-5 year follow-up), was higher than for younger deliberate self-harm patients. The factors predicting later suicide were male gender, a psychiatric history prior to the index attempt, and persistent depression being treated by a psychiatric team (Hepple & Quinton, 1997).

1.2.7 Epidemiology of suicide

In most countries suicide rates are highest in older people (De Leo, 1997), but in England and Wales, suicide rates in people over 65 years old fell by half between 1985 and 1996 (Hoxey & Shah, 2000; McClure, 2000); a trend mirrored by other industrialised countries (Pritchard, 1996). The suicide rate in men over 85 however, has remained relatively static (Kelly & Bunting,1998; Pritchard, 1996). International comparisons of suicide rates are difficult because of different registration procedures in different nations and the limited data available from developing countries. Overall, suicide rates in New World countries such as the USA, Canada, and Australia are higher than in Western Europe (Cantor *et al*, 1996), whereas rates in Southern Europe (Greece, Italy, Portugal and Spain) are low. Eastern Europe, which is undergoing rapid socio-economic change, has a particularly high rate (Cantor, 2000). In global terms England and Wales have an intermediate overall rate of suicide. Shah and De (1998) summarise data from the WHO Statistics Manual 1995 relating to older people and

reveal similar findings. Suicide rates in older people were particularly high in Hungary, Latvia, and rural China, with low rates in Southern Europe.

Suicide rates are subject to *period effects*. The Second World War, the change over from toxic coal gas to non toxic North Sea gas in the UK (Murphy *et al*, 1986), and restrictions on barbiturate prescribing (Nowers & Irish,1988) were associated with falls in the rate of suicide in older people in the UK. *Cohort effects* are more difficult to identify. Lindesay (1991) points out that suicide rates tend to be higher in those age groups constituting larger proportions of the total population, and suggests that suicide rates may increase in the UK as the "baby boom generation" ages.

In the USA older male suicides outnumber female by 4:1 (Bharucha & Satlin: McIntosh,1992), in the UK the ratio is nearer to 3:1 (Hoxey & Shah, 2000). For all age groups, suicide rates are highest in the divorced, followed by the widowed, then the single, with lowest rates in the married (Smith *et al* 1988). The risk for widowers appears much higher than for widows (Li, 1995) Suicide rates in older immigrants to Australia and the UK seem largely determined by the suicide rate of their country of origin (Burvill 1995; Raleigh & Balarajan, 1992). The link between religion and suicide in the elderly is under-researched. Miller (1979) has suggested that membership of a cohesive religious group such as the Roman Catholic Church may be protective against suicide.

1.2.8 Characteristics of the suicidal act

The high intent accompanying suicidal acts in older people is manifest in the frequent use of violent methods, particularly by men. Shooting accounts for over 70% of older

suicides in the USA (Kaplan *et al*, 1996; Kaplan *et al*, 1997), and is also a common method in Australia and Finland. Due to more stringent firearm controls, drug overdose (more common in women), hanging (more common in men), suffocation, and jumping from a height are the commonest methods in the UK (Cattell, 1988; Cattell & Jolley, 1995). Analgesics, benzodiazepines and antidepressants (tricyclic antidepressants in 95% of cases), are the drugs most frequently implicated in overdose (Shah *et al*, 2002). In England and Wales, the older age groups have the highest rates of suicide from drowning (Kelly & Bunting, 1998).

Cattell and Jolley (1995) found 43% of older suicides left a note. Suicide pacts account for only 0.6% of suicides in England and Wales, but of all deaths in pacts 49% occur in those over 65. Participants tend to be married, and of a higher social class (Brown & Barraclough, 1997).

1.2.9 Neurobiology of suicide in older people

Substantial evidence links suicidal behaviour to a reduction in brain 5-HT (Träskman-Bendz & Mann, 2000). In a study on the neurochemistry of suicidal behaviour in older people Jones and colleagues (1990) demonstrated lower concentrations of CSF 5-HIAA and HVA in suicidal depressed patients than in non suicidal depressed patients and a normal control group. Conwell and co-authors (1995) pointed out that much research in this area has neglected to examine the possible changes in the neurobiology of suicide with ageing, particularly as ageing alters the brain 5-HT system.

1.2.10 Psychiatric disorder

Psychological autopsy studies from the USA and Scandinavia have shown psychiatric illness to be present in over 70% of older people who commit suicide (Conwell *et al*, 1991; Conwell et al, 1996; Henriksson *et al*, 1995; Waern *et al*, 2002a). Major depression is by far the commonest disorder, occurring in 44-87% of suicides (Conwell, 1997; Shah & De, 1998). As in younger people, feelings of hopelessness, especially if persisting after treatment of depression, are associated with suicidal behaviour (Rifai *et al*, 1994). Studies comparing older people dying through suicide with younger suicides from the same population have shown that depression is more often associated with suicide in older people than in younger groups (Conwell *et al*, 1996). Three recent case-control studies using living age-matched control groups have confirmed depression to be a major risk factor for suicide in older people (Conwell *et al*; 2000; Beautrais, 2002; Waern *et al*, 2002a). Depressive symptoms such as agitation, somatic preoccupation and insomnia have been suggested as predictive of suicide; this awaits confirmation in controlled studies. In a recent prospective community-based study in the USA, self-reported sleep quality, as well as depressive symptoms at baseline increased the risk of suicide in the subsequent ten years (Turvey *et al*, 2002). Chronic depressive symptoms and a first episode in late life may be associated with increased suicidal risk (Shah & De, 1998).

There is international variation in rates of alcohol and substance misuse in series of older suicide victims. Rates of over 20% are reported from the USA and Scandinavia (Carney *et al* 1994; Conwell *et* al; 1996; Henriksson *et al*, 1995; Waern *et* al, 2002a), with rates of 10% or lower reported in UK studies (Barraclough, 1971; Cattell, 1988; Cattell & Jolley, 1995). Comparative studies show higher rates of alcohol and other

substance misuse in younger people committing suicide (Conwell *et al*, 1996; Henriksson *et al*, 1995).

Schizophrenia is an important risk factor for suicide in younger people; a recent UK psychological autopsy study made the diagnosis in 19% of people under 35 years old dying through suicide (Appleby *et al*, 1999). However, schizophrenia is found in less than 10% of older suicides (Conwell *et al*, 1996; Henriksson *et al*, 1995; Waern *et al*, 2002a). The role of neurotic and stress related disorders in suicide in older people remains unclear. Most studies have reported rates of less than 10%, although Waern's (2002a) recent study found 15% of the study sample to be suffering from "anxiety disorder".

Follow-up studies of patients with dementia have not revealed any suicides (Harris & Barraclough, 1998). The rates of cognitive disorders are often not reported separately in psychological autopsy studies. When reported, rates are low; Henriksson *et al* (1995) found a rate of 5% of "organic disorders", and Waern and colleagues (2002a) a rate of 3.5% in their samples. The low rates may reflect the fact that patients at risk of suicide have *mild* cognitive impairment, which is difficult to detect at psychological autopsy. Patients with more severe dementia might lack either the cognitive ability to perform a suicidal act, or have lost suicidal ideas along with their insight. A preliminary case-control post-mortem study showed Alzheimer disease pathology (plaques and tangles) to be overrepresented in elderly patients who committed suicide compared with an age-matched control group dying through natural causes (Rubio *et al*, 2001).

1.2.11 Contact with health services preceding death

Over 43% of older suicides have been in contact with their general practitioner within the month before death (Conwell, 1997), a higher proportion than for younger suicide victims. Cattell (1988) documented recent hospital discharge and, conversely, the fear of hospitalisation, as precipitants to suicide in some older people. Vassilas and Morgan (1994) found that although over 50% of their series of older suicides had a history of past psychiatric contact only 18% had seen a psychiatrist in the month prior to death, perhaps indicative of general practitioners' reluctance to refer older patients. Depression preceding suicide has often been inadequately treated (Caine *et al*, 1996, Duckworth & McBride, 1996). Two controlled studies, from Switzerland (Modestin, 1989) and Australia (Shah & Ganesvaran, 1997) have studied suicide in older psychiatric inpatients and found that compared with inpatients who had not died, the suicide group tended to have a long incapacitating illness and higher rates of depression, alcohol misuse, and suicidal ideation.

1.2.12 Personality factors

Personality and cognitive style play a key role in determining an individual's suicide risk in the context of life stresses (Williams & Pollock, 2000). However, this important area remains largely neglected in the study of suicide in the elderly. The few studies of personality factors in old age suicide have indicated a low rate of personality disorder compared with younger suicides. Henriksson's group (1995) found 14% of suicides in people 60 and over were associated with an Axis II diagnosis, compared to 34% of those under 60. The applicability of personality disorder diagnostic criteria to older people has been questioned and some researchers feel a more meaningful approach is the study of personality traits associated with suicide. A North American group

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(Duberstein *et al*, 1994; Duberstein, 1995) have demonstrated a link between suicide in old age and a low "openness to experience" (characterised by methodical, rigid, emotionally restricted personality traits), contrasting with the impulsive personality traits associated with younger suicide victims.

1.2.13 Physical illness and functional limitation

Physical illnesses are the most frequent life events preceding suicide in older people (Heikkinen & Lönnqvist,1995). In 84% of a USA sample of older suicide victims physical illness was considered a stressor at the time of death (Carney *et al*, 1994). Serious physical illness affecting any organ category was found to be a predictor of suicide in a Scandinavian case-control study (Waern *et al*, 2002b).

Several studies have tried to clarify if specific symptoms are associated with suicide. Visual impairment was associated with an increased risk of suicide in a case-control study (Waern *et al*, 2002b). Pain is an important factor in around 20% of suicides in older people (Cattell, 1988; Purcell *et al*, 1999). Other factors, such as loss of independence and fear of becoming a burden on relatives, are likely to be as important as specific physical symptoms in contributing to suicide risk; functional limitation was found to be a predictor of suicide in older people in a case-control study (Conwell *et al*, 2000) and a high "physical illness burden" was associated with male suicides in the Scandinavian case-control study (Waern *et al*, 2002b).

Certain diagnoses are associated with an increased risk of suicide. A study comparing health status prior to death in older people dying from suicide, injury, and natural death (Grabbe *et al*, 1997) showed suicide victims were more likely to have cancer. Case-register studies have confirmed a modest but definite increased risk of suicide in patients with cancer, particularly men (Harris & Barraclough, 1994; Stenager &

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Stenager, 2000) and malignant disease emerged as risk factor for suicide in the Scandinavian case-control study (Waern *et al*, 2002b). The elevated risk of suicide in neurological disease, particularly multiple sclerosis and epilepsy, is also well established (Harris & Barraclough, 1994; Stenager & Stenager, 2000; Waern *et al*, 2002b). A recent Danish study of nearly 40,000 stroke patients showed a definite increased risk of suicide, especially for patients under 60 years old (Stenager & Stenager, 1998), and noted the possible link with post-stroke depression. In contrast with the research on cancer and neurological illness, the suicide risk associated with common cardiovascular, respiratory, and musculoskeletal disorders has been very poorly researched (Stenager & Stenager, 2000) although Horton-Deutsch *et al* (1992) suggested that elderly people with chronic respiratory disease may be at risk.

1.2.14 Social factors and life events

Whether living alone is a risk factor for suicide is uncertain (Shah & De, 1998). In only 3% of Conwell and colleague's (1990) series was social isolation felt to be a stressor and Heikkinen and Lönnqvist (1995) found levels of social contact prior to death to be similar in old and young suicide victims. However, in a recent case-control study from New Zealand, the presence of a limited social network predicted membership of the suicide group (Beautrais, 2002). Miller (1978) found older male suicides in Arizona were less likely to have had a confidante before death than a natural death control group, and in a large community-based prospective study from the USA, lack of a confidante at baseline increased the risk of suicide within the next ten years (Turvey *et al*, 2002). Suicide is rare in nursing homes (Osgood *et al*, 1991) although anticipation of nursing home placement can be a trigger to suicide (Loebel *et al*, 1991).

The role of life events and problems other than physical illness in contributing to suicide in older people has received relatively little research attention in psychological autopsy studies, and has not been the subject of a case-control study. The risk of suicide is increases during the first year after bereavement in men (Bunch,1972). However bereavement may not be any more common as a precipitant to suicide in the elderly compared to younger age groups (Heikkinen and Lönnqvist, 1995). Retirement can lead to loss of self esteem, but its precise relationship to suicide in older people has yet to be determined (Miller, 1978; De Leo & Ormskerk, 1991). Conwell (1995a) highlights elder abuse as a probable precipitant for suicide in some cases, although research evidence is lacking. Of course, any traumatic event such as interpersonal conflict, separation, or financial problems may act as a precipitant to suicide in the elderly (Heikkinen and Lönnqvist, 1995).

Involvement in combat or other traumatic war experiences are known to be associated with lasting psychological sequelae (Lee *et al*, 1995) and American veterans of the Vietnam conflict have been reported to have a high risk of suicide (Hendin & Haas, 1991). However the role of the psychological aftermath of war in suicide in older people in the UK has not been studied.

1.2.15 Rational suicide and end of life issues

About 10-20% of suicides in older people are not associated with psychiatric disorder (Conwell, 1997), but this group have not been examined in detail in research papers. It is unclear how many of these are true "rational suicides"; that is carefully thought out acts in response to insoluble and unbearable life problems. Conwell and Caine (1991) are worried that, in light of the link between suicide and depression, the suicidal wishes

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of older people may erroneously be assumed to be rational, when in fact they are coloured by low mood.

The lenient attitudes towards euthanasia and physician assisted suicide in the Netherlands and the recent legalisation of physician assisted suicide in Oregon, USA, have stimulated a debate on end of life issues in older people. Pritchard (1995) argues that older people might feel pressurised into opting for death rather than being a "burden" on relatives should physician assisted suicide or euthanasia become more widely legalised and Post (1997) highlights the potential vulnerability of people with dementia. However, Onwuteaka-Philpsen (1997) points out the rates of euthanasia and physician assisted suicide amongst older people in the Netherlands are low and there is no evidence that such deaths are increasing. Whether this would be so in countries with different health care systems and cultures from the Netherlands is uncertain.

1.2.16 UK Government Policy on Suicide Prevention

Suicide prevention has been high on the UK health promotion agenda in recent years. The White Paper *The Health of the Nation* (Department of Health, 1992) set targets for reductions in suicide rates; a 15% reduction in the overall rate and a 33% reduction for those with severe mental illness. The Labour Government's White Paper *Saving lives: Our Healthier Nation* (Department of Health, 1999a) included mental health as one of four target areas, with a specific target to reduce suicide rates by at least 20% by 2010. Standard Seven of the National Service Framework for Mental Health (Department of Health, 1999b) advocates measures devoted to achieving this target, including improved management of depression in primary care, systematic care management, risk assessment, assertive outreach for people with severe mental illness,

and work to reduce prison suicide rates. The Department of Health has funded the National Confidential Inquiry into Suicide and Homicide by People with a Mental Illness which has been collecting data on suicides of people in contact with mental health services since 1991, and has published its first major report (Department of Health, 2001b). This listed thirty-one recommendations for mental health services, including improved staff training in risk assessment, unified documentation, greater access to evidence-based treatments, assertive follow up of disengaged patients, safer inpatient environments, and better post-discharge follow-up arrangements. The recent National Suicide Prevention Strategy for England (Department of Health, 2002) provides a list of quite specific actions in six areas; the availability and lethality of suicide methods, the targeting of high risk groups (young men, prisoners, psychiatric patients, deliberate self-harm patients and certain occupational groups), the promotion of well-being in the population, the improvement of reporting of suicidal behaviour in the media, promotion of research on suicide, and the monitoring of progress in reducing suicide rates.

1.2.17 Prevention of suicide

The general measures to reduce suicide in psychiatric patients advocated in the National Suicide Prevention Strategy for England (Department of Health, 2002) and the National Confidential Inquiry (Department of Health, 2001b) are highly applicable to patients of all ages. However, some interventions have been suggested more specific to the older population. Reductions in suicide rates are best achieved by population-based strategies (Lewis *et al*, 1997), in particular limiting the access to certain methods of suicide. The dramatic declines in suicide rates in older people in the UK after detoxification of coal gas and the restrictions on the prescribing of barbiturates bear

this out (Lindesay,1986). In European countries the commonest method of suicide in older people is drug overdose. Lindesay (1986) discussed options for reducing access to the drugs commonly used in overdose by older people at risk of suicide, such as avoiding hypnotics and opiates and using less cardiotoxic antidepressants in these people. A study showing a reduction in overdose deaths since the introduction of maximum pack sizes for paracetamol and aspirin shows that legislation reducing access to the means of death can lead to a demonstrable reduction in deaths (Hawton *et al*, 2001).

Another approach to suicide prevention, advocated in the recent Suicide Prevention Strategy (Department of Health 2002) is the targetting of high risk groups. Half of all older suicide victims contact their GP in the month preceding death (Vassilas & Morgan, 1994), and evidence from studies carried out in primary care shows that depression is under-treated in older people (Caine *et al*, 1996; Crawford *et al*, 1998), so improving the management of depression in primary care seems an obvious measure to prevent suicide in older people. Another group at high risk are older deliberate self-harm patients. Following the good practice guidelines laid down by the Royal College of Psychiatrists (1994) and having a low threshold for considering admission of these patients (Pierce, 1987) might reduce some of the suicides which follow self harm in older people. Social support provided for people at risk may help; an interesting Italian study suggested that a telephone service involving an alarm system to access help and regular supportive phone contact might reduce suicide rates in socially isolated elderly people (De Leo *et al*, 1995, 2002; Jones, 2002).

1.3.18 Research methodology in the study of suicide

The choice of research method depends on which question is being asked by the researcher. The study of large data sets from the Office for National Statistics or the WHO is used in epidemiological research into international and local geographical variations in suicide rates (Bunting & Kelly, 1998), trends over time (Kelly & Bunting,1998; Hoxey & Shah, 2000; Mc Clure, 2000) and mode of death (Kelly & Bunting, 1998). Analysis of coroners' inquest and medical notes provides more information on the circumstances of the death, demographic characteristics, and contacts with health professionals prior to death (Cattell,1988; Cattell & Jolley,1995; Conwell *et al*, 1990a).

"Psychological autopsy" interviews with a relative or friend of the deceased person were pioneered in the USA (Clark & Horton Deutsch, 1992) and are now an established research tool (Hawton *et al*, 1998). Despite their methodological problems, these interviews are still the best method of collecting detailed information on psychological variables (Conwell *et al*, 1996; Henriksson *et al*, 1995; Waern *et al*, 2002a) and life events (Heikkinen & Lonnqvist, 1995) contributing to completed suicide. The methodology of the psychological autopsy and the use of control groups will be further discussed in the Conclusions. Shah and De (1998) highlight drawbacks of the psychological autopsy of older suicide victims. Young informants may be unable to provide information on early life history, the overlap between physical and psychiatric symptoms can make retrospective psychiatric diagnosis difficult, and socially isolated suicide victims may lack an informant, although Younger *et al* (1990) showed that this was only the case in 10% of their subjects.

Papers reporting quantitative research such as the prevalence of risk factors miss the richness of detail and complex interaction between variables captured by a full interview with an informant. Single case studies (Alexopoulos,1991) or case series with case vignettes (Conwell *et al*, 1990b; Horton-Deutsch *et al*, 1992; Rohde *et al*, 1995) can fill this gap and help bring the subject alive for clinicians. Qualitative research, when performed well, is methodologically complex, but can explore themes not amenable to quantitative analysis such as the psychological attitudes which underly suicidal feelings (Moore, 1997).

1.2.19 *Gaps in the knowledge on suicide in older people*

Since Barraclough's (1971) pioneering study there has been no further psychological autopsy study of suicide specifically in older people in the UK. Despite good studies from other countries examining the relationship between psychiatric disorder and suicide in older people (Conwell *et al*, 1996; Henriksson *et al*, 1995; Waern *et* al, 2002a) there is a need for more detailed information on the role of cognitive impairment, anxiety disorders and personality factors associated with suicide in older people. Two recent case-control studies have started to clarify the role of physical illness and functional limitation (Conwell *et al*, 2000; Waern *et al*, 2002b) but there is only one published, uncontrolled study (Heikkinen & Lönnqvist, 1995) on the nature and frequency of life problems associated with suicide in older people. Many of the problems which are more specific to older people, such as problems with accommodation, moves into residential care, retirement, financial concerns, and long term sequelae of war have not been examined in previous studies.

1.3 BEREAVEMENT AFTER SUICIDE

1.3.1 Bereavement, mourning and grief

Bereavement is defined as the loss of a loved person through death, mourning is the voluntary social expression of loss, and grief refers to the emotional and behavioural reaction to loss. Bereavement is one of the most frequent major life events. By the age of 65 years over half of all women will have suffered at least one bereavement and by the age of 85 years 40% of men will have been widowed (Mitchell & House, 2000).

1.3.2 Normal grief

Normal grief is accompanied by many distressing symptoms, first described in detail by Lindemann (1944), including somatic symptoms, preoccupation with the image of the deceased, guilt and self-blame, hostility and functional disorganisation. Bowlby (1973) and subsequent theorists (Parkes,1998) placed the symptoms of normal grief into four stages based on attachment theory: shock and protest, preoccupation, disorganisation, and resolution. A longitudinal study of grief in widowers recorded the frequency of symptoms at different times after bereavement (Byrne & Raphael, 1994). Intrusive thoughts, sadness, and yearning or pining for the lost person were almost universal at six weeks after bereavement. Feelings of unreality concerning the death, acting as if the lost person was still alive, and hallucinations of the deceased occurred in between 25 and 50% of the sample. Searching for the lost person and feelings of disorganisation, guilt, and anger were less common, being reported by fewer than 25% at six weeks post-bereavement. Grief symptom scores fell with time, but 8.8% of widowers were still achieving grief scores at six and thirteen months similar to the total groups' mean score at six weeks after the loss. The authors suggested that this subgroup were experiencing "chronic grief".

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1.3.3 Patterns of abnormal grief

No one symptom defines abnormal grief, and most grief symptoms occur on a continuum. According to a recent survey (Middleton *et al*, 1996), grief experts still consider the syndromes of *chronic grief* (intense grief lasting longer than six months), *inhibited or absent grief* (the absence of expected grief symptoms) and *delayed grief* (the avoidance of painful symptoms early on after the loss) to be appropriate classifications of pathological grief. However, using cluster analysis of bereavement responses in a community sample, the same research group revealed a pattern of chronic grief in 9.2%, but no participant displayed a pattern consistent with delayed or absent grief (Middleton *et al*, 1996), suggesting the syndromes of "absent grief" and "delayed grief" are rare. The most significant recent advances in the understanding of abnormal grief have come a series of studies from the University of Pittsburgh. The research group have divided abnormal grief reactions into bereavement-related depression, anxiety, and a new entity, so-called "traumatic grief". Traumatic grief has two components, *separation distress* and *traumatic distress* (Prigerson *et al*,1995, 1996). Separation distress includes symptoms of persistent yearning and searching for the deceased, inability to accept the death, and feelings of emptiness. The traumatic distress component is characterised by intrusive memories of the loss and the deceased person, avoidance of reminders of the death, visual hallucinations of the dead person and shock and disbelief. Prigerson's group argue that the traumatic grief syndrome is distinct from anxiety and depression (Prigerson *et al*, 1995, 1996) and this is supported by preliminary evidence that traumatic grief may respond to different treatments (Reynolds *et al*, 1999). Traumatic grief overlaps with, but is not the same as, post-traumatic stress disorder (PTSD). The traumatic grief syndrome contains core

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symptoms of *separation distress* as well as the intrusive mental images and avoidance symptoms it shares with PTSD. Zisook and colleagues (1998) administered a questionnaire to newly bereaved widows and widowers and found that ten percent of those whose spouses died after a chronic illness, and 9% of those whose spouses died unexpectedly met the diagnostic criteria for PTSD. The rates were much higher after violent unnatural deaths.

1.3.4 Management of grief symptoms

Woof and Carter (1997) review the effectiveness of the interventions for the care of the bereaved. Most are not supported by much research evidence. Methodological problems, especially of selection bias and poorly validated outcome measures, were common. Treatments shown to be effective include individual psychotherapy carried out by a psychiatrist, group therapy led by either a therapist or trained volunteer, and counselling by trained lay people in hospice settings. The efficacy of primary care bereavement counselling needs more evaluation in controlled trials. Treatment studies are becoming more sophisticated and targeting defined groups with specific emotional disorders. The Pittsburgh research group have reported a study of the treatment of bereavement-related depression in later life (Reynolds *et al*, 1999) which compares the effectiveness of an antidepressant (nortriptyline) with a brief psychological intervention (interpersonal psychotherapy), against the two therapies combined, and a placebo. Remission rates were highest in the group receiving both therapies, with nortriptyline alone also being confirmed as an effective treatment. Interpersonal therapy alone was not found to be effective for the treatment of depression in this study. Neither treatment had an effect on "traumatic grief" symptoms, providing further evidence for the hypothesis that traumatic grief is a different entity from depression. Treatments for

the clinically important group who suffer traumatic grief symptoms are being developed.

1.3.5 Suicidality after bereavement

A US cohort study showed that the risk of suicide for widowers was three times as high as for married men, whereas the risk of suicide for widows was the same as that for married women (Li,1995). A study of life events in the three months before suicide showed that bereavement had preceded 12.6% of the suicides occurring in older people (Heikkinen & Lönnqvist, 1995). A USA study of bereaved spouses showed that suicidal ideation after bereavement is associated with depression, anxiety, hopelessness, and traumatic grief symptoms (Szanto et al, 1997). Early loss or separation and, possibly, a past history of substance abuse may increase suicide risk in older bereaved people (Duberstein et al, 1998).

1.3.6 Bereavement after suicide

One million people die through suicide worldwide annually, and 5000 of these deaths occur in England and Wales. Following each of these deaths, several relatives, friends, and professionals will suffer varying degrees of grief. In a review of the social reactions to those bereaved through suicide, Calhoun and Allen (1991) found that people tend to perceive suicide as a type of death particularly distressing for the bereaved. Early case studies of those bereaved through suicide suggested that adjustment after a suicide was particularly difficult, and associated with high levels of guilt and disordered communication in bereaved families (Cain & Fast, 1966a, 1966b).

1.3.7 Mode of death and grief

Unexpected and sudden death is associated with high levels of grief (Parkes & Weiss, 1983), but a review of post-suicide bereavement concluded that the data suggesting that there were differences between bereavement reactions after suicide compared with other modes of death were " far from conclusive" (Ness & Pfeffer,1990). Since the review was written, controlled studies of grief following different modes of death have been carried out. Barrett and Scott (1990) compared the bereavement experience of suicide survivors with those bereaved through accidental death, expected natural death, and unexpected natural death. Those bereaved through suicide had higher levels of grief than both natural death groups, but similar overall grief scores to the group bereaved through accidental death. In another study comparing grief in those bereaved through suicide and accidental death, Reed and Greenwald (1991), confirmed that both groups experienced similarly high levels of grief. The Leiden Bereavement study (Cleiren,1993; Cleiren *et al*, 1994) compared those bereaved through suicide, accident, and natural death. Although there were some differences between groups early on following bereavement, at 14 months mode of death was not an important dimension in adjustment. This led the researchers to conclude; "mode of death plays only a marginal role in adaptation to bereavement. The crisis atmosphere which some authors in the field continue to create around suicide bereavement may be more stigmatising to suicide survivors than anything else". This somewhat controversial statement stimulated much debate, and helped researchers to think more critically about post-suicide grief. There is evidence to support the notion that those bereaved through suicide have special needs and problems, and this will now be discussed.

1.3.8 Clustering of problems in post-suicide bereavement

Several predictors of poor bereavement outcome have been established. These include young age of the bereaved in spousal bereavement (Kitson, 2001), age of the deceased ("untimeliness of death") (Cleiren,1993), kinship lost (children who have lost parents doing particularly badly) (Cleiren *et al*, 1994), poor quality of relationship with the deceased (Reed & Greenwald, 1991), and a history of previous losses and interpersonal problems (Séguin et al, 1995). Because people bereaved through suicide have an increased likelihood of family or personal history of psychiatric disorder, disturbed family dynamics, and history of early losses (Cerel *et al*, 2000: Clark & Goldney, 2000), they are likely to possess many of the poor prognostic factors listed above. As the latter authors put it " the suicide is added to an already problem-laden background". So, the first point to support the idea that those bereaved through suicide are at elevated risk for high levels of grief is that they often possess a clustering of risk factors for a poor prognosis bereavement

1.3.9 Grief symptoms specific to post- suicide bereavement

Although mode of death may be relatively unimportant in determining *overall adaptation* to bereavement (Cleiren *et al,* 1994), there are important differences in psychological functioning between those bereaved through suicide and other modes of death. In common with those bereaved through other types of unexpected deaths, suicide survivors show intense feelings of guilt, the need to persistently search for an explanation for the death, and suffer intrusive rumination about the cause of death (Barrett & Scott, 1990). Case-control studies have also shown that some symptoms

may be even more specific to the suicide-bereaved, such as feelings of shame (Reed &

Greenwald, 1991; Séguin et al, 1995), stigma and a sense of rejection (Barrett & Scott,

1990). Qualitative research has also identified unique aspects of grief following suicide,

which may have been missed by studies on quantitative aspects of grief (Jordan, 2001).

These include a sense of horror at the deceased person's suffering before death, a

desire to know medical details about the cause of death, an existential "crisis of

values", and suicidal thoughts, including a sense of being "fated to die" (Clark &

Goldney, 2000; Wertheimer, 2001).

1.3.10 Psychiatric disorder in post-suicide bereavement

Depression is common following bereavement through suicide; and the symptoms

persist for longer in those bereaved through suicide compared to those bereaved

through other types of death (Farberow et al, 1987, 1992a). Post-traumatic stress

disorder (PTSD) or persistent and frightening images of the death, whether the scene

was actually witnessed or imagined, can be an especially unpleasant (Wrobleski, 1984).

In one study of friends of adolescent suicide victims, 5% developed PTSD during the

first seven months of bereavement (Brent *et al*, 1995). Those bereaved through suicide

have an increased risk of suicidal behaviour. This was first identified in surveys of

mortality following bereavement (MacMahon & Pugh, 1965; Kaprio *et al*, 1987). A

study of adolescent suicide (Shafii *et al*, 1985), a survey of psychiatric inpatients (Roy,

1983), and a case-control study of risk factors for suicide in younger people (Agerbo *et
al*, 2002) have shown that those with a family history of suicidal behaviour were more

likely to have attempted suicide.

1.3.11 Bereavement after suicide: practical problems

Drawn out and potentially distressing legal procedures are an inevitable consequence of suicides and accidental death. Dealing with press reporters and reading inaccurate or insensitively worded newspaper articles is a problem specific to those bereaved through suicide (Shepherd & Barraclough, 1978, Barraclough & Shepherd, 1977). In a British study 20% of bereaved spouses were upset by the presence of reporters at inquests (Barraclough & Shepherd, 1976). The researchers also found that delays in the funeral taking place, having to identify the body, the legalistic atmosphere of the inquest, and the public discussion of post-mortem findings at the inquest were all sources of distress for bereaved relatives. A recent qualitiative study involving thematic analysis of in-depth interviews with people bereaved through suicide confirmed these issues as sources of distress, and also noted that the lack of preparation for the experience of an inquest exacerbated these problems (Biddle, 2003). The author of the paper suggested that the inquest could adversely affect the resolution of grief in two ways, firstly by worsening certain common grief reactions such as anger, guilt, and shame, and, secondly by interfering with the task of arriving at a meaningful account of the death.

1.3.12 Bereavement after suicide: social aspects

The stigma surrounding suicide may lead the bereaved to fear that others will judge them negatively, so-called "self-stigmatisation" (Dunn & Morrish-Vidners, 1987). They may also conceal the cause of death from others (Range & Calhoun, 1990). Because those bereaved through suicide are viewed more negatively by themselves and others, this may lead them to experience less social support than people bereaved through a natural death or accident (Jordan, 2001). The effects of this lack of social support are

exacerbated by the fact that many suicides occur in the context of strained family networks (Cerel *et al*, 2000).

A USA study showed that older suicide survivors had a percieved lack of social support compared with those bereaved through other types of death (Farberow *et al*, 1992b). The period of time after death which seemed to be most difficult for bereaved spouses of both suicide and natural deaths was around six months, when emotional distress was high, social networks were least well-used, and loss was felt most intensely. This finding has obvious relevance for clinical services supporting the bereaved.

1.3.13 Bereavement after suicide in older people

Relatives or friends of older suicides may have different needs from those bereaved by the suicide of a younger person. A large proportion of older people dying through suicide in the United Kingdom were living alone (Cattell & Jolley, 1995). Children of older people may live far away from their parents, so the most intimate relationship of an older person dying through suicide might be with a friend or neighbour, not a relative. Such friends may be less likely to be identified as being in need of help, and hence may receive less emotional and practical support than relatives. The only study relating to the needs of survivors of older suicides focused on spouses of suicide victims (Farberow et al,1987 and 1992a and b).

Therefore, despite Cleiren's assertion that the role of mode of death in determining bereavement has been over-emphasised (Cleiren *et al*, 1994), there are arguments to support the idea that those bereaved through suicide have specific needs. To

summarise, in common with others bereaved unexpectedly, they experience intense grief with prominent guilt feelings. Second, they may experience grief symptoms related to the mode of death, such as feelings of shame and suicidal thoughts, and are more likely to suffer chronic depressive symptoms. Third, they have to undergo stressful legal procedures. Fourth, in part because suicides often occur in the context of strained family networks and in part because of society's attitudes, the bereaved can often feel stigmatised and isolated.

1.3.14 The management of bereavement after suicide

Research on bereavement interventions after suicide is limited (McIntosh, 1996). Much of the research has been carried out in the USA, and so has uncertain relevance for other countries. Several studies have documented the achievements of support groups for those bereaved through suicide, (Clark *et al*, 1993; Hatton & Valente, 1981; Wrobleski, 1984), however these studies lack a control group and suffer from selection bias; access to such groups is often by word of mouth and certain age and ethnic groups are poorly represented (Clark & Goldney, 2000). Recent reviews have summarised the general principles of counselling for those bereaved through suicide drawn from descriptive studies (Dunne, 1992; Clark & Goldney, 2000) but these are based on largely anecdotal clinical experience. An initial risk assessment interview covering psychiatric history, and level of social support may help to identify problems. An educative approach has been advocated; the explanation of the different contributory factors of suicide, and of the biological models of suicidal behaviour, may help to reduce guilt. Other important tasks may include dispelling myths of the "contagion" of suicide, helping the bereaved person to rationalise unrealistic feelings of guilt and rejection, and the use of cognitive-behavioural strategies such as activity

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scheduling, diaries, and thought stoppage. The need for good quality controlled studies on bereavement interventions after suicide has been emphasised by recent reviewers (Clark & Goldney, 2000; McIntosh, 1996).

1.3.15 Deficits in knowledge on bereavement after suicide

There is a need for contemporary data on the problems and symptoms of those bereaved through suicide, in order to inform the development of interventions to help this vulnerable group. Basic data such as the prevalence of depression, and specific grief symptoms compared with a control group have never been established in the UK. As noted above (Section 1.3.13), people bereaved through suicides of older people may have particular needs not identified in previous research which has largely focused on those bereaved by younger peoples' deaths. The needs of people bereaved through an older person's suicide have never been systematically studied in the UK.

1.4   AIMS OF THE STUDY

The aims of the study were as follows:

For a sample people aged sixty years and over dying through suicide:

1. To describe the demographic chararacteristics, circumstances of death and contact with primary care and psychiatric services.

2. To determine the prevalence of psychiatric disorder, personality disorder, and significant maladaptive personality traits.

3. To determine the nature and frequency of life problems in the year before death, including problems related to physical illness, functional limitation, bereavement, occupation and retirement, finances, interpersonal difficulties, accommodation, long term sequelae of war, and legal problems.

4. To compare the rates of these psychiatric, personality, and life problem variables with an age and sex matched control group of people who had died through natural causes, in order to determine the relative risk of suicide for those possessing particular risk factors.

For a sample of relatives and friends bereaved through the suicide of an older person:

1. To describe the nature and frequency of practical problems, including problems related to the legal procedures after death coroners' office, experienced by those bereaved through the suicide of an older person.

2. To determine the frequency of specific grief symptoms hypothesised to be particularly prominent in post-suicide bereavement compared to a group bereaved through death from natural causes.

2 METHOD

2.1. SUMMARY OF STUDY METHOD

There were two parts to the study. The first was an investigation of the characteristics

of and risk factors for suicide in older people. This was carried out by studying a

sample of people sixty years old and over who had died through suicide by studying

coroners' inquest records, medical notes and through psychological autopsy interviews

with informants (relatives or friends of the deceased). Similar information on an age-

and sex- matched sample of people dying of natural causes was collected for a case-

control study. The second part of the study was an exploration of problems and grief

symptoms experienced by people bereaved through the suicide of an older person.

Interviews were carried out with the participants for the first part part of the study,

who, for this part of the study, acted as study subjects. A case-control study compared

the grief symptoms of this group with a group of people bereaved after a natural death.

These control subjects were the same people who had acted as informants for the

control group from the first part of the study.

2.2 STUDY OF RISK FACTORS IN SUICIDE

2.2.1 Recruitment of suicide group

Cases were identified from the records of H.M Coroners for Oxfordshire, Berkshire,

Buckinghamshire, Northamptonshire, and Birmingham. Before the study started, a

letter was sent to all coroners in the study area requesting permission to view their

inquest notes. All coroners agreed that their records could be viewed. During the

period October 1995- September 1998 all coroners' offices were visited regularly

(approximately every four months). Details of all inquests attracting a verdict of suicide in people sixty and over who had died between 1st January 1995 and 1st May 1998 were recorded. Demographic details, names and addresses of relatives and friends, mode of death, post-mortem findings, and events before death, as documented in the statements of relatives, friends, doctors, police, and other witnesses were noted.

All cases where a suicide verdict had been recorded were automatically included as subjects in the study. Because some cases which receive a coroner's verdict of undetermined cause of death ("open verdicts"), or accidental death may be "concealed" suicides (see section 1.2.1), information was also collected from the inquest notes of cases receiving open or accidental death verdicts where circumstances suggested a possible suicide, for example death following overdose. Summaries of all such cases were written and circulated to the other three investigators. (All data were collected by the author (DH). The three grantholders for this study, Professors Jacoby, Hawton, and Hope, participated in the determination of suicide in "open verdicts as described). Each investigator made an independent judgement as to which of the following categories fell into (a) definite suicide; (b) probable suicide; (c) possible suicide; (d) accidental death; (e) natural death; and (f) uncertain. If three or more had assigned a case to category (a) or (b), the case was included in the study. If there was a greater level of disagreement the decision as to whether to include the case was arrived at by consensus after discussion. If it was felt that the death was a possible suicide but there was not enough information to be certain, further information from medical records, or if necessary from a full interview with an informant, was obtained. Such cases were then discussed again in the light of this information, and the case either included, or excluded if there was still uncertainty. Summaries of cases receiving non-

suicide verdicts, some of which were included and some of which were excluded from the study, are given in Appendix 2. There were no explicit pre-determined criteria for assigning cases to particular categories. However, factors such as the number of tablets ingested during an overdose (a large drug overdose less likely to be accidental than a small one), presence or not of expressed suicidal ideation, and the opinions of informants as to the cause of death, were all taken into consideration when making a decision.

The General Practitioner (GP) of each subject was contacted by letter to ask for permission to view the person's medical notes, and if consent was obtained, the notes were examined. Data were collected, using a standard form, on past medical and psychiatric history, medication being prescribed at the time of death, non-fatal acts of self-harm, communications of suicidal intent, and the timing and the content of the last consultation before death. If a psychiatric team had been involved in the person's care within the last year of the person's life, consent to view the psychiatric notes was obtained from the appropriate consultant psychiatrist. If consent was obtained, data on past psychiatric history, previous suicidal acts, communications of suicidal ideation, and contacts with the team in the year before death were collected, using a standard form. Where it appeared that other records, such as general hospital or social work notes, might yield useful information these were also viewed after obtaining the necessary consent.

The main source of data was an interview with one or more key informants. The choice of the key informant was determined by deciding from the coroner's inquest records who seemed to have the most intimate contact with the deceased subject in the

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year before death. Thus the key informant was not necessarily the next of kin, but could have been a neighbour or close friend. A letter to the GP of the deceased was sent, enclosing a sample letter and information sheet for potential informants, and asking whether he or she knew of any reason why the potential informant should not be contacted. If the GP had no objections, a letter and information sheet with reply slip and stamped addressed envelope were sent to the potential informant, explaining the purpose of the study and inviting participation in the study. If no reply had been received after three weeks, a reminder note would follow, followed by another reminder if no reply had been forthcoming after a further two weeks. Lastly, a telephone call to the informant was made after a further two weeks if still no reply had been received. Because of differences in Ethics Committee requirements, no such follow up phone call was made to potential informants of Birmingham subjects.

2.2.2.Recruitment of control group

The control group consisted of a sample of older people individually matched for age and sex with the subjects in the suicide group, who had died through natural causes (ie physical illness rather than accident or self-inflicted injury) in hospital. Control subjects were identified from four general hospitals in the study area: two in Oxford (The Radcliffe Infirmary and The Oxford Radcliffe Hospital (which comprises the John Radcliffe and Churchill Hospitals)), and two in Birmingham (Selly Oak and Queen Elizabeth Hospitals). A list of all deaths in the hospital within the preceding year was obtained from the Medical Records Department of each hospital. All patients on the list who were the same sex, and who died at an age within 30 months either way of the age at death of a subject in the suicide group were noted as potential controls. The patient on the list whose age at death was closest to the matched suicide subject was identified

as the first choice control subject. The medical and nursing notes of these patients were viewed, and details of each patient's GP, next of kin, medical and social history were recorded. A letter was then sent to the GP of the first choice control patient, and the subsequent recruitment procedure was identical to that for the suicide group. If an informant could not be identified for the first choice control subject, a second choice control subject, whose age at death was the next closest to the age at death of the suicide subject, was identified.

2.2.3 The Informant Interview

Because of the delay between death and coroner's inquest, and anticipated subsequent delays awaiting replies from GPs and informants, the aim was to carry out the interviews between six and twelve months after the subject's death. Interviews were performed at the informant's home unless he or she preferred an alternative venue. In a few cases, where the informant did not know the deceased person well, interviews were conducted over the telephone, and in one case, where the only available informant lived abroad, by written questionnaire. If the informant consented, the interview was tape-recorded. The interview took about three hours to complete. In cases when there was a large amount of information to discuss, or if the informant was finding the interview tiring or distressing, it was completed at another separate session. There was generally just one informant present at the interview but in some cases two or more informants were interviewed simultaneously. In cases where the first informant interviewed was not able to give detailed information, another potential informant was identified from the coroner's records and interviewed as well.

After introductions and explanations of the study and the interview format, consent for participation in the study and the use of a tape recorder during the interview was obtained and then the interview began. Each section of the interview started with an open question; for example, "Can you tell me about the events that led to your father's death?" and the informant was then allowed to speak uninterrupted for a few minutes, before proceeding to more specific questions, for example "Did your father ever talk about ending his life?". The interview was semi-structured, allowing flexibility for the informant to talk in depth. However, as far as possible the questions were asked in the same order and using the same wording at every interview. The interview covered the following areas:

1. The circumstances of the death, including expressed suicidal ideas.

2. Background history covering details of family history, childhood, occupation, war experiences, relationships, children, and social network.

3. The informant's opinion as to factors contributing to the death and the main contributory factor to death.

4. A systematic enquiry into the following potential problem areas:

(a) adverse childhood experience, (b) ongoing problems related to adverse experiences in World War II (c) relationship with family members, (d) relationship with spouse or partner, (e) relationship with friends (f) bereavement, (g) occupation, (h) finances, (i) legal problems, (j) social isolation or loneliness, (k) accommodation, (l) physical health and functional limitation. The informant was asked whether the subject had suffered any problems in each area in the year before death, and, if so, whether, in their view, any of these had contributed to the subject's death.

5. Data on psychiatric and personality variables (see below).

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Three structured interview schedules were used to obtain data on psychiatric and personality factors. The Psychiatric Illness Questionnaire (see Appendix 3) was used to collect information on psychiatric diagnosis. This questionnaire is an instrument designed to make psychiatric diagnoses according to ICD 10 Research Criteria for psychiatric disorder (WHO, 1993) and consists of screening questions for each disorder, followed by more detailed questions if these are positive. It was devised by researchers at the University of Oxford Centre for Suicide Research and has been used in several previous psychological autopsy studies (Hawton et al, 1998b, 2002; Houston et al, 2001). The short version of the Informant Questionnaire on Cognitive Decline In The Elderly (IQCODE) (Jorm et al, 1994), is a brief, sensitive screening questionnaire for the detection of dementia and was incorporated into the interview in order to provide a structured assessment of cognitive decline in the subject. The ICD-10 version of the Personality Assessment Schedule (PAS) (Tyrer et al, 1988) was used to collect data on personality factors. This consists of screening questions for each ICD-10 personality disorder type, followed by a more questions if these receive positive responses. The instrument allows researchers to make diagnoses of both personality disorder, and "personality trait accentuation", where a subject displays strong traits of a personality disorder type but which do not have the severity to meet the diagnostic criteria for personality disorder.

Once the interview had been completed, the informant was given an opportunity to ask questions and was offered a Bereavement Information Pack (Hill et al, 1997), which contains information on the features of the grief reaction after unexpected death, along with practical advice and details of books, counselling agencies, and other sources of

help for those experiencing problems during bereavement. Four weeks after the interview, the informant was telephoned to clarify any points not clear from the interview and to ascertain the impact of the interview on the informant.

2.2.4 Method of assigning psychiatric and personality disorder diagnoses

For both study and control subjects where an informant interview was carried out, the investigator made ICD-10 diagnoses of psychiatric disorder, personality disorder, and personality trait accentuation using information gathered from the Psychiatric Illness Questionnaire, IQCODE, PAS and casenotes. A "level of confidence" rating (high, medium, or low) was applied to each diagnosis according to how confident the investigator was that the diagnosis was correct. Thus if information was scanty because of limited contact between the informant and the subject in the month before death, a low level of confidence rating would have been applied. A case summary was prepared, containing information on psychiatric symptoms in the month before death from all available sources. This summary was circulated to the other three investigators who each made a judgement as to the correct diagnosis, and on the level of confidence about each diagnosis. Disagreements about a diagnosis or level of confidence rating were resolved by discussion and arriving at consensus decisions at regular meetings of all investigators held throughout the study period.

2.2.5 Method of coding problems contributing to death

The four investigators made a consensus decision as to what constituted a "problem" and how the possible contribution of a problem to the subject's decision to die should be coded, and drew up guidelines for this purpose. It was decided that a "problem" should be only be coded as such if it caused difficulties or distress in the year before

death, and that there was some evidence that the problem actually existed. Difficulties which were a reflection of disturbed mental state eg delusions of poverty, were therefore excluded (see Appendix 4 for the full guidelines). Because of potential bias arising from the coding of problems by one investigator, the study method initially planned was for each investigator to make an independent coding of each subject's problems and their influence on the suicide by listening to the taped interviews or by reading detailed case summaries, before discussing the final coding of each subject at a consensus meeting. However, in view of the large number of subjects and the detail of the case material involved this proved impractical, so a compromise solution was reached. For ten subjects, the main investigator prepared case summaries which documented the informant's views about the subject's life problems supplemented by information from coroner's and medical records. Using the guidelines described above, all four investigators then coded each subject's problems and the level of contribution to the subject's death. Inter-rater reliability ratings were calculated for the level of agreement between investigators. For coding of problems, Kappa coefficient values ranged from 0.79 to 0.89, (p<0.0005) for agreement between pairs of investigators, and for deciding whether a problem influenced the decision to die, Kappa coefficient values were in the range 0.68-0.83 (p<0.0005). As these values indicated good levels of agreement between investigators, it was decided that for the remainder of the sample the problems would be coded by the main investigator alone, who would adhere strictly to the agreed guidelines. The same procedure was adopted for the control group, although the degree of contribution of problems towards death was not coded.

2.3 STUDY OF BEREAVEMENT NEEDS AND GRIEF AFTER SUICIDE

2.3.1 Descriptive study

The informants for the study on risk factors associated with suicide were interviewed as subjects for the bereavement study. Recruitment of these subjects is described above (Section 2.2.1).

2.3.2 Case-control study

The case-control study was designed to compare the patterns of grief symptomatology in those bereaved through suicide with those in a sample of people bereaved through the natural death of an older person. The control group subjects were the same people who had acted as an informant for the control group for the study of risk factors for suicide (Section 2.2.2).

2.3.3 Study Interviews

Interviews were conducted immediately after the psychological autopsy interview for the suicide study, usually at the same sitting after a short break, but at another sitting if the interviewee preferred. The bereavement and grief experiences interview took about one hour to complete. The interview was semi-structured and collected the following information:

    (a) demographic details of the subject - age, marital status, living situation;

    (b) questions on problems encountered with police, hospital, coroner's office, and media reporters;

    (c) other aspects of bereavement including changes in physical health and changes in tobacco and alcohol consumption;

    (d) help received from professionals or voluntary agencies;

(e) recommendations for improving the care of the bereaved;

(f) grief symptomatology assessed by the self-completed Grief Experience Questionnaire (GEQ) (Barrett & Scott, 1989);

(g) the Montgomery and Åsberg Depression Rating Scale (MADRS) (Montgomery & Åsberg, 1979) a structured scale where the interviewer rates the severity of different specific symptoms.

The GEQ consists of eleven subscales, two of which cover general grief symptoms (*"somatic reactions"*, and *"general grief reactions"*). The remaining nine subscales each cover a different aspect of grief which the authors hypothesised might be particularly prominent in post-suicide bereavement. These subscales included, *"search for explanation"* (preoccupation with seeking an understanding of why the death occurred), *"loss of social support"*, *"stigmatisation"*, *"guilt"*, *"responsibility"* (feeling that the bereaved person might have actually caused the death), *"shame"* (embarassment and shame regarding the cause or circumstances of the death), *"rejection"* (a sense of having been deserted by the deceased), *"self-destructive behaviour"* (lack of concern for health, self-neglect, and suicidal thoughts), and *"unique reactions"* (a miscellaneous group of experiences hypothesised to be specific to bereavement through suicide such as feeling that the deceased was getting even with the informant by dying, a sense that they should have prevented the death, and a desire to hide the mode of death from others). Please see Appendix 5 for the full version of the GEQ. The interview questions for study and control subjects were identical, apart from unavoidable differences; for example questions about coroners would have been irrelevant to the control group.

2.4 DATABASE AND STATISTICAL ANALYSIS

2.4.1.Study on risk factors for suicide

After each interview, the data were coded and entered onto a database within a statistical software package, SPSS for Windows version 6.4. Descriptive statistics were used to describe the characteristics of the case series, data analysis being completed on SPSS.

Inter-rater reliability ratings were calculated for levels of agreement between pairs of different investigators on whether a non-suicide verdict case was a"probable suicide" and on the coding of the presence of life problems before death and whether or not the problem influenced the subject's decision to die. The Kappa statistic was used for this purpose and calculated using SPSS.

Comparisons between suicide and control groups were carried out using logistic regression. In this study the outcome variable was a binary one, ie whether or not the subject died through suicide. Therefore, logistic regression, as opposed to linear regression was used (Altman, 1991). As the case-control study used a matched control group, conditional (fixed effects) logistic regression analysis was employed in order that the matching of the suicide and control groups could be taken into account (Breslow & Day, 1980). For the analysis of the case-control study on psychiatric and personality disorders, univariate conditional logistic regression was used to provide an odds ratio, broadly equivalent to an estimation of the risk of suicide in those with a particular psychiatric or personality disorder relative to those without it (relative risk). Because conditional regression analyses could not be applied in all cases due to small numbers in one or other group, comparisons of proportions in the two groups were

also made using the Chi-squared or Fisher's exact tests. Due to the small sample size (54 subjects in each group), the case-control study did not have sufficient power to detect statistically significant differences in rates of variables between the two groups if these variables had a prevalence of less than 20% in both groups.

For the case-control analysis of life problem data, a multivariate conditional logistic regression analysis was carried out, in order to take into account the possible confounding effect of variables on one another.

Logistic regression analyses were carried out using the Egret package (Cytel Software Corporation, 1997). SPSS was used for the Chi- squared and Fishers exact tests.

2.4.2 Study on bereavement after suicide

Descriptive statistics were used to report the characteristics of the case series. Comparisons between study and control groups were made using the Chi-squared test for comparison of proportions, and the independent sample t-test for comparison of mean scores on the GEQ and MADRS. SPSS was used for data analysis.

3 RESULTS

3.1 RISK FACTORS FOR SUICIDE

3.1.1 Recruitment and sources of information

3.1.1.a Descriptive study

During the study period a suicide verdict was recorded by the coroner in 160 cases and

an open verdict in 48 cases in people over sixty years of age. Of these open verdict

cases, twenty-seven (56.3%) were judged by the investigators to be probable suicides

and these cases were included in the study sample. Eight cases where a verdict of

accidental death was made were included for the same reason. Data were not collected

on the total number of accidental death verdicts during the study period. Case vignettes

of some of the non-suicide verdict cases which were included and some of those which

were excluded from the study can be found in Appendix 2. Inter-rater reliability ratings

between pairs of investigators for deciding whether non-suicide verdicts cases were

"probable suicides" showed moderate levels of agreement with Kappa statistic values

ranging from 0.45-0.67 (p<0.0005).

The total study sample of suicides and probable suicides (n=195) included one hundred

and sixty cases with suicide verdicts (82.1%), twenty-seven cases with open verdicts

(13.8%) and eight cases with accidental death verdicts (4.1%). Table 1 shows the

number of suicides and rates of suicide for each county during the study period.

Table 1: Suicide numbers and rates per 1000 population over 60 years old (calculated from 1991 Census data) during the study period according to county or region.

County / Region	No. of suicides	Suicide rate (per 1000 over 60)
Berkshire	39	0.32
Birmingham	41	0.21
Buckinghamshire	29	0.27
Northamptonshire	46	0.42
Oxfordshire	40	0.38

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Coroners' records were examined for all cases. GP records were viewed in 159 cases (81.5%). Only two subjects were not registered with a GP at the time of death. In 19 instances the GP records could not be located, in 13 cases the GP refused consent for the records to be viewed, and in two cases relatives refused access to the notes. Psychiatric case-notes were viewed for all but three of the 51 subjects (94%) who had been in contact with the psychiatric sevices in the year before death.

Psychological autopsy interviews with an informant were carried out in one hundred cases (51.3% of the total sample). In two cases the coroner advised against the relatives being contacted, in twenty two cases the GP did not give consent for the researchers to contact potential informants, and in 71 cases the potential informant(s) declined to be interviewed or the investigator was unable to contact them. Figure 1 displays the drop-out at different stages of recruitment. For subjects where informant interviews were completed, in 78 cases a single informant was interviewed, in 20 cases two informants, and in two cases more than two informants. The mean time after the death at which the interview took place was 11 months (range 5-23 months). Ninety-seven (97%) of the interviews took place face to face, two interviews were carried out over the telephone and one (with an informant who lived abroad) was completed by postal questionnaire. Ninety interviews took place in the informant's home, five at the informant's place of work, and two at the interviewer's office.

Figure 1: Flow diagram of recruitment of suicide subjects

Subjects dying through suicide in study period
(n=195)

Coroner/GP refused access   Potential subject declined   Interview
to potential subject (n=24)   participation (n=71)   completed (n=100)

                                   Control not identified   Control interview
                                                                        completed
                                   (n=46)   (n=54)
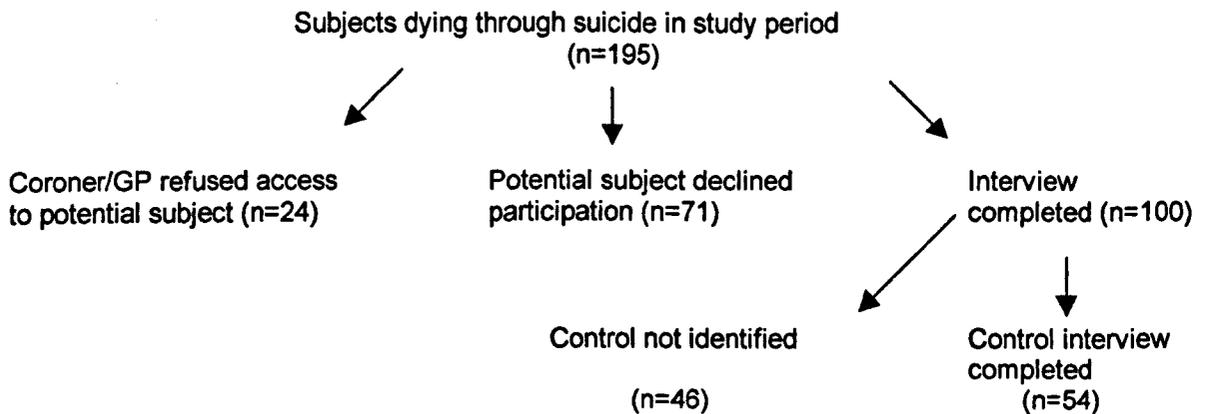
Table 2 displays the characteristics of the informants for the suicide interviews. Their

mean age was 54.9 years (range 23-85), 59% were female, and 75% were in contact at

least weekly with the subject in the year before death. Children of the deceased were

the principal informant in 33% of cases, friends in 25%, spouses in 17%, siblings in

9%, and other relatives or professionals in 16% of the sample. The proportions of

these characteristics were not statistically significantly different (on Chi-squared

analysis) from those in the group of informants for the suicide sample for whom a

matched control was identified.

Table 2 : Comparison of characteristics of informants used for psychological autopsy interviews in suicide and control groups

	A. All suicides with interviews (n=100)		B. Suicides (n=54)		C. Controls (n=54)		Statistical analysis B v C
	n	(%)	n	(%)	n	(%)	
Age (mean)	54.9		55.5		59.6		p=0.21*
Female gender	59	(59)	32	(59.3)	37	(68.6)	$\chi2$=1.0, p=0.32
Relationship of main informant to deceased							
Spouse	17	(17)	7	(13.0)	22	(40.7)	$\chi2$=10.6, p=0.001
Child	33	(33)	19	(35.2)	21	(38.9)	$\chi2$=0.2, p=0.69
Sibling	9	(9)	6	(11.1)	5	(9.3)	$\chi2$=0.1, p=0.75
Friend	25	(25)	15	(27.8)	5	(9.3)	$\chi2$=6.1, p=0.01
Other	16	(16)	7	(13.0)	1	(1.9)	p=0.03 #
Frequency of contact with deceased before death less frequently than weekly	25	(25)	12	(22.3)	3	(5.6)	$\chi2$=6.3, p=0.01

* Student's t-test , # Fisher's exact test

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In a recent British psychological autopsy of suicide in young people (Appleby *et al*, 1999), the rates of expressed suicidal intent by the subjects and levels of psychiatric contact before death differed in the groups of subjects with and without an interview. These variables might have led to selection bias in the interview group by influencing an informant's availability or willingness to be interviewed. It was hypothesised that age, sex, ethnic origin and marital status of the deceased person, a coroner's verdict other than suicide, and history of deliberate self harm, might also influence whether or not an interview was carried out in our study. The rates of all these variables in the groups with and without interviews were calculated, to ascertain whether any detectable selection bias contributed to the composition of our interview group. No statistically significant differences on Chi-squared analysis were found in the prevalence of these variables between the two groups.

The informants for ninety-two of the 100 suicide cases thought the death of the subject was a definite or probable suicide, seven thought the death was a possible suicide and four thought that the death was definitely due to an accident. One interview had to be terminated prematurely because of the informant's distress. Follow-up phone calls were completed for 73 of the 100 informants. Two informants (2.7%) reported that the interview had caused a lasting negative effect, thirteen (17.8%) reported temporary distress after the interview, six (7.1%) reported a mixed effect, thirty-one (42.5%) said that it had had no effect, positive or negative, and 21 (28.8%) said that the interview had been a positive experience. Seventy informants accepted a Bereavement Information Pack. Of the fifty seven of these who were able to be contacted by follow-up phone call, thirty-three (57.9%) gave positive feedback about the Pack, one person

did not find it useful and the remainder (40.7%) either did not read the Pack or gave neutral feedback about it.

3.1.1.b Case-control study

In the time available for the study, fifty-four of the 100 subjects with interview data were paired with an age and sex matched natural cause death control subject (see Figure 1). Causes of death according to the death certificate in the control group were as follows: respiratory disease in 17 (31.5%), neoplastic disease in 14 (25.9%), cardiovascular disease in 10 (18.5%), stroke in six (11.1%), and other causes of death in seven cases (13.0%).

The prevalence of several variables in the suicide subjects with interview data with and without a matched control subject were examined to look for possible selection bias. The mean ages of the two groups were similar (72 and 74 years for the interview and non-interview groups respectively) and there were no statistically significant differences in the proportions of the following variables in the two groups: gender, marital status, non-UK ethnic origin, coroner's verdict other than suicide, presence of previous self harm attempts, suicidal communication in year before death, past psychiatric contact, or contact with psychiatric services at the time of death.

Ten subjects in the suicide group (19%) had received a coroner's verdict other than that of suicide. Characteristics of this sub-group were compared with the sub-group of subjects who had received a suicide verdict. The mean ages of the two sub-groups were similar (73 years for the non-suicide verdict subjects and 74 years for the suicide

verdict sub-group). Fisher's exact test (FET) was used to compare the rates of other variables between the two groups as shown below:

Table 3: Case-control study-comparison between subjects with suicide and non-suicide verdicts

	Suicide verdict		Non-suicide verdict		p value (FET)
	N	(%)	N	(%)	
Male	29	(66)	6	(60)	0.73
Non UK born	8	(18)	4	(40)	0.20
Married	10	(23)	4	(40)	0.42
Living alone	27	(61)	3	(30)	0.09
Psychiatric disorder	35	(80)	8	(80)	1.00

Table 2 compares the characteristics of the informants for the suicide and control groups. The informants for the control group were of similar age and sex distribution compared with the informants for the matched suicide group. They were, however, more likely to be spouses and less likely to be friends. The frequency of contact of the informant with the deceased in the year before death was greater in the control group.

The study interview was terminated prematurely in one case due to the informant's distress. Forty-one control participants were able to be contacted for a follow-up

phone call. Of these, none reported that the interview had had a lasting negative effect, eleven (26.8%) reported temporary distress after the interview, two (4.9%) reported a mixed reaction, eighteen (43.9%) subjects said that it had had no impact, positive or negative, and ten (24.4%) reported that the interview had been helpful to them.

3.1.2 Demographic variables

The mean age of the sample was 72.2 years (range 60-91, SD=8.42, median=71 years). The age and gender distribution of the sample and other sociodemographic data are shown in Table 4. One hundred and thirty-two (67.7%) of the sample were male. The mean age for men and women in the sample was identical (72.2 years). The majority (79.5%) of the sample were Caucasian and British born.

Table 4: Sociodemographic characteristics of all 195 suicide subjects

	N	(%)
Sex		
Male	132	(67.7)
Female	63	(32.3)
Age		
60-64 years	39	(20.0)
65-69 years	50	(25.6)
70-74 years	36	(18.5)
75-79 years	27	(13.8)
80-84 years	21	(10.8)
85 years and over	22	(11.3)
Marital status		
Single	29	(14.9)
Married	68	(34.9)
Widowed	72	(36.9)
Divorced/separated	26	(13.3)
Ethnicity and country of birth		
Caucasian		
UK born	155	(79.5)
Non-UK born	32	(16.4)
Asian	2	(1.0)
Not known	6	(3.1)

Table 4: Sociodemographic characteristics of all 195 suicide subjects, continued

	N	(%)
Social Class		
I	25	(12.8)
II	49	(25.1)
III	82	(42.1)
IV	32	(16.4)
V	2	(1.0)
Armed Forces	1	(0.5)
Not known	4	(2.1)
Occupational status		
Retired or redundant	163	(83.6)
Working (inc. semi-retired)	31	(15.9)
Unemployed	1	(0.5)
Accommodation		
Privately owned	118	(60.5)
Council	24	(12.3)
Privately rented	13	(6.7)
Sheltered	6	(3.1)
Residential home	2	(1.0)
Nursing home	4	(2.1)
Not known	28	(14.4)
Living situation		
Spouse/cohabitee	65	(33.3)
Other relative/friend	28	(14.4)
Alone / sheltered housing	96	(49.2)
Nursing or residential home	6	(3.1)

Sixty-eight (34.9%) were married, 29 (14.9%) single, 26 (13.3%) divorced or separated, and 72 (36.9%) widowed. There were sex differences with regard to marital status; 54% of the females and 28.8% of the males were widowed, whereas more men (39.4%) than women (25.4%) were married at the time of death. One hundred and sixty-three (83.6%) of the sample were retired. The majority of the sample were living independently in privately owned (60.5%), privately rented (6.7%), or council (12.3%), accommodation, with only 3.1% living in nursing or residential care. About half (49.2%) of the group were living alone, and 47.7% with a relative or friend.

3.1.3 Circumstances of the death and suicidal communications

Eighty-four (43.1%) of the deaths were caused by self poisoning and 101 (51.8%) were due to other causes of self injury, with ten (5.1%) deaths resulting from a combination of the two methods. The methods of suicide according to gender are shown in Table 5. Hanging, shooting and carbon monoxide poisoning by car exhaust fumes were more frequent in men than women, whereas in women drug overdose was more prevalent. The most frequent drugs used in overdoses were paracetamol, combination analgesics, antidepressants, and aspirin.

In eight subjects (4.1%) there was evidence of definite hoarding of medication before the suicide. Extensive planning of the final act had taken place in forty-two subjects (21.5%), with evidence of some planning in a further 114 subjects (58.5%). In twenty-two subjects (11.3%) the suicide appeared to be an impulsive act. The degree of planning was uncertain in seventeen subjects (8.7%). A positive post-mortem blood or urine alcohol result, or a definite history of alcohol intake associated with the suicidal

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act, occurred in 43 (22.0%) of the group. A suicide note was left by 82 people (42.1%).

Communication of suicidal intent in the year before the act was known to have occurred in 95 subjects (48.7%), and in 35 (17.9%) the suicidal ideas expressed were unambiguous. Seventy-four (37.9%) of the sample had a history of previous suicide attempts. In twenty-three of this group the most recent suicidal act was more than five years before the final act.

Table 5: Methods of suicide

	Male (N = 132)		Female (N = 63)		Both sexes (N = 195)	
	N	%	N	%	N	%
Self injury						
Hanging	47	(35.6)	3	(4.8)	50	(25.6)
Asphyxia	7	(5.3)	12	(19.0)	19	(9.7)
Drowning	8	(6.1)	5	(7.9)	13	(6.7)
Cutting	8	(6.1)	2	(3.2)	10	(5.1)
Gunshot	8	(6.1)	0	(0.0)	8	(4.1)
Jumping from height	2	(1.5)	0	(0.0)	6	(3.1)
Burning	2	(1.5)	0	(0.0)	2	(1.5)
Other self injury	4	(3.0)	0	(0.0)	4	(2.0)
Self poisoning						
Gas						
Carbon monoxide	18	(13.6)	3	(4.8)	21	(0.8)
Domestic gas	1	(0.8)	0	(0.0)	1	(0.8)
Drug overdose-total*	34	(25.8)	37	(58.7)	71	(36.4)
Paracetamol	10	(7.6)	7	(11.1)	17	(8.7)
Combination analgesics	8	(6.1)	9	(14.3)	17	(8.7)
Antidepressants	4	(3.0)	12	(19.0)	16	(8.2)
Aspirin	10	(7.6)	1	(1.6)	11	(5.6)
Minor tranquillisers	4	(3.0)	7	(11.1)	11	(5.6)
Barbiturates	5	(3.8)	3	(4.8)	8	(4.1)
Opiates	1	(0.8)	3	(4.8)	4	(2.1)
Antipsychotics	1	(0.8)	2	(3.2)	3	(1.5)
Other prescribed drugs	4	(3.1)	7	(11.1)	11	(5.6)
Other substances	2	(1.5)	0	(0.0)	2	(1.0)
Unknown drug	1	(0.8)	0	(0.0)	1	(0.5)

* Multiple drugs were used in 11 cases

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3.1.4 Contact with primary care and psychiatric services

Ninety-seven (49.7%) of the sample had been in contact with their GP in the month

before death, and fifty (25.6%) in the week before death. Fourteen subjects (7.2%) had

consulted their GP within the twenty-four hours before death. Of the last consultations

before death, 53.3% were primarily for physical complaints, 25.1% were for psychiatric

symptoms, and 9.7% for a mixture of both, with inadequate or missing data in twenty

cases. Ninety-nine (50.8%) of the sample were being prescribed one or more

psychotropic drugs at the time of death: 43.8% of the prescriptions were for

antidepressants, with 65 (33.3%) of the sample on an antidepressant at the time of

death. Of the fifty-nine subjects with a unipolar depressive episode at the time of death

confirmed by psychological autopsy interview (see below), thirty-three (52.4%) were

being prescribed an antidepressant at the time of death. Five of this group were being

prescribed a tricyclic antidpressant at a daily dose of less than 100mg. Eighteen

depressed subjects (28.5%) were taking a hypnotic or minor tranquilliser at the time of

death, and six of these were being prescribed this without an antidpressant. Fifty-one

(26.1%) of the group had been in contact with psychiatric services in the year before

death. Thirty (15.4%) subjects were under active outpatient or community team follow

up, five (2.5%) were attending a Day Hospital, and six (3.0%) were inpatients in a

psychiatric hospital at the time of death.

3.1.5. Psychiatric disorder and personality variables

3.1.5.a Descriptive study

One hundred and forty-nine (76.4%) of the total suicide sample (cases with and

without interviews) and 77% of the interview sample were assigned a psychiatric

diagnosis. Further results will refer to the group with interview data. The prevalence of psychiatric disorders and personality variables in the suicide subjects with interviews is shown in Table 6. In sixty-two cases, the diagnosis was made with a high level of confidence, in twenty-seven cases with a moderate level of confidence and in eleven cases a low level of confidence (due to lack of accurate information). In six cases, the diagnostic category was changed from the diagnosis made by the interviewer after discussion between all four investigators. More than one psychiatric disorder was present in fifteen subjects (15.0%). Of the 59 subjects with unipolar depression, twenty-two (37.3%) were suffering from their first depressive episode at the time of death. The mean duration of the depressive episode before death was 13.7 months (range 1-96 months, SD 18.65) and twenty subjects (33.9%) had been suffering from depression continuously for twelve months or more before death.

Personality disorders were found in sixteen (16.0%) subjects and personality "trait accentuation" without personality disorder in an additional twenty-eight (28%), with anankastic, anxious, and dependent traits the most frequent.

The prevalence of psychiatric disorder was slightly higher in those over 74 years of age (82.1%) compared with those aged between 60-74 years (73.8%). The rates of personality disorder were slightly lower in those over 74 years of age (10.3%) than in younger subjects (19.7%). There were no gender differences in rates of personality disorder; 15.2% of women and 16.4% of men were diagnosed as having a personality disorder, although a slightly higher proportion of women than men were diagnosed as having a psychiatric disorder (81.8% compared with 73.8%). Fifteen (93.8%) out of sixteen of those with a personality disorder had a co-morbid psychiatric disorder.

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Table 6: Psychiatric disorder and personality factors in the 100 suicide subjects with an informant interview

ICD 10 CODE & DIAGNOSIS	n
PSYCHIATRIC DISORDER	
ONE OR MORE PSYCHIATRIC DISORDER*	77
F00-F09 Dementia	4
Other organic disorders	7
F10-F19 Alcohol misuse	5
Other substance misuse	5
F20-29 Schizophrenia and related disorders	4
F30-39 Bipolar affective disorder-depressed	4
Depressive episodes #	59
F40-69 Adjustment, somatoform, and sexual disorders	5
PERSONALITY DISORDER	
F60-69 ONE OR MORE PERSONALITY DISORDER*	16
Anankastic	4
Dissocial	4
Histrionic	4
Other	3
Mixed personality disorders	5
PERSONALITY TRAIT ACCENTUATION*	
Anankastic	19
Anxious	13
Dependent	9
Histrionic	6
Other	10
PERSONALITY DISORDER OR TRAIT ACCENTUATION	44

* More than one psychiatric disorder was diagnosed in fifteen subjects, more than one specific personality disorder in three subjects, and accentuation of more than personality trait in four subjects.

Depression was mild in 12 cases, moderate in 14 cases, and severe in 22 cases, with 11 cases of unspecified severity.

3.1.5.b Case-control study

The prevalence of psychiatric disorder and personality variables in the suicide and control groups is shown in Table 7. The following diagnoses emerged as predictors of being a member of the suicide group in the case-control analysis; depression (odds ratio 4.0), personality disorder (odds ratio 4.0) and personality trait accentuation (odds ratio 4.7). Trait accentuation of the anankastic and anxious types was more frequent in the suicide group than the control group. Rates of delirium and dementia were statistically significantly higher in the control group. Psychiatric disorder (any type) did not emerge as a predictor of suicide. However, *excluding subjects with delirium* from the analysis, the presence of any other psychiatric disorder did emerge as a risk factor (odds ratio 4.0 (95 % C.I. 1.5-10.7), p= 0.006). No differences in the prevalence of delusional disorder or alcohol or substance abuse were found but the rates of these disorders in both groups were very low. The mean duration of the last depressive episode before death in the suicide group was 13.3 months and 8.1 months for the control group (independent samples t-test, p=0.08). Fourteen of the thirty-three depressed subjects in the suicide group (42.4%) and nine of the sixteen (56.3%) depressed control subjects were suffering from their first depressive episode at the time of death (χ^2=0.83, p=0.36).

Table 7: Case-control study. Psychiatric disorder and personality variables in suicide and control groups (n=54 in each group).

ICD 10 CODE AND DIAGNOSIS	SUICIDE GROUP n	(%)	CONTROL GROUP n	(%)	STATISTICAL ANALYSIS χ^2 / Fisher's exact test	Odds ratio and 95% confidence limits (clr)
1. Higher frequency in suicide group						
F30-39 Depressive episodes	35	(64.8)	17	(31.5)	χ^2=12.0, p=0.0005	4.0 (1.6-9.9)
F60-69 Personality disorder	8	(14.8)	2	(3.7)	χ^2=4.0, p=0.046	4.0 (0.8-18.8)
Personality trait accentuation*	18	(33.3)	7	(13.0)	χ^2=6.3, p=0.012	4.7 (1.2-15.1)
Anankastic traits	12	(22.2)	3	(5.6)	χ^2=6.3, p=0.012	-#
Anxious traits	8	(14.8)	1	(1.9)	p=0.015	-
2. Higher frequency in control group						
F00 Dementia	3	(5.6)	12	(22.2)	χ^2=6.3, p=0.012	0.2 (0.04-0.8)
F05 Delirium	1	(1.9)	19	(35.2)	χ^2=19.8, p=0.0001	-
3. No statistically significant differences in frequency between two groups						
F07-09 Other organic disorders	5	(9.3)	4	(7.4)	χ^2=0.1, p>0.05	1.3 (0.4-4.7)
F10-19 Alcohol and substance misuse	2	(3.8)	0	(0.0)	p=0.25	-
F20-29 Schizophrenia and related disorders	3	(5.6)	0	(0.0)	p=0.12	-
Other psychiatric disorders	3	(5.6)	1	(1.9)	p=0.31	-

* without personality disorder
# blank values indicate logistic regression was unable to be performed due to low frequency of variables

3.1.6 Subjects with no psychiatric disorder

Twenty three of the sample with informant interviews were not assigned a psychiatric diagnosis. The mean age of this sample was 73.3 years (range 62-88 years), similar to the mean age of the total sample with interviews (73.0 years), and eighteen (78.2%) were male. In three (13.0%) of the subjects the diagnosis of "no psychiatric disorder" was made with a low level of confidence due to lack of information. Four (17.4%) of the subjects had significant psychiatric symptoms not meeting the criteria for ICD 10 psychiatric disorder. One subject was diagnosed as having a personality disorder and ten (43.5%) had personality trait accentuation (the most frequent traits being anankastic (obsessional) (n=8) and paranoid (n=3)). Physical illness was the most frequent life problem associated with suicide in this group, being the main contributory factor to the suicide in nine subjects (39.1%). Six subjects (26.1%) were suffering from severe, life-threatening physical illness at the time of death (three from neoplastic disease, two from pulmonary disease, and one from motor neurone disease). Twenty-two subjects (95.7%) were independent in their activities of daily living. Five subjects (21.7%) had experienced a major life event in the month before death, and in three of these the event was a spousal bereavement.

3.1.7 Physical illness and life problems

The numbers of suicide subjects with informant interviews who experienced specific life problems in the year before death are shown in Table 8. The interviewer's and key informant's opinions as to the main contributory factor to each subject's death are shown in Table 9. The main difference was that the interviewer regarded psychiatric disorder as the main contributory factor in nearly twice the number of cases as did informants.

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More than one life problem was found in all subjects. The average number of life problems in both suicide and control groups was 3.9 for the suicide group and 3.7 for the controls. Case vignettes of subjects suffering from different types of life problem before death can be found in Appendix 6. Five of the suicide subjects were found to have a malignancy at post-mortem which was not known to be present during life.

The prevalence of life problems in the fifty-four individuals who died by suicide and the age- and sex-matched control group is shown in Table 10. Problems with occupation, retirement, or accommodation, financial problems, and problems arising from bereavement greater than one year prior to death were more frequent in the suicide group, whilst problems related to increased physical dependence were more frequent in the control group. However, using a multivariate conditional logistic regression model to determine whether these problems were predictors of suicide, only the category of unresolved problems related to a bereavement more than one year ago emerged as a predictor of suicide. The presence of physical dependence was more likely to predict membership of the control group.

Table 8: Number of people experiencing different life problems in the year before death in the group of 100 suicide subjects with an informant interview

LIFE PROBLEM	Problem present	Contributory to death*
Physical illness symptoms	82	62
Increased physical dependence	31	23
Bereavement-total	47	25
Bereavement in year before death	28	13
Problems from bereavement >1yr before death only	19	12
Interpersonal problems-total	55	31
Spouse or partner	18	15
Family	39	17
Friends	2	1
Neighbours	10	3
Social Isolation	14	13
Accommodation	19	14
Impending move into residential care	10	10
Finances	15	10
Occupation or retirement	13	6
Problems related to retirement	7	2
Legal	11	1
Other-total	13	7
War	3	2
Childhood	4	0
Hot weather	2	2

*In opinion of investigator

Table 9: Main factor contributing towards suicide in 100 suicide subjects- views of informant and investigator

LIFE PROBLEM	Main contributory factor		
	INFORMANT VIEW	INVESTIGATOR VIEW	No. of cases in which informant and investigator agreed
Psychiatric illness	22	40	21
Physical illness	39	28	27
Bereavement	12	9	7
Interpersonal conflict	9	9	7
Financial	4	3	3
Accommodation	4	3	2
Other	6	7	1
Don't know	4	1	0

Level of agreement on type of main contributory factor between investigator and informant, Kappa coefficient=0.63, SE=0.059, p<0.0005

Table 10: Number of people with life problems experienced in year before death in suicide and control subjects (n=54 in both groups)

LIFE PROBLEM	SUICIDE GROUP		CONTROL GROUP		STATISTICAL ANALYSIS	
	n	(%)	n	(%)	χ^2/Fisher's Exact Test	Odds ratio/ 95% confidence limits for condtional regression*
1. Higher frequency in suicide group						
Problems from bereavement >1yr before death	14	(25.9)	4	(7.4)	χ^2=6.67, p=0.01	OR 7.0 (1.3- 37.8)
Occupation and retirement	8	(14.8)	1	(1.9)	p=0.03	NS
Financial	8	(14.8)	0	(1.9)	p=0.006	NS
Accommodation	12	(22.2)	4	(7.4)	χ^2=4.70, p=0.03	NS
2. Higher frequency in control group						
Symptoms of physical illness	44	(81.5)	54	(100.0)	χ^2=11.02, p=0.001	NS
Increased physical dependence	22	(40.7)	39	(72.2)	χ^2=10.89, p=0.001	OR 0.05 (0.01-0.3)
3. No statistically significant differences in frequency between two groups						
Bereavement (all)	32	(59.2)	29	(53.7)	χ^2=0.34, p=0.56	NS
Bereavement in year before death	18	(33.3)	25	(46.3)	χ^2=1.89, p=0.16	NS
Interpersonal problems	25	(46.3)	24	(44.4)	χ^2=0.04, p=0.84	NS
Social isolation	6	(11.1)	7	(13.0)	χ^2=0.09, p=0.76	NS
Legal	5	(9.3)	3	(5.6)	p=0.72	NS

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Table 9: continued

* Backwards stepwise multivariate conditional logistic regression

Rates of different physical illness diagnoses, functional limitation and specific symptoms at the time of death in suicide and control groups are shown in Table 11. The control group had a statistically significant higher proportion of subjects with a moderate or severe overall illness rating, physical dependence, moderate or severe pain before death, and neoplastic disease. Proportions of people with visual impairment, cerebrovascular disease, and neurological illness in the two groups were similar.

Table 11: Physical symptoms, functional limitation and illnesses in suicide and control groups

	A. All suicides with interviews (n=100)		B. Suicides with controls (n=54)		C. Controls (n=54)		Statistical Analysis χ^2 / Fisher's exact test B v C
	n	(%)	n	(%)	n	(%)	
Overall illness rating							
None	35	(35.0)	19	(35.2)	5	(9.3)	χ^2=10.5, p=0.001
Mild	38	(38.0)	16	(29.6)	15	(27.8)	χ^2=0.05, p=0.83
Moderate/severe	27	(27.0)	19	(35.2)	34	(63.0)	χ^2=8.34, p=0.04
Dependent on help for ADLs	36	(36.0)	27	(50.0)	40	(74.1)	χ^2=6.65, p=0.01
Pain							
None	29	(29.0)	16	(29.6)	11	(20.4)	χ^2=1.24, p=0.27
Mild	27	(27.0)	18	(33.3)	6	(11.1)	χ^2=7.71, p=0.005
Moderate/severe	43	(43.0)	19	(35.0)	37	(68.5)	χ^2=12.02, p=0.001
Not known	1	(1.0)	1	(1.9)	0	(0.0)	p=1.00
Visual impairment	43	(43.0)	29	(53.7)	26	(48.1)	χ^2=0.33, p=0.56
Specific diagnoses							
Neoplastic	11	(11.0)	4	(7.4)	16	(29.6)	χ^2=8.84, p=0.003
Cerebrovascular	16	(16.0)	10	(18.5)	15	(27.8)	χ^2=1.30, p=0.25
Neurological	9	(9.0)	5	(9.3)	8	(14.8)	χ^2=0.79, p=0.38

3.2 BEREAVEMENT AFTER SUICIDE

3.2.1 Characteristics of the study participants bereaved through suicide

In fifteen of the one hundred interviews carried out with informants of someone who had died through suicide, the potential subject was either a very distant relative, an acquaintance who was not emotionally close to the deceased or a professional such as a community psychiatric nurse. In these cases it was not felt appropriate to conduct a bereavement interview. Bereavement interviews were therefore completed for 85 subjects. The drop-out rates at different stages of recruitment are shown in Figure 2. Interviews were completed at a mean of 10.8 months (range 6-21 months) after the deaths.

The mean age of this sample was 54.8 years (range 23-85, median=53, SD =14.13), and fifty-one (60.0%) of the sample were female. Thirty-eight (44.7%) subjects were children of the deceased, seventeen (20.0%) were friends, sixteen (18.8%) were spouses, nine (10.6%) siblings, and five (5.8%) other relatives. Fifty-one (60.0%) were married, and forty-eight (56.4%) were in full-time employment. Most (77.6%) were in at least weekly contact with the deceased in the year before death.

Figure 2: Flow diagram of recruitment of subjects for bereavement study

Subjects dying through suicide in study period
(n=195)

Coroner/GP refused access
to potential subject (n=24)

Potential subject declined
participation (n=71)

Interview
completed (n=100)

Subject distant relative or
professional so bereavement
interview inappropriate
(n=15)

Bereavement
interview completed
(n=85)

Control not identified
(n=39)

Control identified
(n=46)
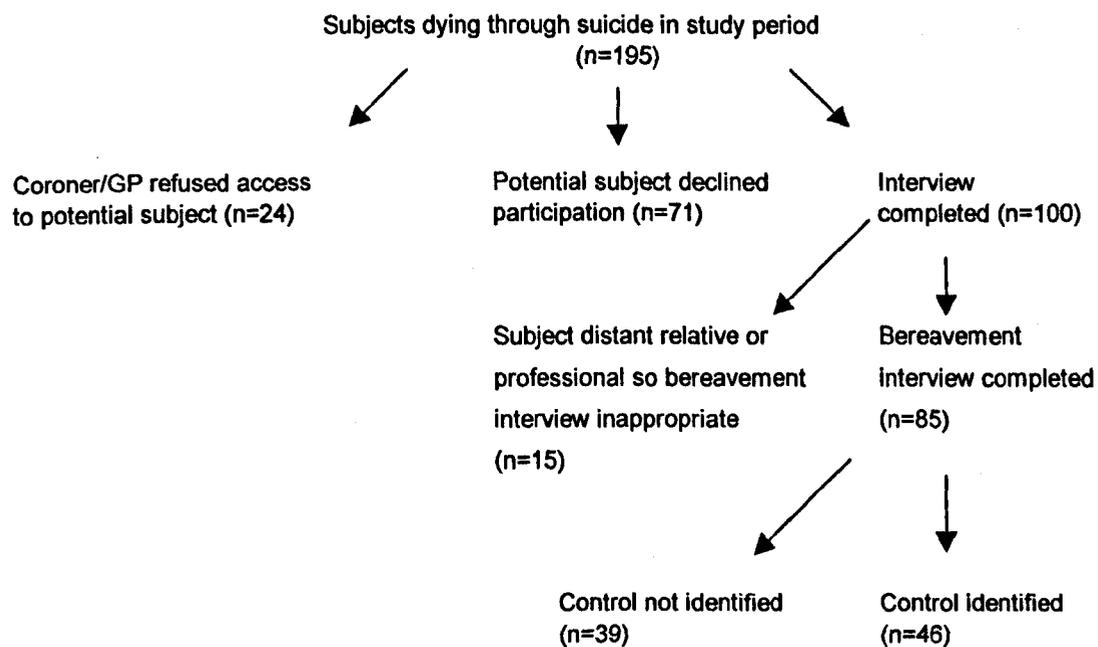
3.2.2 Problems encountered during procedures after the suicide.

Thirteen (15.3%) of the sample reported problems with the police. Of the forty-eight

participants who read a newspaper report of the inquest of their deceased friend or

relative, twenty-seven (56.3%, or 31.8% of the total sample) described distress caused

by the report. Thirty-six (42.4%) reported problems in their dealings with the coroner's

office, and nine (19.6%) mentioned the delay between death and inquest as a problem.

For the deaths where a delay was not mentioned the mean time between death and

inquest was 2.7 months, and for the group where a delay was reported, the mean time

was 3.4 months (difference not statistically significant on independent sample t-test). A

breakdown of all reported problems is shown in Table 12.

Table 12: Problems with legal and administrative procedures after death reported by study participants bereaved through suicide (n=85)

Problem	n (%)
Initial police contact and taking statement	
Any problem	**13 (15.3)**
Delay in arrival or in contacting relative after death	4 (4.7)
Insensitive or inappropriate manner	5 (5.9)
Other	4 (4.7)
Dealings with coroner's office, including inquest	
Any problem	**36 (42.4)**
Distressing delay between death and inquest	9 (10.6)
Administrative problems in arranging inquest	4 (4.7)
Administrative problems relating to death certificate	3 (3.5)
Inadequate explanation of inquest procedure	6 (7.1)
Details revealed at inquest distressing	5 (5.9)
Perceived factual errors made by coroner or witnesses	4 (4.7)
Manner of coroner rude or insensitive	3 (3.5)
Investigation not felt to be thorough enough	4 (4.7)
Other	10 (11.8)
Problems with media reporting of inquest	
Any problem	**33 (38.8)**
Insensitive approach by reporter to relative	5 (5.9)
Report factually inaccurate or insensitively worded	27 (31.8)
Other	4 (4.7)

Only problems reported by more than two participants have been listed separately in this table

3.2.3. Depressive symptoms and alcohol use

The mean MADRS score of the group bereaved through suicide was 8.9 (range 0-37). Nine subjects (10.7 %) had MADRS scores in the "depressed" range of 21 or above (Mottram *et al*, 2000). Alcohol intake had increased since the bereavement in twelve subjects (14.1%). The alcohol intake of six subjects had increased since the bereavement to within the range denoted as "hazardous" according to the Royal College of Physicians (1987) (above 35 or 49 units for women and men respectively). There were no differences in mean alcohol intake or MADRS scores comparing participants over 65 years old with those under 65 years of age.

3.2.4. Help received.

Eleven (12.9%) of the group had received specific bereavement counselling (seven from CRUSE and four from other counselling agencies). Seventeen (20.0%) had received specific support or counselling from their vicar or minister. Four had had new contact with a community psychiatric nurse and five with a psychiatrist. In addition, four participants had maintained contact with a member of the psychiatric team who had been involved in the care of their deceased relative after the death.

3.2.5 Case-control study of grief symptoms

Forty-six of the 85 subjects were paired with a control bereaved through a death from natural causes. The prevalence of several variables in the sample bereaved through suicide with and without a control subject were examined to look for potential selection bias. The mean ages of the two groups were similar and there were no

significant differences with regard to gender, marital status or ethnic origin. The comparison of the characteristics of the sample bereaved through suicide and the controls is shown in Table 13. The time elapsed between the bereavement and the study interview was similar in both groups. Although of similar age and gender distribution, control subjects were more likely to be spouses. Participants in the suicide group were more likely to have been in contact less than weekly with the deceased.

The grief symptoms of the two groups are compared in Table 14. The mean total GEQ score for the control group was slightly lower than for the group bereaved through suicide, but the difference was not statistically significant. Mean scores on the "search for explanation" and "guilt" subscales were similar in both groups, but the scores on the "unique reactions", "stigmatisation", "shame", and "rejection" subscales were significantly higher in the group bereaved through suicide. The levels of depressive symptomatology as measured by the MADRS were similar in the two groups, five (10.9%) in the suicide group and four (8.7%) in the control group having scores of 21 or above (the cut-off point suggested by Mottram and colleagues (2000) to distinguish AGECAT cases of depression from non-cases).

Because the numbers of different kinship types were different in the two groups (Table 13) comparisons were also made between subgroups of the same kinship type in suicide and control groups. Due to small numbers of most kinship types in one or both groups, a meaningful comparison could only be made for children of the deceased. Scores on the "unique reactions" and "sense of rejection" subscales were higher in the

suicide group although the stigma and shame scores were not significantly different

(Table 14).

Table 13: Comparison of characteristics of subjects bereaved through suicide and control subjects for case-control study

	A. All suicide-bereaved (n=85)		B. Suicide-bereaved with controls (n=46)		C. Controls (n=46)		Case-control analysis B v C
	n	(%)	n	(%)	n	(%)	
Age (mean)	54.8		56.1		60.2		p=0.17[a]
Female gender	51	(60.0)	27	(58.7)	30	(65.2)	$\chi 2$=0.4, p=0.52
Married	51	(60.0)	30	(65.2)	22	(47.8)	$\chi 2$=2.8, p=0.09
Relationship of main informant to deceased							
Spouse	16	(18.8)	6	(13.0)	20	(44.4)	$\chi 2$=10.6, p=0.01
Child	38	(44.7)	21	(45.7)	18	(39.1)	$\chi 2$=0.4, p=0.53
Sibling	9	(10.6)	5	(10.9)	3	(6.7)	$\chi 2$=0.1, p=0.75
Friend	17	(20.0)	10	(21.7)	4	(8.9)	$\chi 2$=3.0, p=0.08
Other	5	(5.8)	4	(8.7)	1	(2.2)	p=0.03[b]
Frequency of contact with deceased before death less than weekly	34	(22.4)	9	(19.6)	1	(2.2)	$\chi 2$=7.2, p=0.01
Time between bereavement and interview (mean, in months)	10.8		11.3		12.0		p=0.29[a]

[a] Student's t-test [b] Fisher's exact test

Table 14: Comparison of symptoms of grief in subjects bereaved through suicide and control group measured usng Grief Experience Questionnaire (GEQ) (a)(whole groups and (b) subgroup of children of deceased only

	WHOLE GROUP COMPARISON			CHILDREN OF DECEASED ONLY		
	Mean GEQ scores		Statistical Significance (t test)	Mean GEQ scores		Statistical significance (t test)
	Subjects (n=45)[a]	Controls (n=46)		Suicide (n=20)	Controls (n=18)	
Total GEQ score	101	90	NS	107	94	NS
GEQ subscale scores[b]						
Somatic reactions	9.2	9.5	NS	10.7	9.9	NS
General grief reactions	9.1	9.2	NS	9.7	9.2	NS
Search for explanation	13.7	13.5	NS	13.8	11.9	NS
Loss of social support	7.7	8.2	NS	8.5	8.5	NS
Stigmatisation	7.5	6.3	p=0.04	7.8	6.9	NS
Guilt	11.1	10.4	NS	12.0	11.1	NS
Responsibility	7.5	6.8	NS	7.7	7.3	NS
Shame	8.5	6.8	p=0.005	8.6	7.5	NS
Rejection	9.5	6.1	p=0.001	9.7	6.3	p=0.006
Self-destruction	6.7	6.5	NS	7.5	7.2	NS
Unique reactions	10.0	6.8	p=0.0001	9.8	7.0	p=0.01

[a] One participant was unable to complete the questionnaire because of emotional distress.
[b] Subscale scores have a theoretical range of 5 -25, higher scores indicating greater frequency of symptoms experienced since the bereavement.

4 DISCUSSION AND CONCLUSIONS

The methodology and findings from the two parts of the study (the study of risk factors for suicide and the study of grief after suicide) will now be discussed separately.

4.1 RISK FACTORS FOR SUICIDE STUDY

4.1.1.Discussion of method

4.1.1.a Strengths of the study

This study describes the largest reported series of older people dying through suicide. It has built on the work of Cattell (1988) and Cattell and Jolley (1995) by collecting cases from a wider geographic area broadly representative of the UK as a whole, covered by seven different coroners, including both rural and urban areas, and with a wide socio-economic population mix. Multiple sources of information were used; GP and psychiatric case-notes in addition to coroners' records, and interviews were performed with key informants. In addition, unlike Cattell's studies, the present study included informant interviews, and is the first study of suicide in older people in the UK to do so since Barraclough's (1971) description of a sub-group of older suicides from his landmark psychological autopsy study of suicide (Barraclough et al, 1974). Areas of inquiry were included that have been largely neglected by previous researchers, including a detailed enquiry into life events and problems prior to death, and personality variables (both personality disorder and significant personality traits).

Two recent British coroners' record based studies (Cattell,1988; Cattell & Jolley,1995) included only cases where a verdict of suicide was returned. However, some deaths

where an "open" verdict (and, less frequently, in cases where a verdict of accidental death is recorded) are likely to be suicides, but are not recorded as such because the coroner did not have enough evidence to make a verdict of suicide according to the legal criteria (see section 1.2.1) (O'Donnell & Farmer, 1995; Neeleman & Wessely, 1997). A study from Newcastle found marked similarities between cases assigned suicide verdicts and open verdicts by the coroner, and concluded that open verdicts should be included in suicide research after excluding cases in which suicide is unlikely (Linsley *et al*, 2001). A recent British multi-author review on the methodology of psychological autopsy studies (Hawton *et al*, 1998) also recommended the inclusion of "probable suicides" not receiving a suicide verdict in psychological autopsy studies. So, in order to collect a comprehensive sample of suicides, deaths receiving open and accidental death verdicts were included if these seemed to be probable suicides. Over half the open verdicts made during the study period were felt to be probable suicides. Levels of agreement between investigators in deciding whether non-suicide cases should be included in the study were good, although their decisions were based on a synopsis of each case made from facts gleaned from the coroners' records by the main investigator. In order to reduce bias further, each investigator could have examined the coroners' records himself in order to come to a decision, but this was felt to be impractical given the time available. The inclusion of subjects with non-suicide verdicts in the data analysis was supported by the comparison of the group assigned a suicide verdict with the group given a non-suicide verdict in the case-control study, which showed no statistically significant differences in terms of age, gender, ethnic origin, marital status, whether living alone, and presence of psychiatric disorder (Table 3).

Caution has to be exercised when interviewing relatives or friends who believed their loved one did not die through suicide (Hawton *et al*, 1998), especially if the coroner did not return a suicide verdict. Four of the informants interviewed felt the death of the subject was definitely due to an accident. In these cases the beliefs of the informant were not challenged, and questions about factors contributing to death and suicidal intent either omitted or asked very sensitively.

GP notes were examined for all cases where that was possible. This is important because even if the coroners' inquest records contained a witness statement written by the GP, this was often brief and sometimes neglected to mention important past history such as previous suicidal ideation or past psychiatric history.

The interview was similarly well tolerated by most informants for the suicide and control subjects, only two participants from the suicide group feeling that it had caused lasting emotional distress and 25% reporting that overall, participating in the study had been a positive and useful experience. This figure is similar to previous psychological autopsy studies in younger people (Hawton *et al*, 2003), and suggests that most relatives and friends can participate in psychological autopsy studies without severe or lasting distress provided the interview is conducted sensitively. Indeed, there may even be some therapeutic benefit in a detailed exploration of the circumstances of a relative's death. This will be discussed later in relation to the study on the needs of the bereaved subjects (section 4.2.2.c).

4.1.1.b Limitations of the study: inquest notes and GP records

The use of coroners' inquest records as a data source for the examination of risk factors associated with suicide is prone to omissions because the purpose of the inquest is to establish a cause of death rather than to explore all possible antecedents and background history. Hence, there may be relatively little information in the inquest records for a death which was clearly due to suicide. Furthermore, the quality and quantity of information available in the inquest notes vary markedly from coroner to coroner. There may be variations in the number of witness statements taken, and some coroners will not ask routinely for statements from GPs or, where relevant, psychiatrists. Not all suicide deaths will have a toxicology screen or alcohol levels performed post mortem, which means that some overdoses occurring along with other modes of self harm will be missed. We were able to examine GP notes in 81.5% of cases. The relatively high number of casenotes that could not be located may have partially reflected the reorganisation of health authorities which took place during the study period. Because of the limitations of using written records alone, records were used to study only factual details which were present for all subjects, ie demographic factors and contact with services. Informant interviews were used as the main source of data for the study of psychological variables and antecedents to the deaths.

4.1.1.c Limitations of the study: interview data

The main limitation of this study is the low participation rate (51.3%) of potential informants. Similarly low rates were noted in other recent English psychological autopsy studies (Appleby et al, 1999; Hawton et al, 1998, 1999, 2002), in contrast

with higher participation rates in studies of suicide in older people from the USA (eg Conwell *et al*, 1996) and Finland (Henriksson *et al*, 1995). These international differences may reflect variations in the degree of assertiveness in recruitment procedures, or in societal attitudes towards participation in psychiatric research in these countries. A direct initial approach by a personal visit or telephone may have resulted in higher participation levels but this is disliked by some relatives (Runeson & Beskow, 1991), and in any case is often not allowed by UK research ethics committees (Hawton *et al*, 1998). The low participation rate led to difficulties recruiting informants for the control group, and the case-control study was of smaller size than planned. It thus lacked the statistical power to detect small differences in prevalence of potential predictors of suicide.

There was the possibility of selection bias at two levels. First, the cases in the suicide group with informant interviews may have been unrepresentative of the suicide group as a whole. No variables which were postulated by the investigators to have led to selection bias were found to be associated with participation in the study. However it is possible that access to an informant may have been related to factors which we could not test for due to lack of information on the non-interviewed subjects. For example, people with personality disorders, schizophrenia or alcohol dependence may have been less likely to have informants available, biasing results of the case-control analysis for these disorders towards the null hypothesis. Second, the suicide subjects for whom a matched control was identified may not have been representative of the interviewed suicide group. However, no differences were found in the prevalence of different

variables in the interviewed sub-group of suicide subjects for whom a control was identified, compared with the sub-group without a control.

Two important problems can affect the reliability and validity of information gained through psychological autopsy interviews (Hawton *et al*, 1998). Recall bias can lead informants to selectively recall certain facts, for example positive characteristics of the subject, and selectively forget others, such as negative aspects of the deceased (or vice versa). Second, information may be unreliable for several reasons. For example, the informant may not have been aware of certain aspects of the subject's lifestyle or choose to withold information which may cast the deceased person in a bad light. A recent evaluation of the validity of proxy-based data in suicide research showed that informants were accurate in reporting public and observable events, for example, frequency of social contact or bereavement, but less accurate in reporting ambiguous or subjective events, for example level of perceived emotional support (Conner *et al*, 2001b). In this study the impact of these problems was minimised by the interviewer's adherence to a standardised interview schedule, use of multiple sources of information (GP and inquest notes as well as the interview), and regular meetings of all four investigators in order to make consensus decisions regarding psychiatric diagnoses and life problem data.

The validity of diagnosis of psychiatric disorder in psychological autopsy studies has been assessed in two ways. First, in a recent USA study (Kelly & Mann, 1996) comparison of research diagnoses made through psychological autopsy interview with clinician ante-mortem diagnoses showed high levels of agreement for both Axis I and

Axis II diagnoses. Second, a diagnosis in a living patient with an established

psychiatric disorder is assessed through an informant interview by a researcher blind to

the patient's diagnosis. Studies of this method have shown good inter-rater reliability

but some under-reporting of psychiatric symptoms (Andreasen et al, 1977; Brent et al,

1993a). A study using this method to assess the validity of psychiatric diagnoses made

through proxy-based data specifically in older people, showed better diagnostic

agreement for mood disorders and substance dependence than for other psychiatric

disorders (Conner et al, 2001a). In this study, the possiblity of under-reporting was

minimised by the use of detailed interview schedules. Blinding of the interviewer as to

whether a subject was a suicide or control was impossible, so interviewer bias cannot

be ruled out. However, the instruments used for assessing personality and psychiatric

variables were standardised and structured, and the same screening questions were

asked of all informants in both suicide and control groups. One option to minimise

interviewer bias would have been for the three non-interviewing investigators to listen

to tapes of interviews, blind as to whether the informant was for a suicide or control

case, and assign their own diagnoses before a discussion to reach a consensus

diagnosis. However, this would have been very time-consuming (Hawton et al, 1998).

A compromise was made whereby every case was discussed between all investigators,

after a written report had been circulated by the interviewer. In four cases, the

diagnosis was changed after such discussions.

The Psychiatric Illness Questionnaire (PIQ) has not been as extensively validated as

some other informant based diagnostic interview schedules (for example the Stuctured

Cilinical Interview for DSM IV diagnoses (SCID) (Spitzer et al, 2002). However the

PIQ was chosen for this study for several reasons. First, it is based on ICD10 diagnoses which British clinicians are familiar with. Second, it was used in a psychological autopsy study of younger people carried out in the same geographical area as this study (Houston *et al*, 2001), so direct comparisons of the rates of disorder found in older people compared with those in the younger sample could be made. Third, the PIQ is briefer and less tightly structured than the SCID, therefore more easily incorporated into the semi-structured interview schedule.

The PIQ has not been specifically validated on a sample of older people, and using an informant interview to diagnose psychiatric disorder in older people presents special problems. First, it could be difficult to ascertain whether somatic symptoms were due to depression or physical illness. Somatic symptoms were included in the check-lists used to diagnose depression, regardless of whether the subject had co-existent physical illness, enabling a consistent approach to diagnosis in both suicide subjects and controls. This approach may have led to the over-diagnosis of depression in both groups but it is likely that any over-diagnosis would have occurred more in the physically ill control group. Problems leading to possible under-diagnosis of psychiatric illness in the control group include the "masking" of psychiatric symptoms by physical illness or delirium, and informants in this group perhaps being more liable to attribute distress to physical rather than psychiatric illness.

The assessment of personality traits and disorder is a complex area with considerable methodological problems. The tool used to assess personality, the Personality Assessment Schedule (PAS) is well validated (Tyrer *et al*, 1988), but has not been

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validated on a specifically older sample. The PAS was chosen for this study as it is relatively brief, based on ICD 10 rather than DSM criteria (hence making the finding of the study more meaningful to British clinicians), easily incorporated into a semi-structured interview, and allows the study of trait accentuation as well as personality disorder. Some researchers have studied personality using a dimensional rather than categorical assessment of traits (Duberstein *et al*, 1994; Duberstein, 1995). However, interpreting the results of dimensional personality assessment tools can be methodologically complex with results often difficult to apply to clinical practice.

The assessment of life problems in this study used a semi-structured interview rather than using a brief structured life event questionnaire such as the Recent Life Change Questionnaire (Holmes & Rahe, 1967) or the List of Threatening Experiences (Brugha *et al*, 1985). The looser format was chosen to allow the informant to discuss life problems and their impact on the deceased in more depth, and to explore areas not covered by these briefer questionnaires. However, the lack of structure of the interview, and the relative subjectivity of the way in which problems were coded, might have introduced bias and exaggerated differences between suicide and control groups. With these reservations in mind, caution needs to be applied in interpreting the results of the case-control analysis of life problem data. This issue is discussed in more detail in Section 4.1.1.d. The Life Events and Difficulties Scale (Brown *et al*, 1973) is a detailed semi-structured interview schedule which provides extremely thorough coverage of life events and problems. Through the analysis of taped interviews, it also allows the emotional impact of each event to be coded. However, such a lengthy

interview schedule would have been difficult to incorporate into a detailed psychological autopsy interview.

4.1.1.d Limitations of the study: control group

The choice of control group in suicide research depends in part on the research question being asked; an age-matched living control group can be used in order to find out what features differentiate those who commit suicide from those of a similar age who have not committed suicide. An age-matched deceased control group can be used to investigate what features differentiate people who die through suicide from those who die through other causes. The two control groups answer different research questions. Practical considerations also play a part in the type of control group chosen.

The first controlled psychological autopsy study of suicide in older people used an age- and sex- matched control group of deceased people to examine social risk factors for suicide (Miller, 1978). However, this study was small, narrow in scope (confining itself to older white males), and only limited quantitiative data were published. There have since been two major case-control studies of suicide in older people (Conwell *et al*, 2000; Waern *et al*, 2002a *and* b) both of which used age- and sex- matched living controls. Most controlled studies of risk factors for suicide in younger age groups have used living controls, usually age-and sex- matched and from the same community as the suicide group (eg Brent *et al*, 1993b; Cheng, 1995; Lesage *et al*, 1994; Shaffer *et al*, 1996). The use of living controls has the advantage that they are easier to identify and recruit. However, in a detailed review of the psychological autopsy method, Clark

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and Horton-Deutsch (1992) advocated the use of deceased controls in suicide research. They argued that such control groups would minimise asymmetry in data collection; both sets of informants would be prone to similar recall bias and both would be distressed by a recent bereavement. The use of a control group of deceased individuals identified through the coroner's register (for example accidental deaths) might further minimise asymmetry of data collection, in that the initial sources of information would be identical (coroners' records) and both sets of informants will have had to undergo the inquest procedure (Boardman et al, 1999). However using an accidental death control group has some disadvantages. First, some deaths where a verdict of accidental death is returned may be suicides which are misclassified by the coroner, for example in car accident deaths, jumping, drowning etc. (Hawton et al, 1998). Second, a high proportion of accidental deaths in older people occur in the physically frail and cognitively impaired, which would create bias when trying to assess the role of physical illness and psychiatric disorder in suicide.

A control group of deceased people was chosen for this study because it was thought it would minimise asymmetry in data collection techniques between study and control groups. A control group of people dying through natural causes was chosen in order to study the risk factors for suicide in the general older population.

Methodological difficulties were encountered with the control group used for this study. First, the mode of case identification and sources of information available for suicides and controls were different. The coroners' notes contained more information and a longer list of potential informants than the hospital case-notes used as the initial

data source for the control group. Second, significantly more of the control group were married compared with the suicide group. These two factors may have led to the higher proportion of spouses acting as informants in the control group, and the greater number of friends interviewed in the suicide group. These differences may have led to bias in reporting on problems in the year before death. For example, spouses may be more likely to minimize the role of marital stressors in contributing to their partner's suicide and male informants may be less likely to mention financial and interpersonal problems affecting their relatives (Heikkinen *et al*, 1995). Third, chronic physical illnesses were likely to have been over-represented in the natural death control group. Fourth, hospital inpatients have high rates of cognitive impairment and depression (Bowler *et al*, 1994), leading to high rates of these diagnoses in the control group. Fifth, differences in the grieving process between informants in the suicide and control groups may have influenced the way informants responded. For example, control group informants may have been less likely to have been "searching for an explanation" for the death (Barrett & Scott, 1990) and hence less likely to remember or report all life events in the year before their friend or relative's death. Lastly, the higher rates of depression in subjects in the suicide group may have led to bias. Depressed subjects may have complained more about minor problems, which in turn might have led to the reporting of more life problems by informants for the suicide group. However, both suicide and control group informants reported the same mean number of problems per subject, which suggests that problems in the suicide group were not being over-reported.

4.1.1.e Limitations of the study: statistical analysis

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The low number of subjects in the case-control analyses of psychiatric disorder and life problem data increases the risk of Type 2 error *ie* a true predictor of suicide being missed because of a lack of statistical power. This is most relevant for risk factors with low prevalence. The risk of a Type 1 error, *ie* a false positive finding, is increased by the significance testing on a large number of variables. In this study, the risk of Type 1 errors is probably greatest in the analysis of life problem data (Table 10). This part of the study was set up to explore a number of putative risk factors not previously examined, and the findings clearly require replication in a larger study before they can be regarded as risk factors for suicide in older people. One possibility to reduce the risk of Type 1 errors is the use of a correction method such as the Bonferroni correction (Altman, 1991), although this method is very conservative. The results have been reported without use of a correction method, but caution must be taken in interpreting them.

4.1.2 Discussion of results

4.1.2.a Demographic variables

The mean age of the entire suicide sample (72.2 years) was very similar to the means of 73.5 and 73 years found by Cattell (1988) and Cattell and Jolley (1995) respectively, despite the fact that the sample in this study included people sixty years old and over and the other studies included only people over 65 years old. The earlier studies collected data on deaths between 1980 and 1991. Over the last decade, the suicide rate has fallen in the younger elderly, with rates in those over 75 remaining more stable (Kelly & Bunting, 1998). This would result in a higher average age for suicides in those over 60 years, and might explain the similar average age found in the current study.

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The mean ages of the suicide and non-suicide verdict cases were similar in this study (71.9 compared with 72.3 years) so the inclusion of open and accidental verdict cases would not account for the difference in mean age between this and the earlier studies.

Most studies from outside the UK have shown a male preponderance amongst older suicide victims (eg Conwell *et al*, 1996; Henriksson *et al*, 1995). However the two most recent British studies showed similar proportions for the two sexes (Cattell, 1988; Cattell & Jolley, 1995). In this study, male suicides outnumbered female suicides by two to one. This might be partly explained by the changing rates of suicide in men and women, with a greater fall in rates of suicide in older women than older men during the last fifteen years (Kelly & Bunting, 1998). Fewer (57.1%) of the open and accidental verdict cases were male compared with the suicide group (70%), so the inclusion of these cases in our study does not explain the marked male preponderance compared with the earlier British studies.

The finding that the majority (79.5%) of the sample were Caucasian and British born is similar to the findings of Cattell and Jolley (1995) in their Manchester study, and of Cattell (1988) in London. Irish immigrants to the UK have been previously noted to have a high risk of psychiatric disorder and suicide (Raleigh & Balajaran,1992; Bracken *et al*, 1998). The data from this study did not confirm this finding in an older population: 4.6% of the sample were Irish born, a figure similiar to the 4.2% of the population over sixty years old in the study area who were of Irish origin in the 1991 census (Office of Populations Censuses and Surveys, 1993). The numbers of non-Caucasian and non-British suicides in this sample were too small to permit any detailed

examination of possible differing risks of suicide in other ethnic groups.

The higher proportion of widowed women (54% compared with 28.8% for men) can be partly explained by the greater longevity of women. The proportions of single (17.4%) and divorced or separated (14.4%) men are markedly greater than the figures from UK Census data (7.4% single men, and 3.7% divorced men in the over 60 age bands living in the study area according to the 1991 Census (Office for Popuations Censuses and Surveys,1993)). There were no clear differences between the distributions of women according to marital status in the study sample and in Census figures. The higher incidence of suicide in those of non-married marital status is a well established finding in epidemiological surveys (Kelly & Bunting, 1998), and the protective effect of marriage may be particularly important for older men (Li,1995). The data are consistent with these findings.

Unfortunately, social class data for retired older people is not available from the published 1991 Census figures. Without comparison with age-matched local data it is difficult to draw any firm conclusions about the social class distribution of the study sample. However, the social class distribution of the subjects was broadly similar to figures for the working age population in the census regions corresponding to the study area (Office of Populations Censuses and Surveys, 1993). Cattell (1988) also did not find any clear skewing of social class distribution in his sample of older suicides.

Bunting and Kelly (1998) note trends in the geographical distribution of suicides in Britain, with higher rates in Scotland, the North West of England, and some areas of

inner London. In their paper the areas where this study took place had neither particularly low nor particularly high rates of suicide for people over 45 years old. Results from the present study showed that the rates of suicide in the five counties studied appeared broadly similar (0.21-0.42 per 1000 in the two and a half year period of study). It is difficult to make comparisons between counties because of the relatively small numbers of suicides in each county, and the possible bias introduced by administrative differences between coroner' offices, for example differences in the average time between a death and the inquest being held.

Because of lack of accurate local data on the living circumstances of older people, it is difficult to draw firm conclusions about whether living circumstances contributed to suicide. About half (49.2%) of our sample were living alone, compared with 29.7% of people over 60 years old living alone in the 1991 census data for the whole of England (Office of Populations Censuses and Surveys, 1993). Cattell (1988) also found that a higher than expected proportion of older suicides in London were living alone at the time of death (61.5%) compared with local census data. However, in Cattell and Jolley's Manchester sample (1995) there were similar proportions living alone, among the suiicdes and census figures. American research has demonstrated a reduced rate of suicide in residential settings, and it has been postulated that the greater disablility and higher levels of supervision of residential home residents might explain their reduced frequency of active suicide attempts (Osgood et al, 1991). However the proportion of the sample in the present study living in nursing or residential care (3.1%) is similiar to the 3.6% of those of pensionable age in the study area living in care establishments at the time of the 1991 census (Office of Populations Censuses and Surveys, 1993).

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4.1.2.b Circumstances of death

The frequency of different modes of death was compared with that in a sample of suicides under the age of 25 years from the same study area (Hawton et al, 1999). There were no major differences between the two groups. Rates of hanging (33.3% in the younger sample compared with 25.6% in our sample), self-poisoning (47.1% v 43.1%), gunshot (3.4% v 4.1%) and drowning (2.3%v 6.7%) were similar, although there were higher rates of death through carbon monoxide poisining (27.0% v 10.8%) and jumping (13.2% v 3.1%) in the younger sample and higher rates of death through asphyxia (1.1% v 9.7%) in the older sample. This study confirmed the well known sex differences in methods of suicide (Kelly & Bunting, 1998), men showing higher rates of hanging, shooting, and other violent methods, and women more often using drug overdose. As men tend to use methods of high lethality, and there has, until very recently, been a dramatic recent increase in young male suicides, (Kelly & Bunting, 1998) modes of death in younger and older samples may be becoming more similar.

Our study shows lower rates of barbiturate poisoning (4.1% of all deaths) than the 28% of Cattell's (1988) series associated with barbiturate overdose in 1980-1984, a finding consistent with the population decline in barbiturate overdoses in the elderly reflecting reduced prescribing (Dennis & Lindesay, 1995). The rate of benzodiazepine overdose was relatively low at 5.6%, but this may still be relevant in terms of the need for primary care education for suicide prevention as a recent study in primary care

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showed that prescription of hypnotic medication is highest for older people, continued use is high among new users, and a large proportion of benzodiazepine use in the elderly is in those with concurrent depression (Taylor *et al*, 1998).

The risk of death from paracetamol overdose is well known, but the high rates of combination analgesics overdose, mainly co-proxamol, is a particular matter of concern. A recent UK study of suicide in younger people showed high rates of co-proxamol overdose in this age group (Hawton *et al*, 1999). Certain combination analgesics are potentially lethal in overdose because of the respiratory depressant effect of the opiate component (dextropropoxyphene in co-proxamol). Such analgesics are prescription-only drugs, and there is evidence that they are no more effective than simple analgesia for controlling mild to moderate pain (Po & Zhang, 1997). Encouraging GPs to avoid prescription of these drugs, especially in older people with depression, would seem a reasonable strategy to try and reduce suicide rates.

Antidepressant overdoses occurred in sixteen (8.2%) of our sample. Eleven of these were dothiepin or amitriptyline overdoses, and the only two overdoses of specific serotonin reuptake inhibitors occurred in conjunction with other medication. Studies using the numbers of fatalities related to overdoses of different medication, and the total number of overdoses, can enable a "fatal toxicity index" to be calculated, and have found that amitriptyline and dothiepin may be the most toxic of all antidepressants in overdose (Henry *et al*, 1995). In addition, older people are more susceptible to the cardiotoxic effects of antidepressants. This underlines the need for caution in prescribing dothiepin and other tricyclic antidepressants to older people at risk of

suicide, especially in the absence of a carer or relative who can supervise the medication.

Overall, carbon monoxide poisoning as a method of suicide has recently been decreasing in the population (Kelly & Bunting, 1998). However we found a greater proportion of such deaths than did Cattell (1988) and Cattell and Jolley (1995), possibly reflecting the emergence of a new cohort of car owning older people. Drowning as a method of suicide is more frequent in older people and often associated with an open or accidental death verdict (Kelly & Bunting, 1998). Over half of the deaths by drowning in our study received an accidental or open verdict. As in previous British studies, shooting was a rare method of suicide, in contrast with the USA where gunshot is the most common method of suicide in older people (Kaplan et al, 1996;1997).

A quarter of all suicide deaths in our sample were caused by hanging. Strategies focusing on reducing the availablity of methods of suicide will not have an impact on this large proportion of suicides in older people.

4.1.2.c Previous suicide attempts

More than a third (37.9%) of our sample had a history of previous suicide attempts, a figure similar to the rate of 44.8% found in a study of much younger people in the same study area in the UK (Hawton et al, 1999). The figure is higher than the 18% reported for a sample of older suicides in Cheshire over the same time period as this study (Salib et al, 2001b), probably because the Cheshire study only used information

from inquest records. In the USA, older suicide victims have been found to have a lower frequency of previous deliberate self harm than younger suicide victims (Carney et al, 1994), and the figures for previous suicide attempt are generally lower than in the UK. This may be partly explained by the higher risk of dying at first attempt in the USA where gunshot is a common method of suicide, especially in older people. An important practical point arising from the study is the fact that in one third of people with a history of previous self harm, the most recent suicidal act was more than five years previously. This highlights the importance of thorough history taking and thoroughly examining old notes for details of previous attempts when assessing suicide risk in an older person, a point also made by the authors of the Cheshire study (Salib et al, 2001b).

4.1.2.d Contact with GP and psychiatric services prior to death

Half of the study sample had seen a GP within a month of death, a rate similar to the 43% found by Cattell and Jolley (1995) and the 68% found by Vassilas and Morgan (1994) in samples of older people. These rates are higher than those found in samples of younger people (Hawton et al, 1999; Pirkis & Burgess,1998; Vassilas & Morgan,1994). While GPs are often proposed as key professionals in suicide prevention, over half of the final consultations with a GP were for physical symptoms, highlighting the difficulty GPs might have in identifying those at risk of suicide. There was no clear gender predominance in presentation with either physical or psychiatric symptoms at the final consultation, the proportion of males and females in each group reflecting that of the total sample. A study in primary care in England showed that GPs identified depression in only about half of depressed older patients, and were more

likely to miss the diagnosis in men, and those with physical handicap, visual impairment or low educational level (Crawford *et al*, 1998). Only 38% of those identified as depressed received any form of treatment for their affective disorder. The current study showed that over half the depressed suicide group received either no antidepressant, or a drug at inadequate dose. Hypnotics were being prescribed in over half of these depressed patients. There are well-known obstacles to the diagnosis and treatment of depression in older people in primary care including co-existent physical illness or cognitive impairment, and attitudes of patients, carers, and professionals that "understandable" depression does not need to be treated (Evans & Mottram, 2000; Baldwin, 2002). Older depressed people may be less likely to vocalise emotional distress and more likely to present with somatic symptoms (Baldwin, 2002), which may have partly explained the finding that last consultations with the GP before death tended to be for "physical" problems (see above). There have been repeated calls for effective education of GPs in the treatment of depression (eg Draper, 1995; Paykel & Priest, 1992). Knowledge and attitudes can be improved with appropriate training (Michel & Valach, 1992). The Gotland study in Sweden (Rutz *et al*, 1992) showed that an educational programme for primary care in the detection and treatment of depression might have reduced the suicide rate in the population. It is unlikely that such a study will ever be repeated in the UK, because of the vast subject numbers needed for such a project. The best hope for improving primary care management of depression in older people (and hopefully preventing some suicides) probably lies with initiatives such as the National Service Framework for Older People (Department of Health, 2001a) which is encouraging the development of clear protocols for the management of psychiatric disorder in primary care, risk assessment, and appropriate referral to

psychiatric services.

Only one quarter (26.1%) of our sample had had contact with a psychiatric team in the year before death. In general, rates for younger age groups are higher (Pirkis & Burgess, 1998). These data highlight the limited impact that psychiatric services alone can have in preventing suicide in older people. Of the fifty-nine subjects with depression at the time of death, twenty-three (36.5%) were being followed up by a psychiatric team at the time of death. In light of the limited evidence that referral to a psychiatric team improves outcome more than good GP treatment for depression in older people (Jenkins & Macdonald, 1994) and regional differences in secondary care sevices, it is hard to justify advocating increased levels of referral to secondary care. Rather, the emphasis needs to be on more effective management of depression within primary care (see above).

4.1.2.e Psychiatric disorder and personality variables

Over three-quarters (77%) of the suicide sample for whom informant interviews were performed had a psychiatric disorder at the time of death. Psychiatric disorder did not emerge as a risk factor for suicide when compared to the control group due to the high rates of delirium and dementia in the control group. The clearest finding of the study is the high rate of depression found in the suicide sample; nearly two-thirds of the individuals in the suicide group with interviews were suffering from a depressive disorder at the time of death. This figure is lower than the 87% found by Barraclough (1971). It is, however, similar to the rates of 64-71% found in most other studies of older suicides (Conwell *et al*, 1991; Conwell *et al*, 1996, Henriksson *et al*, 1995,

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Waern *et al*, 2002a), with the exception of Carney and colleagues (1994) who found a rate of only 36% for major depression in their study from the USA. Despite the high rate (31%) of depressive episodes in the control group, depression was the only psychiatric disorder found to be a predictor of suicide in the comparison of suicide and control groups. Some authors have hypothesised that a first episode of depression in old age is associated with a particularly high suicide risk (Barraclough, 1971; Shah & De, 1998). In this study, 37% of the depressed subjects were suffering their first depressive episode at the time of death, a figure just above the rates of 14-35% in previous studies in older people where this data has been reported (Barraclough, 1971; Conwell *et al*, 1991b; Waern *et al*, 2002a). There was, however, no difference between rates of first episode depression in the suicides compared with the control group. In support of this finding, a carefully conducted case-control study using living controls found that first episode depression was associated with a lower risk of suicide than recurrent depression (Waern *et al*, 2002a). Chronic depression has been reported as being associated with high suicide risk (Modestin, 1989; Shah & De, 1998). About one third of the depressed subjects in this study had a depressive illness lasting 12 months or over before death, but the trend towards longer duration of depressive illness in the suicide group compared with the control group just failed to reach statistical significance. In order to further clarify the role of clinical features of depression in older people, including recurrence, duration, and specific symptoms in predicting suicide risk, research with a control group of depressed patients will need to be carried out.

In the interviewed suicide sample the rates of dementia (4.0%) and other cognitive impairments (6.0%) are similar to rates found in population surveys of cognitive impairment in older people (eg Copeland *et al*, 1992), despite our use of a sensitive instrument for detecting early cognitive decline. The high rate of dementia in the controls make comparison with this group problematic. The relation between dementia and suicide is likely to be complex. The authors of a case report hypothesised that mild dementia is a risk factor for suicide (Margo & Finkel, 1990). However, in a study of self-reported suicidal ideation in dementia patients with mainly mild illness, suicidal ideation only occurred in 4% of the group and was always associated with co-morbid depression (Draper *et al*, 1998). It is likely that any risk of suicide in dementia declines along with deteoriation in executive function and increased supervision from carers (Conwell, 1995b). The current study findings suggest that although cognitive decline may contribute to suicide in certain individuals, it is not of major importance as a risk factor at a population level.

The rate of alcohol abuse in our interviewed suicide sample (5.0%) was much lower than the 25-47% found in recent studies in the USA (Conwell *et al*, 1996), Scandinavia (Waern et al, 2002a) and Finland (Henriksson *et al*,1995). This reflects real international differences in the prevalence of alcohol abuse in older people, but the rate may also be higher in these countries because of the greater prevalence of shooting as a method of self-injury (Shah & De, 1998). Impulsive suicidal acts in the context of alcohol use are more likely to have a fatal outcome if shooting is used as the method of self-harm.

The low rates of alcohol and substance abuse, and of schizophrenia, contrast with the higher rates of these disorders found in recent UK studies of younger suicide victims (Appleby *et al*, 1999, Houston *et al*, 2001) and studies of suicide in all age groups (Foster *et al*, 1997; Vassilas & Morgan, 1998). As discussed earlier, the apparently low rates of alcohol dependence and schizophrenia may have been due to the reduced likelihood of people with these disorders having an available informant.

Multiple psychiatric disorders occurred in 15% of the suicide group with interviews, a figure lower than the 32% found in a recent UK study of younger suicide victims (Appleby *et al*, 1999) and the 31% reported in a recent study from Northern Ireland of suicide in all age groups (Foster *et al*, 1997). Co-morbidity, especially of mood disorder and substance abuse, is less common in older people compared with younger age groups (Conwell *et al*, 1996).

The rate of personality disorder in the suicide group (16%) is similar to the rate of 14% found in the Finnish series (Henriksson *et al*, 1995) but lower than the rates of around 30-40% found in studies of younger suicides (Appleby *et al*, 1999; Foster *et al*, 1997; Houston *et al*, 2001; Henriksson *et al*, 1995). Dissocial or borderline disorders in particular are more prevalent in younger suicide victims. Our finding of an association of suicide in older people with anankastic (obsessional) and anxious personality traits may have parallels in recent work from the USA. Using the NEO-PR, a dimensional method of measuring personality, older suicide victims have been shown to be more likely to have low scores on the "openness to experience" sub-scale than younger suicide victims, who display higher levels of impulsivity (Duberstein *et al*, 1994 ;

Duberstein, 1995). The low openness to experience domain, characterised by constricted affect, lack of adaptability, and cognitive rigidity, overlaps to some extent with ICD-10 anankastic personality traits. It is plausible that older people who are less adaptable will cope poorly with the inevitable changes that ageing brings, and may be at increased risk of suicide. Nearly all the suicide subjects with a personality disorder diagnosis had a co-morbid psychiatric disorder, suggesting that suicide in an older person with personality difficulties is rare without a co-existent psychiatric illness.

4.1.2.f Suicide in subjects with no psychiatric disorder

The number of people with no psychiatric disorder was relatively small, and there are no data on those subjects for whom an informant was not available. It is possible that the sample was biased, with potential informants for subjects without psychiatric illness being less likely to agree to participate in the study.

However, there are three key findings from this group. First, severe physical illness occurred in only a quarter of the sample; the majority of subjects were functionally independent and free from significant illness at the time of death. Second, although psychiatric symptoms not meeting the criteria for an ICD-10 diagnosis are associated with suicidal ideation in older people (Linden & Barnow, 1997), less than a fifth of the sample without psychiatric disorder had evidence of such symptoms. The presence of "sub-syndromal" depression is therefore unlikely to have been a major factor contributing towards the suicides in this group. Third, abnormal personality traits were common, occurring in about half of the sample. As noted above (section 4.1.2.e) the way a person perceives and solves life problems is closely linked to personality and may be more important than the problem itself in determining suicide risk (Williams &

Pollock, 2000). Indeed, some of the problems influencing the decisions to die made by the subjects in this study might seem to an outsider to be relatively trivial and certainly not the sort of problems that would normally be cited as reasons for a "rational suicide" (Humphry, 1992). The high levels of abnormal personality traits, particularly anankastic traits may indicate that in many cases of suicide in older people where psychiatric disorder is not present, inflexible thinking or other cognitive distortions contribute to the decision to die, rather than this decision being always a carefully thought out rational response to insoluble life problems. Further research, including both formal personality and psychological assessment, but also qualitative studies, needs to be carried out on older survivors of deliberate self-harm attempts, and older people with suicidal ideation, to clarify the role of personality and cognitive style in suicidal thinking in this age group. Our lack of understanding of these factors may be one reason for the disappointing lack of efficacy of more "standard" psychological treatments in managing suicidal patients (Heard, 2000, Hawton et al, 1998c).

4.1.2.g. Physical illness

Physical illness was the most frequent problem associated with suicide, being mentioned as a problem in the year before death for 82% of subjects, and a contributory factor to death in two-thirds of the cases. Two-thirds of the subjects had an illness affecting their ablility to carry out their activities of daily living. These findings are similar to those from other psychological autopsy studies of older people (Carney et al, 1994; Heikkinen & Lönnqvist, 1995; Purcell et al, 1999, Waern et al, 2002b). Several community studies have confirmed that physical illness is a major contributor to depression in the older population (Kennedy et al, 1990; Prince et al,

1998), and it is becoming increasingly clear that it is also a major contributor to suicide in the elderly. The link between suicide and physical illness may be mediated in part through depressive symptoms; 62% of people in whom physical illness was a problem in the year before death, and 65% of those in whom physical illness contributed to death, also suffered from depression during the month before they died (see case vignette 2, Appendix 6). In a recent American case-control study, physical health and functional measures did not differentiate the suicide cases from the living controls once the effect of depression had been controlled for (Conwell *et al*, 2000).

Neurological disorders and malignant disease are known to be associated with an increased risk of suicide (Stenager & Stenager, 2000; Waern *et al*, 2002b). In the current study, case-control comparison of different rates of diagnoses was difficult because of the high physical morbidity of the controls, and likely over-representation in that group of poor prognosis disorders (as the controls had all died of physical illness). A diagnosis of cancer was more frequent in the control group, and no differences in the rates of cerebrovascular or other neurological disease were found between suicide and control groups. Five of the suicide subjects were found to have cancer at post-mortem examination but this diagnosis was not made during life. Cattell (1988) also noted that six of his series of 104 older suicides had an occult carcinoma at post-mortem. There are two explanations for this finding. First, depression can probably herald a neoplasm before it becomes clinically evident (Whitlock, 1978). All of Cattell's subjects and three (60%) of the subjects in this study with occult carcinoma were depressed. Second, it may be that the subjects suspected that they had cancer because of certain physical

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symptoms, but did not seek medical help for fear that the diagnosis would be confirmed. This appeared to be the case for at least two of the subjects in this study.

Pain was the commonest identifiable specific symptom contributing towards suicide, being a factor influencing the subjects' decision to die in 24% of the sample. In nearly half the suicide sample moderate or severe pain was experienced around the time of death. Pain has previously been noted to be associated with suicide in older people in case series (Purcell et al, 1999; Cattell & Jolley, 1995), but an important point from this study is that the origin of the pain leading to suicide may be from chronic common disorders rather than life-threatening or terminal illness; pain contributing to suicide was more likely to have been due to osteoarthritis (twelve cases) than cancer (six cases). The next most common specific symptom influencing suicide was breathlessness, which was a factor influencing the decision to die in 8% of the group. The most common cause of this symptom was chronic obstructive airways disease. Dyspnoea in particular is being increasingly recognised as a major cause of functional limitation in older people, and is often associated with depressive and anxiety symptoms (Ho et al, 2001). A previous case series also suggested a link between dyspnoea and suicide (Horton Deutsch et al, 1992). The suicide risk in the common disorders of old age has been poorly researched compared with suicide in cancer and neurological illness (Stenager & Stenager, 2000), yet symptoms of these disorders may be important in contributing to suicide in older people (see case vignette 1, Appendix 6). Visual impairment was found in 43% of the sample but no difference in rates were found between suicide and control groups. Waern and colleagues (2002b) showed that compared with a living control group, visual impairment was a risk factor for suicide.

Neither pain, visual impairment or any other specific physical symptoms emerged as predictors of suicide in the case-control study, probably because of the high rates of physical problems in the control group.

Functional limitation was a common factor associated with suicide, which was felt to be contributory to death in nearly one quarter of subjects. However, again, it did not emerge as a risk factor in the case-control analysis. Two recent case-control studies of suicide in older people have found functional limitation (Conwell et al, 2000) and serious physical illness or physical illness burden (Conwell et al, 2000; Waern et al, 2002b) to be risk factors for suicide. Fears of "becoming a burden" were commonly noted by the informants (see case vignette 1, Appendix 6) and often associated with fears regarding a move into residential care (see section 4.1.2.h). As with symptoms of physical illness, depression is a common and important mediating factor in this group, exacerbating feelings of guilt and low self-worth.

Physical illness may trigger suicide by other mechanisms. In three cases, the suicide occurred within days of a consultation with a doctor who informed the patient they had a serious illness (cancer in two cases and a serious neurological illness in one case). Two suicides appeared to be due to a misunderstanding of the significance of minor physical symptoms; for example one man thought that skin discolouration due to a minor dermatological condition was a serious malignancy.

4.1.2.h Other life problems

Perhaps the most interesting finding of the case-control study is the lack of an association between suicide and bereavement in the year before death. Epidemiological studies have demonstrated a threefold risk of suicide in widowed men compared with married men (Li, 1995) and a particularly high risk in the year following spousal bereavement (Bunch, 1972; McMahon & Pugh, 1965). Although 28% of our suicide subjects had suffered a bereavement in the year before death (a figure higher than the 18% and 13% found in recent Californian and Finnish psychological autopsy studies respectively (Carney *et al,* 1994, Heikkinen & Lönnqvist, 1995), subjects in the suicide group were no more likely to have been bereaved in the year before death than control subjects. Spousal bereavement was infrequent in both groups; only two in the suicide group and one in the control group had lost their partner in the year before they died. However, the number of people who experienced problems arising from bereavement more than one year before they died was greater in the suicide group (26%) than the control group (7.4%). Fourteen (63.6%) of the twenty-two subjects in the suicide group had problems related to a spousal bereavement. This suggests that chronic distress, especially after being widowed, may be a risk factor for suicide in older people, but bereavement within the previous year is not (see case vignette 3, Appendix 6). A recent study found that people who died through suicide within four years of spousal bereavement were more likely to have had psychiatric treatment and a past history of early loss than those who committed suicide later on (Duberstein *et al,* 1998). The authors suggested that clinicians could use these factors in the suicide risk assessment of widowed patients.

Although relatively infrequent compared with the rates of problems related to physical illness and bereavement, problems related to adjusting to retirement and financial problems (mainly debt) were more common in the suicide group than the control group. Neither of these problems emerged as predictors of suicide in the case-control analysis, probably due to the small overall numbers of subjects experiencing these problems. Although financial problems are less frequently associated with suicide in older compared with younger people (Carney *et al*, 1994, Heikkinen & Lönnqvist, 1995) our study suggests that financial debt may still be an important contributory factor to suicide in a subgroup of the "young old" (case vignette 4, Appendix 6). An early psychological autopsy study from Arizona noted a link between retirement and suicide in older men (Miller, 1978) and highlighted the importance of paid employment in maintaining self-esteem in some individuals. Loss of self-worth following retirement appeared to be a contributory factor to suicide in several cases in the present study (see case vignette 5, Appendix 6).

Accommodation problems were felt to be a contributory factor to death in 19% of the suicide subjects (case vignette 6, Appendix 6) In ten of these nineteen subjects, fear of an impending move into residential care was the main problem, a factor also highlighted by Amercian researchers as a precipitant to suicide in some older people (Loebel *et al*, 1991). Accommodation problems were not found to be a predictor of suicide in the case-control study, again due to small numbers. The physically dependent control group might have been expected to be experiencing worries about accomodation change, but it could also be argued that this group may have had more

immediate concerns about their physical health in the year before death which masked the impact of the longer term concerns about accommodation.

Social isolation was mentioned as a problem in the year before death in 15% of the suicide sample, but was found to be an equally frequent problem in suicide and control groups. However, numbers were small for case-control analysis, and this could be a false negative finding. A more objective measure of social isolation is the frequency of social contact in the year before death. Using this measure, thirteen of the suicide group (24.1%) and six of the control group (11.1%) had contact with a friend or relative less than daily in the year before death, but this difference failed to reach statistical significance (p=0.08). Nearly half the suicide sample were living alone at the time of death, a proportion higher than in the general older population in the study area.

In only two subjects were ongoing problems related to previous traumatic war experiences felt to have been a contributory factor to death, so it appears that war experience is unlikely to be a major risk factor for suicide in older people. Hot weather was noted to be a contributory factor to the death of two subjects. A report from Cheshire showed a weak association between suicide in older people and days with long hours of sunshine and low relative humidity (Salib, 1997), and hypothesised that impaired body cooling in the elderly or seasonal rhythms in serotonergic turnover may explain the link. In this study, the link between heat and suicide seemed more straightforward; both subjects were physically ill and hot weather exacerbated their discomfort.

4.1.2.i Interviewer and informant opinions on contributory factors to suicide.

Informant and investigator ratings of the main contributory factor to suicide showed a reasonable level of agreement (Table 9). The main differences between informants' and the investigator's ratings were that informants were more likely to rate physical illness and less likely to rate psychiatric disorder as the main influence on the subject's decision to die. There are various possibilities for these differences. First, informants, particularly if close to the deceased, may have found it difficult to take a detached overview of the subject's problems, and may have been less likely to rate problems that they felt in some way responsible for (Heikinnen *et al*, 1995). However, this being so, it would be expected that informants would be less likely to rate interpersonal conflicts (in which they may well have been involved) as contributory, which was not the case. A second possibility is that due to the stigma surrounding mental illness, informants might have felt more comfortable in the belief that physical illness, rather than psychiatric illness, was the main factor influencing the death of their friend or relative. Third, the investigator, a psychiatrist, may have been more likely to over- rate the importance of psychiatric disorder as a contributory factor to suicide.

4.1.2.j Conclusions

A suicide is the endpoint of a complex interaction of psychiatric, psychological, and demographic variables; life events and problems do not occur in isolation. Depression was confirmed as the major psychiatric risk factor for suicide in older people, being present in over half the suicide sample, and is likely to be a common mediating factor between life problems and suicide in older people (see case vignette 2, Appendix 6).

Personality factors, in particular anankastic traits, are likely to determine how an individual reacts to life problems (see case vignette 5, Appendix 6) (Duberstein, 1995; Williams & Pollock, 2000) and demographic variables, such as living alone and being widowed may be predisposing factors to certain life problems as well as psychiatric disorder (Shah & De, 1998). The study perhaps was not large enough to fully explore the role of life problems in suicide in in the elderly, but the association between suicide and unresolved problems related to bereavement merits examination in future case-control studies. In terms of prevention, access to methods is the most important factor to consider, and this study suggests that more appropriate prescribing in depression, avoiding hypnotics and opiates where possible, and concentrating instead on adequate treatment of the depression itself, may help to play at least a small part in preventing suicide in older people.

4.2 BEREAVEMENT AFTER SUICIDE

4.2.1 Discussion of method

4.2.1.a Strengths of the study

This is the largest British study in which bereavement after suicide has been studied. It is the only case-control study of grief reactions after suicide in older people apart from a longitudinal study of the natural history of bereavement reactions conducted in Los Angeles (Farberow et al, 1987 and 1992a, 1992b). Post-suicide bereavement research has tended to focus on spousal bereavement (McIntosh, 1993; Clark & Goldney, 2000) despite the fact that any suicide affects many other relatives and friends, and a high proportion of older suicide victims are living alone (Cattell & Jolley, 1995). This study

included people of various different kinships to the deceased, as well as friends and neighbours.

4.2.1.b Limitations of the study

One of the main limitations of the study was the low participation rate of potential subjects, which has already been discussed in relation to the psychological autopsy study (section 4.1.1.c).

There was no evidence of selection bias in terms of demographic characteristics of the suicide victims with a study participant compared with those without a participant. However, because of limited information on non-participants, other variables, such as social disadvantage, which influence participation in bereavement research, could not be examined (Boyle *et al*, 1996, McIntosh, 1993). There was a clinical impression that some people took part in the study because they wished to discuss unresolved issues about their relative's death. As a consequence both groups may have contained a high proportion of people with more severe grief reactions. Study interviews were carried out between 5 and 21 months after bereavement, so it is possible that levels of grief in some participants were particularly high at the time of interview due to the "anniversary effect" (the well known phenomenon where grief symptoms become more pronounced around anniversaries of a loss). However, the time elapsed between bereavement and interview in the study and control groups was similar, so this would not explain the findings of the case-control study.

The participation rate for the suicide group was higher than for the control group. Those experiencing uncomplicated bereavement through natural death may have been less likely to take part, again biasing the severity of grief reactions in the control group. The choice of a control group in bereavement research is difficult. In this study, a control group of people bereaved through deaths by natural causes was used in order to compare bereavement reactions after suicide in older people with bereavement reactions in the general population. An alternative would have been to use controls bereaved through accidental death, which would have the advantage of the bereaved having gone through similar legal procedures after death, and would also allow the separation of aspects of grief specific to suicide as a mode of death, rather than just grief symptoms common to all unexpected modes of death (Barrett & Scott, 1990). The methodological problems associated with using an accidental death control group have already been discussed (section 4.1.1.d).

A limitation of the case-control study is the problem of varying proportions of different kinships to the deceased in the two groups, with control participants more likely to be spouses. As discussed earlier (sections 1.3.7& 1.3.8) kinship to the deceased is an important determinant of grief reactions (Cleiren *et al*, 1994, McIntosh, 1993), which leads to problems in interpreting the findings of the study. However, although most sub-samples (eg spouses) are too small for meaningful subgroup analysis, the results from comparison of children in the two groups partly confirm the results from the overall case-control comparison.

4.2.2.Discussion of results

4.2.2.a Practical problems after suicide

Nearly forty percent of participants reported distress caused by the involvement of the media. Most of these complaints related to inaccuracies or insensitive wording of newspaper reports. A United Kingdom study from the 1970s reported similar findings (Barraclough & Shepherd, 1976). The same researchers also examined newspaper reports of inquests and noted a tendency for newspapers to focus on violent suicides, and to report these in a sensationalist way (Shepherd & Barraclough, 1978). Although the media have a legal right to attend public inquests and publish reports, factual errors and grossly sensationalist reporting are unethical and the source of much distress.

The second main finding was that over 40% of participants reported difficulties with the coroner's office. An earlier British study also found high levels of problems caused by the inquest, with 70% of bereaved relatives finding the procedures distressing (Barraclough & Shepherd, 1977). Biddle (2003) highlighted the widespread lack of preparation for relatives attending an inquest. Thorough explanation of the purpose and nature of the inquest by the coroners' officers supplemented by written information, might reduce distress. There is great variation in practice between different coroner's offices, with some providing information and emotional support for the bereaved, and others acting in a largely administrative role. However there were no striking differences in the number of problems reported per number of deaths for each coroner's office (although numbers in each subgroup were small).

In considering the findings it must be remembered that the bereaved were reporting problems at a time of great distress, which may have reduced their tolerance for minor delays and errors. Thirteen (15.3%) participants experienced problems with the initial

police contact after the death. Some of these were administrative problems such as delays in arriving or taking statements, which may be inevitable, particularly if the police are busy at the time a death is reported. Complaints about the approach and manner of the police were infrequent, occurring in only 5.9% of the total sample, and it was evident that many of the officers had been well trained in interviewing distressed relatives.

4.2.2.b Psychological symptoms and grief experiences

Participants bereaved through suicide scored higher than the control group on four subscales of the GEQ namely "stigmatisation", "shame", "rejection", and so-called "unique reactions". Barrett and Scott (1990) compared grief reactions measured by the GEQ in four groups of bereaved spouses, namely by death through suicide, accident, and expected causes and unexpected natural causes, and found comparable results to those of our study. Specifically, the suicide-bereaved differed from all groups by having higher mean scores on "rejection" and "unique reactions" and this group also had higher "stigmatisation" and "shame" subscale scores than the expected natural death group. Levels of guilt were similar in the suicide and natural death groups both in our study and also that of Barrett and Scott (1990). Guilt is a frequent symptom after unexpected bereavement. However, it appears to be more prominent in parents of children dying through suicide (Miles & Demi,1991; Kovarsky, 1989) than spouses bereaved through suicide (Barrett & Scott, 1990). It is possible, although difficult to verify, that the different patterns of kinship to the deceased in the two groups in our study might have accounted for some of the reported differences in grief symptomatology. However, a comparison of GEQ scores of the subgroup of children

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in the two groups showed that levels of "sense of rejection" and "unique reactions" remained higher in the suicide group, although "shame" and "stigmatisation" scores were not significantly different. These results are compatible with the work of others who have demonstrated differences between grief after suicide and other modes of death in samples of bereaved spouses (Barrett and Scott, 1990; Demi, 1984), parents (Kovarsky, 1989; Miles & Demi, 1991; Séguin *et al*, 1995), and young children (Cerel *et al*, 1999), even when kinship has been controlled for.

In the case-control study, the number of participants with scores in the range of the MADRS corresponding to clinical "cases"of depression were similar in both groups. In a longitudinal study of spouses bereaved through suicide Farberow and colleagues (1992a) found that at one year after bereavement they had more depressive symptoms than a control group bereaved through natural causes, although severity of depressive symptoms was similar in the two groups at two months and six months after bereavement. It is possible that because of greater variation in the timing of interviews after bereavement in our study differences between the two groups were obscured.

4.2.2.c Clinical relevance of study findings

A wide variety of problems were reported with the coroners' offices, so tackling these will need several different approaches. There is probably scope for greater efficiency to minimise delays and prevent simple administrative errors. The coroners' office is a common point of contact for geographically separated relatives, friends and neighbours. The routine provision of written information about the inquest procedure, grief after suicide, and where to go for help, to *all* bereaved relatives and friends

known to the coroner's office may be a simple and cost-effective intervention to reduce morbidity after bereavement through suicide. The Bereavement Information Pack published by the Royal College of Psychiatrists (Hill *et al*, 1997) and now also available on the internet would be appropriate for this purpose. A high proportion of informants in this study, and those in two recent psychological autopsy studies in younger people (Hawton *et al*, 2003) who received this pack found it useful. Although the role of counselling in post-suicide bereavement awaits evaluation in randomised controlled trials, the findings that a sense of stigmatisation, shame and rejection are greater in those bereaved through suicide indicate the importance of exploring these feelings in any counselling intervention being studied. The possibility that simple exploratory counselling could be therapeutic is supported by the fact that a substantial proportion of informants in the study found participating in a difficult and sometimes distressing psychological autopsy interview to be helpful in coming to terms with their loss.

5. ACKNOWLEDGEMENTS

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6. REFERENCES

Agerbo, E., Nordentoft, M., & Mortensen, P.B. (2002) Familial, psychiatric, and socio-economic risk factors for suicide in young people: nested case-control study. *British Medical Journal*, 325, 74-7.

Alexopoulos, G.S. (1991) Psychological autopsy of an elderly suicide. *International Journal of Geriatric Psychiatry*, 6, 45-50.

Andreasen, N.C., Endicott, J., Winokur, G., Spitzer, R.L. (1977) The family history method using diagnostic criteria. *Archives of General Psychiatry*, 34, 1229-35.

Appleby, L., Cooper, J., Amos, T., & Faragher, B. (1999) Psychological autopsy study of suicides by people aged under 35. *British Journal of Psychiatry*, 175, 168-74.

Baldwin, R.C. (2002) Depressive disorders. In: Jacoby, R., Oppenheimer, C., eds, *Psychiatry in the Elderly*. 3rd Edition. Oxford: Oxford University Press

Barraclough, B.M. (1971) Suicide in the elderly. *British Journal of Psychiatry*, (special supplement 6), 87-97.

Barraclough, B.M., Bunch, J., Nelson, B., & Sainsbury, P. (1974) A hundred cases of suicide: clinical aspects. *British Journal of Psychiatry*, 125, 355-73.

Barraclough, B.M., & Shepherd, D.M. (1976) Public interest: private grief. *British Journal of Psychiatry*, **129,**109-13.

Barraclough, B.M., & Shepherd, D.M. (1977) The immediate and enduring effects of the inquest on relatives of suicides. *British Journal of Psychiatry*, **131,**400-4.

Barrett, T.W., & Scott, T.B. (1989) Development of the Grief Experience Questionnaire. *Suicide and Life-threatening Behavior*, **19,** 201-15.

Barrett, T.W., & Scott, T.B. (1990) Suicide bereavement and recovery patterns compared with nonsuicide bereavement patterns. *Suicide and Life-threatening Behavior*, **20,**1-15.

Batchelor, I.R.C., & Napier, M.B. (1953) Attempted suicide in old age. *British Medical Journal*, **ii,** 1186-90.

Bean, P. (1973) Accidental and intentional self-poisoning in the over-60 age group. *Gerontologica Clinica*, **15,** 259-67.

Beautrais, A.L. (2002) A case control study of suicide and attempted suicide in older adults. *Suicide and Life- threatening Behavior*, **32,**1-9.

Bharucha, A.J., & Satlin, A. (1997) Late-life suicide: a review. *Harvard Review of Psychiatry*, **5**, 55-65.

Biddle, L. (2003) Public hazards or private tragedies? An exploratory study of the effect of coroners' procedures on those bereaved by suicide. *Social Science and Medicine*, **56**, 1033-1045.

Bille-Brahe, U. (2000) Sociology and suicidal behaviour. In: Hawton, K., & van Heeringen, K., eds. *The international handbook of suicide and attempted suicide*. Chichester: Wiley & Sons.

Boardman, A.P., Grimbaldeston, A.H., Handley, C., Jones, P.W., & Wilmott, S. (1999) The North Staffordshire Suicide Study: a case-control study of suicide in one health district. *Psychological Medicine*, **29**, 27-33.

Bowler, C., Boyle, A., Branford, M., Cooper, S., Harper, R., & Lindesay, J. (1994) Detection of psychiatric disorders in elderly medical inpatients. *Age and Ageing*, **23**, 307-11.

Bowlby, J. (1973) Separation: anxiety and anger. In: *Attachment and loss*, Vol. 2. London: Hogarth Press.

Boyle, F.M., Najman, J.M.,Vance, J.C.,& Thearle, M.J. (1996) Estimating nonparticipation bias in a longitudinal study of bereavement. *Australian and New Zealand Journal of Public Health*, **20**, 483-7.

Bracken, P.J., Greenslade, L., Griffin, B., & Smyth, M. (1998) Mental health and ethnicity: an Irish dimension. *British Journal of Psychiatry*, **172**, 103-5.

Brent, D.A., Perper, J.A., Moritz, G., Allman, C.J., Roth, C., Schweers, J, & Balach, L. (1993)a The validity of diagnoses obtained through the psychological autopsy procedure in adolescent suicide victims: use of a family history. *Acta Psychiatrica Scandinavica*, **87**, 118-22.

Brent, D.A., Perper, J.A., Moritz, G., Allman, C., Friend, A., Roth, C., Schweers, J., Balach, L., & Baugher, M. (1993)b Psychiatric risk factors for adolescent suicide : a case-control study. *Journal of the American Academy of Child and Adolescent Psychiatry*, **32**, 521-9.

Brent, D.A., Perper, J.A., Moritz, G., Liotus, L., Richardson, D., Canobbio, R., Schweers, J., & Roth, C. (1995) Posttraumatic stress disorder in peers of adolescent suicide victims: predisposing factors and phenomenology. *Journal of the American Academy of Child and Adolescent Psychiatry*, **34**, 209-15.

Breslow, N.E., & Day, N.E. (1980) *Statistical Methods in Cancer Research. Volume 1 -The analysis of case-control studies.* Lyon: IARC.

Brown, G.W., Sklair, F., Harris, T.O., & Birley, J.L.T. (1973) Life events and psychiatric disorders; Part I: some methodological issues. *Psychological Medicine*, **3**, 74-87.

Brown, M., & Barraclough, B. (1997) Epidemiology of suicide pacts in England and Wales, 1988 -1992. *British Medical Journal*, **315**, 286-7.

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**, 1-6.

Bunch, J.M. (1972) Recent bereavement in relation to suicide. *Journal of Psychosomatic Research*, **16**, 361-6.

Bunting, J., & Kelly, S. (1998) Geographic variations in suicide mortality, 1982-96. *Population Trends*, **93**, 7-18.

Burvill, P.W. (1995) Suicide in the multiethnic elderly population of Australia, 1979-1990. *International Psychogeriatrics*, **7**, 319-33.

Byrne G.J.A., Raphael, B. (1994) A longitudinal study of bereavement phenomena in recently widowed elderly men. *Psychological Medicine*, **24**, 411-21.

Cain, A., & Fast, I. (1966)a The legacy of suicide: observations on the pathogenic impact of suicide upon marital partners. *Psychiatry*, **29**, 406-11.

Cain, A., & Fast, I. (1966)b Children's disturbed reactions to parental suicide. *American Journal of Orthopsychiatry*, **36**, 873-80.

Caine, E.D., Lyness, J.M., & Conwell, Y. (1996) Diagnosis of late-life depression : preliminary studies in primary care settings. *American Journal of Geriatric Psychiatry*, **4** (suppl. 1), 545-50.

Calhoun, I.G., & Allen, B.G. (1991) Social reactions to the survivor of suicide in the family: a review of the literature. *Omega*, **32**, 95-107.

Cantor, C.H., Leenaars, A.A., Lester, D., Slater, P.J., Wolanowski, A.M., & O'Toole, B. (1996) Suicide trends in eight predominantly English-speaking countries. *Social Psychiatry and Psychiatric Epidemiology*, **31**, 364-73.

Cantor, C.H. (2000) Suicide in the Western World. In: Hawton, K., & van Heeringen, K., eds. *The international handbook of suicide and attempted suicide*. Chichester: Wiley & sons.

Carney, S.S., Rich, C.L., Burke, P.A., & Fowler, R.C. (1994) Suicide over 60 : The San Diego study. *Journal of the American Geriatrics Society*, **42**, 174-180.

Cattell, H.R. (1988) Elderly suicide in London : an analysis of coroners' inquests. *International Journal of Geriatric Psychiatry*, 3, 251-61.

Cattell, H., & Jolley, D.J. (1995) One hundred cases of suicide in elderly people. *British Journal of Psychiatry*, 166, 451-7.

Cerel, J., Fristad, M.A., Weller, D.B., & Weller, R.A. (1999) Suicide-bereaved children and adolescents: a controlled longitudinal examination. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 672-9.

Cerel, J., Fristad, M.A., Weller, E.B., & Weller, R.A. (2000) Suicide-bereaved children and adolescents: II. Parental and family functioning. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 437-44.

Cheng, A.T.A. (1995) Mental illness and suicide: a case-control study in East Taiwan. *Archives of General Psychiatry*, 52, 594-603.

Clark, D.C. & Horton-Deutsch, S.L. (1992). Assessment in absentia: the value of the psychological autopsy method for studying antecedents of suicide and predicting future suicides. In: Maris, R., Berman, A., Maltsberger, J.T, eds. *Assessment and prediction of suicide*. New York: Guilford.

Clark, S.E., Jones, H.E.,Quinn, K.,Goldney, R.D., & Cooling, P. (1993) A support group of people bereaved through suicide. *Crisis*, 14,161-6.

Clark, S.E., & Goldney, R.D. (2000). The impact of suicide on relatives and friends. In: Hawton, K., van Heeringen, K, eds. *The international handbook of suicide and attempted suicide*. Chichester: Wiley & Sons.

Cleiren, M.P.H.D. (1993) *Bereavement and adaption. A comparative study of the aftermath of death.* Washington, D.C: Hemisphere.

Cleiren, M.P.H.D., Diekstra, R.F.W., Kerkhof, A.J.F.M., & Van der Wal, J. (1994) Mode of death and kinship in bereavement: focusing on the "who" rather than "how". *Crisis*, **15**, 22-36.

Conner, K.R., Duberstein, P.R., & Conwell, Y. (2001)a The validity of proxy-based data in suicide research: a study of patients 50 years of age and older who attempted suicide. I. Psychiatric diagnoses. *Acta Psychiatricia Scandinavica*, **104**, 204-9.

Conner, K.R., Conwell, Y., & Duberstein, P.R.(2001)b The validity of proxy-based data in suicide research: a study of patients 50 years old and over who attempted suicide. II. Life events, social support, and suicidal behavior. *Acta Psychiatrica Scandinavica*, **104**, 452-7.

Conwell, Y. (1995)a Elder abuse - a risk factor for suicide ? *Crisis*, **16**, 104-5.

Conwell, Y. (1995)b Dementia. *Crisis*, **16**, 5-6.

Conwell, Y., & Caine, E.D. (1991) Rational suicide and the right to die: reality and myth. *New England Journal of Medicine*, **325**, 1100-3.

Conwell, Y., Rotenberg, M., & Caine, E.D. (1990)a Completed suicide at age 50 and over. *Journal of the American Geriatrics Society*, **38**, 640-4.

Conwell, Y., Caine, E.D., & Olsen, K. (1990)b Suicide and cancer in late life. *Hospital and Community Psychiatry*, **41**, 1334-9.

Conwell, Y., Olsen, D., Caine, E.D., & Flannery, C.(1991) Suicide in later life: psychological autopsy findings. *International Psychogeriatrics*, **3**, 59-66.

Conwell, Y., Raby, W.N., & Caine, E.D. (1995) Suicide and aging II : the psychobiological interface. *International Psychogeriatrics*, **7**, 165-81.

Conwell, Y., Duberstein, P.R., Cox, C., Herrmann, J., Forbes, N.T., & Caine, E.D. (1996) Relationships of age and axis I diagnoses in victims of completed suicide : a psychological autopsy study. *American Journal of Psychiatry*, **153**, 1001-1008.

Conwell, Y. (1997) Management of suicidal behavior in the elderly. *The Psychiatric Clinics of North America*, **20**, 667-83.

Conwell, Y., Lyness, J.M., Duberstein, P., Cox, C., Seidlitz, L., DiGiorgio, A., &

Caine, E. (2000) Completed suicide among older patients in primary care practices: a

controlled study. *Journal of the American Geriatrics Society*, **48**, 23-9.

Copeland, J.R.M., Davidson, I.A., Dewey, M.E., Gilmore, C., Larkin, B., &

McWilliam, C. (1992) Alzheimer's disease, other dementias, depression and pseudo-

dementia; incidence and three-year outcome in Liverpool. *British Journal of*

Psychiatry, **161**, 230-9.

Crawford, M.J., Prince, M., Menezes, P., & Mann, A.H. (1998). The recognition and

treatment of depression in older people in primary care. *International Journal of*

Geriatric Psychiatry, **13**, 172-6.

Cytel Software Corporation. (1997) *Egret: Reference Manual*, Cambridge, MA: Cytel

Software Corporation.

De Hert, M., & Peuskens, J. (2000) Psychiatric aspects of suicidal behaviour:

schizophrenia. In: Hawton, K., & van Heeringen, K, eds. *The international handbook*

of suicide and attempted suicide. Chichester:Wiley & Sons.

De Leo, D. (1997) Suicide in late life at the end of the 1990's : A less neglected topic?

Crisis, **18**, 51-2.

De Leo, D., & Ormskerk, S.C.R. (1991) Suicide in the elderly: general characteristics. *Crisis*, **12**, 3-17.

De Leo, D., Carollo, G., & Dello Buono, M. (1995) Lower suicide rates associated with a Tele-help/Tele-check service for the elderly at home. *American Journal of Psychiatry*, **152**, 632-4.

De Leo, D., Padoani, W., Scocco, P., Lie, D., Bille-Brahe, U., Arensman, E., Hjelmeland, H., Crepet, P., Haring, C., Hawton, K., Lönnqvist, J., Michel, K., Pommereau, X., Querejeta, I., Phillipe, J., Salander-Renberg, E., Schmidtke, A., Fricke, S., Weinacker, B., Temesvary, B., Wasserman, D., & Faria, S. (2001). Attempted and completed suicide in older subjects : results from the WHO/EURO multicentre study of suicidal behaviour. *International Journal of Geriatric Psychiatry*, **16**, 300-10.

De Leo, D., Dello Buono, M., & Dwyer, J. (2002). Suicide among the elderly: the long-term impact of a telelphone support and assessment interevention service in northern Italy. *British Journal of Psychiatry*, **181**, 226-9.

Demi, A.S. (1984) Social adjustment of widows after a sudden death: suicide and non-suicide survivors compared. *Death Education*, **8** (Suppl.), 91-111.

Dennis, M.J., & Lindesay, J. (1995) Suicide in the elderly : the United Kingdom perspective. *International Psychogeriatrics*, **7**, 263-74.

Department of Health. (1992). *The health of the nation: a strategy for health in England*. London: HMSO.

Department of Health. (1999a). *Saving lives: our healthier nation*. London: The Stationery Office.

Department of Health. (1999b). *National Service Framework for mental health*. London: Department of Health.

Department of Health. (2001a). *National Service Framework for older people*. London: Department of Health.

Department of Health. (2001b). *Safety first: National Confidential Inquiry into suicide and homicide by people with a mental illness*. London: Department of Health.

Department of Health. (2002). *National Suicide Prevention Strategy for England*. London: Department of Health.

Draper, B. (1995) Prevention of suicide in old age. *Medical Journal of Australia*, **162**, 533-4.

Draper, B. (1996) Attempted suicide in old age. *International Journal of Geriatric Psychiatry*, **11**, 577-87.

Draper, B., MacCuspie-Moore, C., & Brodaty, H. (1998) Suicidal ideation and the 'wish to die' in dementia patients: the role of depression. *Age and Ageing*, **27**, 503-7.

Draper, B., Brodaty, H., Low, L.F., Richards, V., Paton, H., & Lie, D. (2002). Self-destructive behaviors in nursing home residents. *Journal of the American Geriatrics Society*, **50**, 354-8.

Duberstein, P.R., Conwell, Y., & Caine, E.D. (1994) Age differences in the personality characteristics of suicide completers: preliminary findings from a psychological autopsy study. *Psychiatry*, **57**, 213-24.

Duberstein, P.R. (1995) Openness to experience and completed suicide across the second half of life. *International Psychogeriatrics*, **7**, 183-98.

Duberstein, P.R., Conwell, Y., & Cox, C. (1998) Suicide in widowed persons: a psychological autopsy comparison of recently and remotely bereaved older subjects. (1998) *American Journal of Geriatric Psychiatry*, **6**, 328-34.

Duckworth, G., & McBride, H. (1996) Suicide in old age : a tragedy of neglect. *Canadian Journal of Psychiatry*, **41**, 217-22.

Dunn, R.G., & Morrish-Vidners, D. (1987-8) The psychological and social experiences of suicide survivors. *Omega*, **18**,175-215.

Dunne, E.J. (1992) Following a suicide: postvention. In: Bongar, B, ed. *Suicide: guidelines for assessment, management, and treatment.* New York: Oxford University Press.

Durkheim, E. (1897) *Suicide* (translated by J.A. Spaulding & G. Simpson). New York: Free Press of Glencoe.

Evans, M., & Mottram, P. (2000). Diagnosis of depression in elderly patients. *Advances in Psychiatric Treatment,* **6,** 49-56.

Farberow, N.L., Gallagher, D.E., Gilewski, M,J.,& Thompson, L.W. (1987) An examination of the early impact of bereavement on psychological distress in survivors of suicide. *Gerontologist,* **27,** 592-8.

Farberow, N.L., Gallagher-Thompson, D., Gilewski, M., & Thompson, L. (1992)a Changes in grief and mental health of bereaved spouses of older suicides. *Journal of Gerontology;* **47,** P357-66.

Farberow, N.L., Gallagher-Thompson, D., Gilewski, M.,& Thompson, L. (1992)b The role of social supports in the bereavement process of surviving spouses of suicide and natural deaths. *Suicide and Life-threatening Behaviour;* **22,** 107-24.

Forsell, Y., Jorm, A.F., & Winblad, B. (1997) Suicidal thoughts and associated factors in an elderly population. *Acta Psychiatrica Scandinavica*, **95**, 108-11.

Foster, T., Gillespie, K., & McLelland, R. (1997) Mental disorders and suicide in Northern Ireland. *British Journal of Psychiatry*, **170**, 447-52.

Grabbe, L., Demi, A., Camann, M.A., & Potter, L. (1997) The health status of elderly persons in the last year of life : a comparison of deaths by suicide, injury, and natural causes. *American Journal of Public Health*, **87**, 434-7.

Gunnell, D., & Frankel, S. (1994) Prevention of suicide: aspirations and evidence. *British Medical Journal*, **308**, 1227-33.

Harris, E.C., & Barraclough, B.M. (1994) Suicide as an outcome for medical disorders. *Medicine*, **73**, 281-96.

Harris, E.C., & Barraclough, B.M. (1998) Excess mortality of mental disorder. *British Journal of Psychiatry*, **173**, 11-53.

Hatton, C.L & Valente, S.M. (1981) Bereavement group for parents who suffered a suicidal loss of a child. *Suicide and life-threatening behaviour*, **11**, 141-50.

Hawton, K., Appleby, L., Platt, S., Foster, T., Cooper, J., Malmberg, A., & Simkin, S. (1998)a The psychological autopsy approach to studying suicide: a review of methodological issues. *Journal of Affective Disorders*, **50**, 269-76.

Hawton, K., Simkin, S., Fagg, J., & Harriss, L. (1998)b *Suicide and stress in farmers*. London: The Stationery Office.

Hawton, K., Arensman, E., Townsend, E., Bremner, S., Feldman E., Goldney, R., Gunnell, D., Hazell, P., van Heeringen, K., House, A., Owens., & Sakinofsky, I. (1998)c Deliberate self-harm: systematic review of efficacy of psychosocial and pharmacological treatments in preventing repetition. *British Medical Journal*, **317**, 441-7.

Hawton, K., Houston, K., & Shepperd, R. (1999) Suicide in young people under 25 years of age: a study of 174 cases based on coroners' and medical records. *British Journal of Psychiatry*, **175**, 1-6.

Hawton, K., Townsend, E., Deeks, J., Appleby, L., Gunnell, D., Bennewith, O., & Cooper, J. (2001) Effects of legislation restricting pack sizes of paracetamol and salicylates on self-poisoning in the United Kingdom: before and after study. *British Medical Journal*, **322**, 1203-7.

Hawton, K., Simkin, S., Rue, J., Haw, C., Barbour, A., Clements, A., Sakarovitch, C.,& Deeks, J. (2002) Suicide in female nurses in England and Wales. *Psychological Medicine*, **32**, 239-50.

Hawton, K., Houston, K., Malmberg, A., & Simkin, S. (2003) Psychological autopsy interviews in suicide research: the reactions of informants. *Archives of Suicide Research*, **7**, 73-82.

Heard, H.L. (2000) Psychotherapeutic approaches to suicidal ideation. In: Hawton, K., van Heeringen, K., eds. *The international handbook of suicide and attempted suicide*. Chichester: Wiley and Sons.

Hendin, H., & Haas, A.P (1991) Suicide and guilt as manifestations of PTSD in Vietnam combat veterans. *American Journal of Psychiatry*, **148**, 586-91.

Heikkinen, M.E., Aro, H., & Lönnqvist, J. (1992) The partners' views on precipitant stressors in suicide. *Acta Psychiatrica Scandinavica*, **85**, 380-4.

Heikkinen, M.E., & Lönnqvist, J.K. (1995) Recent life events in elderly suicide : a nationwide study in Finland. *International Psychogeriatrics*, **7**, 287-300.

Henriksson, M.M., Marttunen, M.J., Isometsä, E.T., Heikkinen, M.E., Aro, H.M., Kuoppasalmi, K.I., & Lönnqvist, J.K. (1995) Mental disorders in elderly suicide. *International Psychogeriatrics*, **7**, 275-86.

Henry, J.A., Alexander, C.A., & Sener, E.K. (1995) Relative mortality from overdose of antidepressants. *British Medical Journal*, **310**, 221-4.

Hepple, J., & Quinton, C. (1997) One hundred cases of attempted suicide in the elderly. *British Journal of Psychiatry*, **171**, 42-6.

Hill, K., Hawton, K., Malmberg, A., & Simkin, S., (1997). *Bereavement Information Pack: for those bereaved through suicide or other sudden death*. London: Royal College of Psychiatrists.

Ho, S.F., O'Mahony, S., Steward, J.A., Breay, P., Buchalter, M., & Burr, M.L. (2001) (2001) Dyspnoea and quality of life in older people at home. *Age and Ageing*, **30**,155-9.

Holmes T., & Rahe, R.H. (1967) The social adjustment rating scale. *Journal of Psychosomatic Research*, **11**, 213-8.

Horton-Deutsch, S.L., Clark, D.C., & Farran, C.J. (1992) Chronic dyspnea and suicide in elderly men. *Hospital and Community Psychiatry*, **43**, 1198-203.

Houston, K., Hawton, K., & Shepperd, (2001) Suicide in young people aged 15-24: a psychological autopsy study. *Journal of Affective Disorders*, **63**, 159-70.

Hoxey, K., & Shah, A. (2000). Recent trends in elderly suicide rates in England and Wales. *International Journal of Geriatric Psychiatry*, **15**, 274-9.

Humphry, D. (1992) Rational suicide among the elderly. *Suicide and Life-threatening Behavior*, **22**, 125-9.

Jenkins, D., & MacDonald, A. (1994) Should general practitioners refer more of their elderly depressed patients to psychiatric services? *International Journal of Geriatric Psychiatry*, **9**, 461-5.

Jones, B.N. (2002). Suicide among the elderly: the promise of telecommunications. *British Journal of Psychiatry*, **181**, 191-2.

Jones, J.S., Stanley, B., Mann, J.J., Frances, A.J., Guido, J.R., Träskman-Bendz, L., Winchel, R., Brown, R.P., & Stanley, M. (1990) CSF 5-HIAA and HVA concentrations in elderly depressed patients who attempted suicide. *American Journal of Psychiatry*, **147**, 1225-7.

Jordan, J.R. (2001) Is suicide bereavement different? A reassessment of the literature. *Suicide and Life-threatening Behavior*, **31**, 91-102.

Jorm, A.F. (1994) A short form of the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE): development and cross-validation. *Psychological Medicine*, **24**, 145-53.

Jorm, A.F., Henderson, A.S., Scott, R., Korten, A.E., Christensen, H., & Mackinnon, A.J. (1995) Factors associated with the wish to die in elderly people. *Age and Ageing.* 24, 389-92.

Kaplan, M.S., Adamek, M.E., & Geling, O. (1996) Sociodemographic predictors of firearm suicide among older white males. *Gerontologist,* 36, 530-3.

Kaplan, M.S., Adamek, M.E., Geling, O., & Calderon, A. (1997) Firearm suicide among older women in the US. *Social Science and Medicine,* 44, 1427-30.

Kaprio, J., Koskenvuo, M., & Rita, H. (1987) Mortality after bereavement: a prospective study of 95,647 widowed persons. *American Journal of Public Health,* 77, 283-7.

Kelly, T.M., & Mann, J.J. (1996) Validity of DSM-IIIR diagnosis by psychological autopsy: a comparison with clinician ante-mortem diagnosis. *Acta Psychiatrica Scandinavica,* 94, 337-43.

Kelly, S., & Bunting, J. (1998). Trends in suicide in England and Wales, 1982-1996. *Population Trends,* 92, 29-41.

Kennedy, G.L., Kelman, H.R., & Thomas, C. (1990) The emergence of depressive symptoms in later life: the importance of declining health and increasing disability. *Journal of Community Health*, **15**, 93-103.

Kirby, M., Bruce, I., Radic, A., Coakley, D., & Lawlor, B.A. (1997) Hopelessness and suicidal feelings among the community dwelling elderly in Dublin. *Irish Journal of Psychological Medicine*, **14**, 124-7.

Kitson, G.C. (2000) Adjustment to violent and natural deaths in later and earlier life for black and white widows. *Journal of Gerontology*, **55**, S341-51.

Kovarsky, R.S. (1989) Loneliness and disturbed grief:a comparison of parents who lost a child to suicide or accidental death. *Archives of Psychiatric Nursing*, **3**, 86-96.

Lee, K.A., Vaillant, G.E., Torrey, W.C., & Elder, G.H. (1995) A 50-year prospective study of the psychological sequelae of World War II combat. *American Journal of Psychiatry*, **152**, 516-22.

Lesage, A.D., Boyer, R., Grunberg, F., Vanier, C., Morissette, R., Menard-Buteau, C., & Loyer, M. (1994) Suicide and mental disorders: a case control study of young men. *American Journal of Psychiatry*, **151**, 1063-8.

Lewis, G., Hawton, K., & Jones, P. (1997) Strategies for preventing suicide. *British Journal of Psychiatry*, **171**, 351-4.

Li, G (1995) The interaction effect of bereavement and sex on the risk of suicide in the elderly : an historical cohort study. *Social Science and Medicine*, **40**, 825-828.

Lindemann, E. (1944) The symptomatology and management of acute grief. *American Journal of Psychiatry*, **101**, 141.

Linden, M., & Barnow, S. (1997) The wish to die in very old persons near the end of life: a psychiatric problem ? Results from the Berlin aging study. *International Psychogeriatrics*, **9**, 291-307.

Lindesay, J. (1986) Trends in self-poisoning in the elderly 1974-1983. *International Journal of Geriatric Psychiatry*, **1**, 37-43.

Lindesay, J. (1991) Suicide in the Elderly. *International Journal of Geriatric Psychiatry*, **6**, 355-61.

Linsley, K.R., Schapira, K, & Kelly, T.P. (2001) Open verdict v suicide-importance to research. *British Journal of Psychiatry*, **178**, 465-8.

Lönnqvist., J.K. (2000) Psychiatric aspects of suicidal behaviour:depression. In: Hawton., K., & van Heeringen, K. *The international handbook of suicide and attempted suicide.* Chichester:Wiley & Sons.

Loebel, J.P., Loebel, J.S., Dager, S.R., Centerwall, B.S., & Reay, D.T. (1991) Anticipation of nursing home placement may be a precipitant of suicide among the elderly. *Journal of the American Geriatrics Society*, **39**, 407-8.

Lyness, J.M., Conwell, Y., & Nelson, J.C. (1992) Suicide attempts in elderly psychiatric inpatients. *Journal of the American Geriatrics Society*, **40**, 320-4.

McClure, G.M.G. (2000). Changes in suicide in England and Wales, 1960-1997. *British Journal of Psychiatry*, **176**, 64-7.

McMahon, B., & Pugh, R.F. (1965) Suicide in the widowed. *American Journal of Epidemiology*, **81**, 23-31.

McIntosh, J.L. (1992) Older adults: the next suicide epidemic? *Suicide and Life-threatening Behavior*, **22**, 322-32.

McIntosh, J.L. (1993) Control group studies of suicide survivors: a review and critique. *Suicide and Life-threatening Behavior*, **23**, 146-61.

McIntosh, J.L. (1996) Survivors of suicide: a comprehensive bibliography update. *Omega*, **33**, 147-75.

Margo, G., & Finkel, J.A. (1990) Early dementia as a risk factor for suicide. *Hospital and Community Psychiatry*, **41**, 676-8.

Mathews, P., & Foreman, J. (1993). *Jervis on Coroners* (11th edition). London: Sweet and Maxwell.

Merrill, J., & Owens, J. (1990). Age and attempted suicide. *Acta Psychiatrica Scandinavica*, **82**, 385-8.

Michel, K., & Valach, L. (1992) Suicide prevention: spreading the gospel to general practitioners. *British Journal of Psychiatry*, **160**, 757-60.

Middleton, W., Burnett, P., Raphael, B., & Martinek, N. (1996) The bereavement response: a cluster analysis. *British Journal of Psychiatry*, **169**,167-71.

Miles, M.S., & Demi, A.S. (1991) A comparison of guilt in bereaved parents whose children died by suicide, accident, or chronic disease. *Omega*, **24**, 203-15.

Miller, M. (1979) Suicide after sixty: the final alternative. New York; Springer Publishing Company.

Miller. M. (1978) Geriatric suicide : The Arizona study. *Gerontologist*, **18**, 488-495.

Mitchell, A., & House, A. (2000) *Adjustment to illness, handicap, and bereavement.* In: Gelder, M.G., Lopez-Ibór, J.J., & Andreasen, N, eds. The New Oxford Textbook of Psychiatry. Oxford: Oxford University Press.

Modestin, J. (1989) Completed suicide in psychogeriatric inpatients. *International Journal of Geriatric Psychiatry,* 4, 209-14.

Montgomery, S.A., & Åsberg, M. (1979). A new depression scale designed to be sensitive to change. *British Journal of Psychiatry,* 134, 382-9.

Moore, S.L. (1997) A phenomenological study of meaning in life in suicidal older adults. *Archives of Psychiatric Nursing,* 11, 29-36.

Moscicki, E.K. (1995) Epidemiology of suicide. *International Psychogeriatrics,* 7, 137-48.

Mottram, P., Wilson, K., & Copeland, J. (2000) Validation of the Hamilton Depression Rating Scale and the Montgomery and Asberg Rating Scales in terms of AGECAT depression cases. *International Journal of Geriatric Psychiatry,* 15, 1113-9.

Murphy, E., Lindesay, J., & Grundy, E. (1986) 60 years of suicide in England and Wales: a cohort study. *Archives of General Psychiatry,* 43, 969-76.

Neeleman, J., & Wessely, S.(1997). Changes in classification of suicide in England and Wales: time trends and associations with professional backgrounds. *Psychological Medicine*, **27**, 467-72.

Nelson, F.L., & Farberow, N.L. (1980) Indirect self-destructive behavior in the elderly nursing home patient. *Journal of Gerontology*, **35**, 949-57.

Ness, D.E., & Pfeffer, C.R.(1990) Sequelae of bereavement resulting from suicide. *American Journal of Psychiatry*, **147**, 279-85.

Nowers, M. (1993) Deliberate self-harm in the elderly : a survey of one London borough. *International Journal of Geriatric Psychiatry*, **8**, 609-14.

Nowers, M., & Irish, M. (1988) Trends in the reported rates of suicide by self poisoning in the elderly. *Journal of the Royal College of General Practitioners*, **38**, 67-9.

O'Donnell, I., & Farmer, R. (1995). The limitations of official suicide statistics. *British Journal of Psychiatry*, **166**, 458-61.

Office of Populations Censuses and Surveys. (1993) *1991 Census: county reports for Berkshire, Buckinghamshire, Northamptonshire, Oxfordshire, and West Midlands.* London: HMSO.

Onwuteaka-Philipsen, B.D., Muller, M.T., & van der Wal, G. (1997) Euthanasia and old age. *Age and Ageing*, **26**, 487-92.

Osgood, N.J., Brant, B.A., & Lipman, A. (1991) Suicide among the elderly in long-term care facilities. Greenwood Press, New York.

Ovenstone, I.M.K.,& Kreitman, N. (1974). Two syndromes of suicide. *British Journal of Psychiatry*, **124**, 336-45.

Parkes, C.M. (1998) Bereavement: studies of grief in adult life. 3rd edition. Harmondsworth: Pelican.

Parkes, C.M., & Weiss, R.S, (1983) *Recovery from bereavement*. New York:Basic Books.

Paykel, E.S., Myers, J.K., Lindenthal, J.J., & Tanner, J. (1974) Suicidal feelings in the general population: a prevalence study. *British Journal of Psychiatry*, **124**, 460-9.

Paykel, E.S.,& Priest, R.G. (1992) Recognition and management of depression in general practice: consensus statement. *British Medical Journal*, **305**, 1198-202.

Pierce, D. (1987) Deliberate self-harm in the elderly. *International Journal of Geriatric Psychiatry*, **2**, 105-10.

Pierce, D.W. (1996) Repeated deliberate self-harm in the elderly. *International Journal of Geriatric Psychiatry*, **11**, 983-6.

Pirkis, J.,& Burgess, B.(1998) Suicide and recency of health care contacts: a systematic review. *British Journal of Psychiatry*, **173**, 462-74.

Po, A.L.W., & Zhang, W.Y. (1997) Systematic overview of co-proxamol in order to assess analgesic effects of addition of dextropropoxyphene to paracetamol. *British Medical Journal*, **315**, 1565-71.

Post, S.G. (1997) Physician-assisted suicide in Alzheimer's disease. *Journal of the American Geriatrics Society*, **45**, 647-51.

Prigerson, H.G., Frank, E., Kasl, S.V., Reynolds, C.F., 3rd, Anderson, B., Zubenko G.S., Houck, P.R., George, C.J., & Kupfer, D.J. (1995). Complicated grief and bereavement-related depression as distinct disorders: preliminary empirical validation in elderly bereaved spouses. *American Journal of Psychiatry*; **152**, 22-30.

Prigerson, H,G., Bierhals, A.J., Kasl, S.V., Reynolds C.F., 3rd, Shear M.K., Newsom, J,T., & Jacobs, S. (1996). Complicated grief as a disorder distinct from bereavement-related depression and anxiety: a replication study. *American Journal of Psychiatry*, **153**, 1484-6.

Prince M.J., Harwood, R.H., Thomas, A., & Mann, A.H. (1998) A prospective

population-based cohort study of the effects of disablement and social milieu on the

onset and maintenance of late-life depression. The Gospel Oak Project VII.

Psychological Medicine, **28**, 337-50.

Pritchard, C.(1995) *Suicide- the ultimate rejection.* Buckingham: Open University

Press.

Pritchard, C. (1996). New patterns of suicide by age and gender in the United

Kingdom and the Western World 1974-1992; an indicator of social change? *Social*

Psychiatry and Psychiatric Epidemiology, **31**, 227-34.

Purcell, D., Thrush, C.R.N., & Blanchette, P.L. (1999) Suicide among the elderly in

Honolulu county: a multiethnic comparative study (1987-1992). *International*

Psychogeriatrics, **11**, 57-66.

Raleigh, V.S., & Balarajan, R, (1992) Suicide levels and trends among immigrants in

England and Wales. *Health Trends*, **24**, 91-4.

Range, L.M, & Calhoun, L.G. (1990) responses following suicide and other types of

death: the perspective of the bereaved. *Omega*, **21**, 311-20.

Rao, R., Dening, T., Brayne, C., & Huppert, F.A. (1997) Suicidal thinking in community residents over eighty. *International Journal of Geriatric Psychiatry*, **12**, 337-43.

Reed, M.D., & Greenwald, J.Y. (1991) Survivor-victim status, attachment and sudden death bereavement. *Suicide and Life-threatening Behavior*, **21**, 385-401.

Reynolds, F.M.T.,& Berman, A.L. (1995). An empirical typology of suicide. *Archives of Suicide Research*, **1**, 97-109.

Reynolds, C,F 3rd, Miller M,D., Pasternak, R.E., Frank, E., Perel, J.M., Cornes, C *et al.* (1999) Treatment of bereavement-related major depressive episodes in later life: a controlled study of acute and continuation treatment with nortriptyline and interpersonal psychotherapy. *American Journal of Psychiatry*, **156**, 202-8.

Rifai, A.H., George, C.J., Stack, J.A., Mann, J.J., & Reynolds C.F. (1994) Hopelessness in suicide attempters after acute treatment of major depression in late life. *American Journal of Psychiatry*, **151**, 1687-90.

Rohde, K., Peskind, E.R., & Raskind, M.A. (1995) Suicide in two patients with Alzheimer's disease. *Journal of the American Geriatrics Society*, **43**, 187-9.

Roy, A. (1983) Family history of suicide. *Archives of General Psychiatry*, **40**, 971-4.

Royal College of Physicians. (1987) A great and growing evil: the medical consequences of alcohol abuse, Tavistock, London.

Royal College of Psychiatrists. (1994) Guidelines on the management of deliberate self-harm.

Rubio, A., Vestner, A.L., Stewart, J.M., Forbes, N.T., Conwell, Y., & Cox, C. (2001) Suicide and Alzheimer's pathology in the elderly: a case-control study. *Biological Psychiatry*, **49**, 137-45.

Runeson, B., & Beskow, J. (1991) Reactions of survivors of suicide victims to interviews. *Acta Psychiatrica Scandinavica*, **83**, 169-73.

Rutz, W., Van Knorring, L., & Walinder, J. (1992) Long term effects of an educational programme for general practitioners given by the Swedish Committee for prevention and treatment of depression. *Acta Psychiatrica Scandinavica*, **85**, 83-8.

Salib, E. (1997) Elderly suicide and weather conditions : is there a link ? *International Journal of Geriatric Psychiatry*, **12**, 937-941.

Salib, E., Tadros, G., & Cawley, S.(2001)a Elderly suicide and attempted suicide: one syndrome. *Medical Science and Law*, **41**, 250-5.

Salib, E., Tadros, G., & Cawley, S. (2001)b History of deliberate self harm may predict methods of fatal self harm in the elderly. *Medical Science and Law*, **41**, 107-10.

Séguin, M., Lesage, A., & Kiely, M.C., (1995) Parental bereavement after suicide and accident: a comparative study. *Suicide and Life-threatening Behaviour*, 25,489-97.

Seidel, G. (1995). Suicide in the elderly in antiquity. *International Journal of Geriatric Psychiatry*, **10**, 1077-84.

Shaffer, D., Gould, M., Fisher, P., Trautman, P., Moreau, D., Kleinman, M., & Flory, M. (1996) Psychiatric diagnosis in child and adolescent suicide. *Archives of General Psychiatry*, **53**,339-48.

Shafii, M., Carrigan, S., Whittinghill, J.R. & Derrick, A. (1985) Psychological autopsy of completed suicide in children and adolescents. *American Journal of Psychiatry*, **142**, 1061-4.

Shah, A., & Ganesvaran, T. (1997) Psychogeriatric inpatient suicides in Australia. *International Journal of Geriatric Psychiatry*, **12**, 15-9.

Shah, A., & De, T. (1998) Suicide and the elderly. *International Journal of Psychiatry in Clinical Practice*, **2**, 3-17.

Shah, R., Uren, Z., Baker, R., & Majeed, A. (2002) Trends in suicide from drug overdose in the elderly in England and Wales, 1993-1999. *International Journal of Geriatric Psychiatry*, **17**, 416-21.

Shepherd, D.S. & Barraclough, B.M. (1978). Suicide reporting:information or entertainment? *British Journal of Psychiatry*, **132**, 283-7.

Shneidman, E.S. (1992). What do suicides have in common? Summary of the psychological approach. In: Bongar, B, ed. *Suicide: guidelines for assessment, management, and treatment.* New York: Oxford University Press.

Simon, R.I. (1989) Silent suicide in the elderly. *Bulletin of the American Academy of Psychiatry and the Law*, **17**, 83-95.

Skoog, I., Aevarsson, O., Beskow, J., Larsson, L., Palsson, S., Waern, M., Landahl, S., & Östling, S. (1996) Suicidal feelings in a population sample of nondemented 85 year olds. *American Journal of Psychiatry*, **153**, 1015-20.

Smith, J.C., Mercy, J.A., & Conn, J.M. (1988) Marital status and the risk of suicide. *American Journal of Public Health*, **78**, 78-80.

Snaith, R.P., Harrop, F.M., Newby, D.A., & Teale, C. (1986) Grade scores of the Montgomery-Åsberg depression and the Clinical Anxiety Scales. *British Journal of Psychiatry*, **148**, 599-601.

Spitzer, M.B., Robert, L., Gibbon, M., & Williams, J.B.W. (2002) Structured Clinical Interview for DSM-IV Axis I Disorders, Research Version. New York State Psychiatric Institiute, Biometrics Research: New York.

Stenager, E.N., Madsen, C., Stenager, E., & Boldsen, J. (1998) Suicide in patients with stroke: epidemiological study. *British Medical Journal*, 316, 1206.

Stenager, E.N., & Stenager, E. (2000) Physical illness and suicidal behaviour. In: Hawton, K., van Heeringen, K., eds. *The international handbook of suicide and attempted suicide*. Chichester: Wiley & Sons.

Szanto, K., Prigerson, H., Houck, P., Ehrenpreis, L., & Reynolds C, F. (1997) Suicidal ideation in the elderly bereaved: the role of complicated grief. *Suicide and Life-threatening Behavior*, 27, 194-204.

Taylor, S., McCracken, C.F.M., Wilson, K.C.M., & Copeland, J.R.M. (1998) Extent and appropriateness of benzodiazepine use: results form an elderly urban community. *British Journal of Psychiatry*, 173,433-8.

Ticehurst, S., Carter, G.L., Clover, K.A., Whyte, I.M., Raymond, J., & Fryer, J. (2002). *International Psychogeriatrics*, 14, 97-105.

Träskman-Bendz, L., & Mann, J.J (2000) Biological aspects of suicidal behaviour. In: Hawton, K., van Heeringen, K., eds. *The international handbook of suicide and attempted suicide*. Chichester: Wiley & Sons.

Turvey, C.L., Conwell, Y., Jones, M.P., Simonsick, E., Pearson, J.L., & Wallace, R. (2002) Risk factors for late-life suicide: a prospective, community-based study. *American Journal of Geriatric Psychiatry*, **10**, 398-406.

Tyrer, P., Alexander, J., & Ferguson, B. (1988) Personality Assessment Schedule. In: Tyrer, P, ed. *Personality Disorder: Diagnosis, Management, and Course*. London: Butterworth/Wright.

van Heeringen., K., Hawton., K., & Williams, J.M.G. (2000) Pathways to suicide: an integrative approach. In: Hawton, K., & van Heeringen., K. *The international handbook of suicide and attempted suicide*. Chichester:Wiley & Sons.

Vassilas, C.A., & Morgan, H.G. (1994) Elderly suicides' contact with their general practitioner before death. *International Journal of Geriatric Psychiatry*, **9**, 1008-9.

Waern, M., Runeson, B.S., Allebeck, P., Beskow, J., Rubenowitz, E., Skoog, I., & Wilhelmsson, K. (2002)a Mental disorder in elderly suicides: a case-control study. *American Journal of Psychiatry*, **159**, 450-5.

Waern, M., Rubenowitz, E., Runeson, B., Skoog, I., Wilhelmsson, K., & Allebeck, P. (2002)b Burden of illness and suicide in elderly people: a case-control study. *British Medical Journal*, **324**, 1355-7.

Wertheimer, A. (2001). *A special scar: the experiences of people bereaved by suicide.* London: Routledge.

Whitlock, F.A. (1978). Suicide, cancer, and depression. *British Journal of Psychiatry*, **132**, 269-74.

Williams, M. (2002). *Suicide and attempted suicide*. Harmondsworth: Penguin Books.

Williams, J.M.G., & Pollock, L.R. (2000). The psychology of suicidal behaviour. In: Hawton, K., van Heeringen, K, eds. *The international handbook of suicide and attempted suicide.* Chichester: Wiley and Sons.

Woof, W.R., & Carter, Y.H. (1997) The grieving adult and the general practitioner: a literature review in two parts (part two). *British Journal of General Practice*, **47**, 509-14.

World Health Organization. (1993) *The ICD-10 classification of mental and behavioural disorders. Diagnostic criteria for research.* Geneva: World Health Organization.

Wrobleski, A. (1984) The suicide survivors group. *Omega*, **15**, 173-84.

Younger, S.C., Clark, D.C., Oehmig-Lindroth, R., & Stein, R.J. (1990) Availability of knowledgeable informants for a psychological autopsy study of suicides committed by elderly people. *Journal of the American Geriatrics Society*, **38**, 1169-75.

Zisook, S., Chentsova-Dutton, Y., & Shuchter, S.R. (1998) PTSD following bereavement. *Annals of Clinical Psychiatry*, **10**, 157-63.

APPENDICES

APPENDIX 1

Statement of Dr Harwood's involvement in this research project and Ethics Committee approval.

Dr Harwood carried out this research whilst based at the University of Oxford Department of Psychiatry, as a full-time MRC Clinical Research Fellow and Honorary Specialist Registrar between October 1995 and September 1998. The research was funded through a Medical Research Council Project Grant awarded to Professors Keith Hawton, Tony Hope, and Robin Jacoby. The grant application was written by these three grant-holders, but Dr Harwood was directly involved in subsequent modifications to the study design, and wrote the letters for potential study participants, research questionnaires, the research protocol and Ethics Committee Application forms. He was the main investigator in the study and collected all the data for the study by visiting coroners, examining medical records and conducting all the study interviews. He coded the data, entered it onto the database, and carried out the data analysis with supervision from a statistician. He was the main author of the three research papers which arose from this study. He was supervised regularly by the three grant-holders during the study, and also received advice from his University of Nottingham Advisor, Dr Robert Jones.

The study was approved by the Oxford Psychiatric Research Ethics Committee and the Birmingham and Solihull Research Ethics Committees.

APPENDIX 2

Case vignettes of cases where a verdict other than that of suicide was returned

In order to preserve confidentiality these case vignettes are composites of several different cases and factual details have been altered.

Case 1- Open verdict, excluded from study

Mrs H was 73 year old widow with longstanding alcohol dependence and mild cognitive impairment secondary to cerebrovascular disease. Her GP noted that she was frequently intoxicated and disorientated, and had taken several previous overdoses of her medication, probably by accident. She lived in warden assisted accomodation, and was found dead in bed one morning by the warden. Post-mortem examination showed high blood alcohol levels and paracetamol levels of 36mg/l. There was no suicide note, no-one remembered her expressing any suicidal ideas, and there had been no obvious precipitant to the overdose.

Case 2- Accidental death verdict, excluded from study

Mr T was 64 year old single man with no past history of psychiatric illness or self-harm. He was last seen by his friends at a social event at a local restaurant. At the end of the evening Mr T announced he was going to walk home along the river path, and said goodbye to his friends. His body was found a few hours later at the side of the river bank by a passer-by. His family and friends reported that he had been in good

spirits with no evidence of suicidal intent. Post-mortem revealed little of note other than a high blood alcohol level.

Case 3- Open verdict, included in study

Mr Y was a 79 year old man living with his son. He was physically frail and suffered from respiratory disease and intermittent severe abdominal pain. In recent weeks his mood had become low although he had never had treatment for depression. One morning, his son found him sitting in bed clutching a handful of theophylline tablets. He told his son he had taken the pills because he could not stand the pain and could not bear to be a burden to his son any more. His son immediately phoned for an ambulance. Mr Y died in hospital later that day. Post-mortem examination confirmed that he had taken a large overdose of theophylline, and also revealed a gastric carcinoma which had not been diagnosed during life.

Case 4- Accidental death verdict, included in study

Mr G was an 80 year old man who lived with his sister. He suffered from rheumatoid arthritis and recurrent depression. He had taken four previous overdoses, all during depressive episodes, but the GP noted that these were "impulsive" acts. Mr G had a difficult relationship with his sister, and after an argument with her one morning she left the house. On her return she found her brother intoxicated with alcohol but very drowsy. She called for an ambulance but Mr G suffered a cardiac arrest in transit and resuscitation was unsuccessful. Post-mortem showed high blood levels of amitriptyline indicative of a large overdose.

APPENDIX 3

PSYCHIATRIC ILLNESS QUESTIONNAIRE

This questionnaire is divided into screening questions and detailed questions. Ask all the screening questions but only proceed to the detailed questions if there is some evidence for that particular disorder.

Sometimes when people die in this way they have been depressed or suffering from emotional problems at the time. Do you think that this is possible?   Y/N/DK
What did you see which suggests that?

Can I just check that I have all the details of his contacts with doctors about emotional problems/depression? (read out list)

MOOD SYNDROMES

Depression-screening questions

Did he seem depressed or down in the months before he died?	Y/N/DK
Did this go on for most of the day?	Y/N/DK
How long did this last for?	2wks/>2wks/ DK
Was he lacking in energy, easily tired, doing less than usual?	Y/N/DK
Had he stopped enjoying things?	Y/N/DK

Depression-detailed questions

Were there any other symptoms, for example

Loss of self- confidence?	Y/N/DK
Too little or excessive sleep?	Y/N/DK
Change in appetite?	Y/N/DK
Loss or gain in weight?	Y/N/DK
Moving or speaking slower than usual?	Y/N/DK
Being fidgety, restless, pacing, wringing hands?	Y/N/DK
Difficulty concentrating and making decisions?	Y/N/DK
Feeling worthless or guilty?	Y/N/DK

Did he talk about the possibility of taking his life during this time?	Y/N/DK
When did this depression start?	
How long did it go on for?	
Did he have any treatment for this depression?	Y/N/DK

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Did he drink heavily or use drugs during this time?   Y/N/DK
If he did, do you know which came first, the depression
or the alcohol/drugs?
Did he complain a lot about physical symptoms such as constipation, tiredness,
aches and pains?   Y/N/DK

During this time did he mention anything which seemed
odd, for example hearing voices or seeing visions?   Y/N/DK
Can you describe what he mentioned?
Did he believe that he had done something wrong, for example committing a crime,
which he had in fact not done?   Y/N/DK
Did he think that anyone wanted to harm him?   Y/N/DK
Did he believe that any parts of his body had stopped
working?   Y/N/DK
Psychotic symptoms present   Y/N/DK

Mood congruent?   Y/N
(If not consider schizoaffective disorder)

Did X ever suffer from depression in the past?   Y/N/DK
Do you know roughly when?
Were these episodes similar to this one?   Y/N/DK
If not how were they different?
Were there any times in the past when he seemed high, unusually
energetic, overactive?   Y/N/DK
(For each episode try to establish degree of impairment)
What treatment did he have for these episodes?

Dysthymia-screening question

There are different types of depression. The type of depression where people feel down
all day for weeks at a time does not affect everyone who gets depressed. Sometimes
people can be miserable more days than not, with good days and bad days but do not
stay low for weeks at a time. Do you think this applies to X?   Y/N/DK

Dysthymia-detailed questions

Would you have described him as depressed and miserable more days than not but
without a period of two weeks when he was down all the time?   Y/N/DK
How long did this go on? Was it as long as two years?   <2y/>2y/DK
During that two years did he ever cheer up for more than a couple of months?
         Y/N/DK

*(Clarify chronology. use previous questions to assess the role of drug and alcohol use
and physical illness).*

Manic syndrome-screening questions

In the month before he died did he seem to be unusually cheerful, high, on top of the world?   Y/N/DK
Was there a time when he was so irritable he would shout at people or start fights or arguments?   Y/N/DK

Can you describe what he was like?

Manic syndrome-detailed questions

When did this start?
How long did it last?
Did he have any other symptoms like
Feeling he had special abilities or powers?   Y/N/DK
Believing he could accomplish great things?   Y/N/DK
Being more talkative than usual?   Y/N/DK
Jumping from one idea to another?   Y/N/DK
Decreased need for sleep?   Y/N/DK
Easily distracted?   Y/N/DK
Involved in many activities, more active at work or socially than usual?

                                                                                         Y/N/DK
Poor judgement such as spending a lot of money or going
into bad financial deals?   Y/N/DK

How did this affect him, did it interfere with his work or social life?

Did he need to take time off work?   Y/N/DK
Was he admitted to hospital?   Y/N/DK
Was he using drugs or drinking heavily before this
started?   Y/N/DK
Had episodes like this ever happened before?   Y/N/DK

Do you know when?
What age was he when the first episode happened?

SCHIZOPHRENIA/SCHIZOAFFECTIVE DISORDER

Schizophrenia-screening questions

In the month before he died did he have any unusual thoughts, ideas, experiences or beliefs?

such as -

that people were talking about him when no one was around	Y/N/DK

that there were special references to him on TV or radio Y/N/DK

that there were messages coming from unusual places such as TV and radio
Y/N/DK

feeling someone trying to harm him when that was not true Y/N/DK

feeling specially important with power to do things which others couldn't
Y/N/DK

that his feelings, thoughts or actions were controlled by outside forces
Y/N/DK

that parts of his body had stopped working Y/N/DK
that he had committed a crime (untrue) and would be punished Y/N/DK

Schizophrenia-detailed questions

What was his mood like during that time
(If the psychotic symptoms are mood congruent clarify that this is not a primary mood disorder)
How did these ideas affect his behaviour?
Did he behave strangely or out of character during that month? Y/N/DK
Did he mention hearing voices? Y/N/DK
Did he talk to people who were not there? Y/N/DK
Do you know what the voices said?

Did they say bad things about him? Y/N/DK
Did he see any visions? Y/N/DK

Did he talk in a way that was difficult to follow? Y/N/DK
Can you describe his way of talking?
Did he have any particular worries or preoccupations?
Was there a time in the month before he died when you think he had strange thoughts or beliefs most of the day? Y/N/DK
How long did this go on for? several days?

Was there a time of at least a week when he had some symptoms every day?

Y/N/DK

Do you think that it was clear that something was wrong before these unusual symptoms started?   Y/N/DK

Sometimes people get withdrawn and lose interest in things for a while before they get really ill. Did this happen to him?   Y/N/DK

When these symptoms started was he was drinking heavily or using drugs?

Was he physically ill before or during these symptoms?   Y/N/DK

Was he admitted to hospital?   Y/N/DK
Did he have any treatment?   Y/N/DK
Do you know what it was?
Did this illness affect his work or relationships with other people?   Y/N/DK
Can you say how?
Had there been any episodes like this in the past?   Y/N/DK
When did they first start?
Do you know how many episodes he had all together?
When was the most recent one? *(if no episode in month before)*

Had he ever been admitted to hospital with these episodes in the past?

Had he taken tablets or had injections for this problem in the past?   Y/N/DK

If there had been episodes in the past would you say that he recovered fully after each one?   Y/N/DK

What was it about him which was different from usual after the obvious symptoms such as voices had worn off?
Did his behaviour remain slightly odd?   Y/N/DK
Was he withdrawn, preferring his own company?   Y/N/DK
Did he drop his usual interests?   Y/N/DK
Did he continue to have some unusual ideas?   Y/N/DK

If you think about the worst episode he had and count from the time you noticed something was wrong to getting almost back to normal was he ever ill more than 6 months?   Y/N/DK
If not, 1 month?   Y/N/DK

What do you think triggered this illness?
Had there been anything which had upset him a great deal just before he got ill the last time?

ALCOHOL-RELATED DISORDER

Alcohol-screening questions

Do you know how much X was drinking in the month before he died?

Was he or anyone else worried about his drinking?

Did he have problems controlling his drinking?   Y/N/DK

Alcohol-detailed questions

When did this start?

Was the drinking a new problem or this happened before?

Can you tell me a little about his drinking over the years, when do you think he first developed a problem?

How did things progress?

When was the worst time for him?

Do you know how much he was drinking then?

Had his drinking changed before he died?   Y/N/DK

During that month did his drinking lead to any problems with his health

such as blackouts, liver damage, fits?

Had these ever occurred in the past?   Y/N/DK

Did he drink when it might be dangerous during that month for example when driving or operating machinery?   Y/N/DK

Had this ever happened in the past?   Y/N/DK

Did he have any legal problems because of the drinking, losing his driving licence for example?

                    Y/N/DK

What about in the past?   Y/N/DK

Did he recognise that he had a problem and try to cut
down?   Y/N/DK

Did his drinking affect his friendships or relationships in the family?   Y/N/DK

Did he spend a lot of time drinking or with a hangover?   Y/N/DK

Did he have to have time off work because of the drinking?   Y/N/DK

Had this been a problem before?   Y/N/DK

Was he depressed before he started drinking this time?   Y/N/DK

(If yes explore mood syndrome)

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DRUG-RELATED DISORDERS

Drugs- screening question

Do you know if he ever used any drugs other than alcohol?   Y/N/DK
If yes, complete the rest of this section

Drugs-detailed questions

Do you know what he used?
Did he ever use any of the following?

> Marijuana, LSD, heroin, amphetamines, cocaine.
> Ecstasy, sleeping pills, tranquillisers, solvents
> (glue or lighter fuel), other

Do you know how much he used?
When did he use these drugs?
Did he take drugs on his own or with others ?   Alone / With others / Both /DK
Did he use any drugs in the month before his death?
Did his drug use change,or increase before he died?   Y/N/DK
Did he ever have any health problems because of drugs?   Y/N/DK
Did he ever try to cut down or seek treatment?   Y/N/DK
Did he have any symptoms such as shaking when he could not get drugs?   Y/N/DK
Did his problem lead to rows in the family or with friends?   Y/N/DK
Did he get into trouble with the police because of his problem?   Y/N/DK
Do you think it affected his work?   Y/N/DK
Did he use drugs even when it might be dangerous eg operating machinery?

                                                                     Y/N/DK

Was he depressed before he started using drugs or his drug use increased?
(If yes then clarify whether primary mood disorder present)

ANXIETY SYNDROMES AND PANIC DISORDER

Anxiety disorders-screening questions

In the month before his death did he seem to be particularly
anxious, nervous, panicky?   Y/N/DK

What was his mood like during that time?

*(If there is evidence of depression try to establish whether it was primary or
secondary)*

*Go through all the following questions and decide which subsection, on a specific
disorder, to proceed to*

Did he have sudden attacks of being panicky and anxious ?   Y/N/DK
Did these happen in certain situations or could they come on out of the blue?
(panic disorder)

Did he worry excessively about several things, getting them completely out of
proportion?   Y/N/DK
Did he seem anxious or nervous most of the time?   Y/N/DK
(generalised anxiety)

Was he frightened of specific things like spiders or flying?   Y/N/DK
(specific phobias)

Did he have a lot of repetitive thoughts which upset him?   Y/N/DK
Did he check things more than other people or have rituals for doing things?
                                                                              Y/N/DK
(obsessive compulsive disorder)

Did he seem unusually nervous about meeting people, eating and speaking in public?
                                                                              Y/N/DK
(social phobia)

Panic disorder-detailed questions

Can you describe these attacks?
Did he have any of the following during the attacks

Shaking	Y/N/DK
Sweating	Y/N/DK
Shortness of breath	
	Y/N/DK
Dizziness	Y/N/DK

Did he ever tell you how he felt during the attack? How was that?
Do you know how many attacks he had in that month?

     <4/>4/DK

If there were precipitants,
What situations would trigger these attacks?

Did he avoid any of these situations?	Y/N/DK
Was he frightened of going out?	Y/N/DK
Did this interfere with his life?	Y/N/DK
Did he worry a lot about having another attack?	Y/N/DK
Had he ever had attacks like these in the past?	Y/N/DK

Do you know when they started?

Did he have treatment for these attacks?	Y/N/DK

Was he suffering from any physical illnesses while he was having the attacks?

Was he taking any medication from the doctor	Y/N/DK
Was he using alcohol or drugs?	Y/N/DK
Which came first?	
Do you think he drank a lot of coffee?	Y/N/DK

Social phobia-detailed questions

Was he unusually uncomfortable about speaking , eating or writing in front of other people?	Y/N/DK
Would he avoid social situations?	Y/N/DK

When did this start?
Had the problem changed before he died?

     Worse/Better/No change/DK

Simple phobias-detailed questions

What were the specific things he was afraid of?

Would he get very anxious when he was faced with these things?	Y/N/DK
Did he take steps to avoid these things?	Y/N/DK
Did that interfere with his life?	Y/N/DK
Did he realise that his fear was out of proportion?	Y/N/DK

When did these problems start?

Did they change in the month before he died?

Worse/Better/No change/ DK

Do you think he was very troubled by these fears?   Y/N/DK

Generalised anxiety-detailed questions

Did he worry a lot that terrible things might happen?   Y/N/DK
Did he get shaky, sweaty?   Y/N/DK
Did he seem keyed up and have difficulty concentrating?   Y/N/DK
Did he have trouble falling asleep?   Y/N/DK
Did this relate to particular situations or did he seem generally anxious?   Y/N/DK
Did he have panic attacks?   Y/N/DK
Can you tell me more about that? (go back to panic attack questions)

Obsessive compulsive disorder-detailed questions

Do you know whether he had any repeating thoughts, which went round and round in
his head and troubled him?   Y/N/DK
Can you describe these thoughts?
Did he worry that terrible things might happen, for example that he might harm
someone?   Y/N/DK
Did he worry that he might get contaminated with dirt or germs?   Y/N/DK
Did these types of thoughts bother him in the month before his death?   Y/N/DK
Did he repeat things over and over, like checking lights, or have any rituals for doing
things that you can remember?   Y/N/DK
Was he doing these things before he died?   Y/N/DK
Would he get anxious if he couldn't do these things?   Y/N/DK
How often would he check things?
How long each day would he spend checking or repeating things?   1h/>1h/DK
Did it interfere with his work or social life?   Y/N/DK
Did he seek a lot of reassurance from people about the things he worried about?

                                                                     Y/N/DK

When did this problem first start?
How did it progress?
Did it make him depressed?   Y/N/DK
(If yes explore depression)

Had he had any treatment?   Y/N/DK
Do you know when?
Do you know what treatment?   Y/N
Had it been helpful?   Y/N/DK

EATING DISORDERS

Eating disorders-screening question

Did he lose weight through dieting in the month before he died?   Y/N/DK

Eating disorders-detailed questions

When had this diet started?
How much weight had he lost altogether?
Did people think he was too thin?   Y/N/DK
Did people encourage him to eat more?   Y/N/DK
Did he think he was overweight even when he was quite thin?   Y/N/DK
Did he try to hide how much he was eating?   Y/N/DK
Did he eat meals with other people?   Y/N/DK

Did he do a lot of cooking for others but not eat the food himself?   Y/N/DK
Did he seem interested in food, reading cookbooks etc but still eat very little?
                                                                         Y/N/DK
Did he seem scared of eating and putting on weight?
                                                                         Y/N/DK
Did he do a lot of exercise even though he was eating so little?
                                                                         Y/N/DK
Do you know if he ever had binges on food?
                                                                         Y/N/DK
.These binges may have been secret but do you know how much he used to eat at once?
                                                                         Y/N/DK
Did he vomit to get rid of the food?
                                                                         Y/N/DK
Was this a regular thing or did it just happen now and then?

Do you know whether he used laxatives or other drugs to keep his weight down?
                                                                         Y/N/DK
When did the problem with dieting first start?
How did it progress?
Did he ever cut himself or harm himself in other ways when he was under a lot of
stress?   Y/N/DK
Do you think he found these problems upsetting?   Y/N/DK
Did he get depressed?   Y/N/DK
(If yes, explore depression)

ADJUSTMENT DISORDER

Establish the date of onset of disorder (within three months of event) and duration (no longer than six months)

Screening question

At the time X died was he/she experiencing low mood, anxiety or inability to cope following (a significant life event) ?   Y/N/DK

Detailed questions

Please describe the event.

How long after (event) did this begin ?   < 1 month / 1 - < 3 mnths / 3-6 mnths / > 6 mnths

How long did this last ?

Was X's reaction more severe/pronounced than you would have expected ? Y/N/DK

Did X's reaction affect his lifestyle (eg functioning at school, social activities,relationships, hobbies and interests)?   Y/N/DK

APPENDIX 4

Guidelines for the coding of problems in the year before death and their influence on suicide.

This coding takes into account information from all sources i.e. suicide notes, inquest, GP, and hospital notes as well as the informant interview.

PROBLEMS are coded as follows:

0. ABSENT.

1. PRESENT. In order to be coded, a problem should have caused difficulties or distress *in the year before death.* Problems which started before that time but were continuing to have consequences in the last year should also be coded.

2. PROBABLE. This category should be used as little as possible and reserved for cases where, because of lack of information, it cannot be ascertained for definite whether a problem existed.

1. A problem is defined as a situation, which would cause difficulties *to the average person in that position.* This will exclude difficulties which were simply a reflection of a disturbed mental state, for example a delusion of poverty in a wealthy person suffering from psychotic depression. There needs to be some objective evidence that the problem actually existed, and if the person was depressed at the time of death the guiding principle should be: for the average person without depression in that position would this situation have caused difficulties?

2. Even if the situation did not cause the deceased any distress, if the problem was of the sort that would cause distress to the average person in that position, it should be coded. For example, death of a close relative or financial debt are problems and should be coded as such even if these problems were not apparently causing any distress to the deceased person.

3. Coding the same problem twice in different categories should be avoided. For example loneliness after bereavement should not be coded in the Social Isolation category as well as in the Bereavement category unless it can reasonably be thought of as a separate problem from the bereavement. For example, a man who feels lonely after his wife dies but who has a supportive social network would not be coded as having two separate problems. However someone with no living relatives or close friends who loses his wife might reasonably be coded as having problems in both the Social Isolation and Bereavement categories.

One problem can lead to another, separate problem. For example, a physical illness leading to disability and hence need for a move into a Nursing Home. It would seem reasonable to code two problems here, one under Physical Illness and the other under Accommodation.

3. Unresolved grief over a bereavement occurring more than 12 months before the subject died should only be coded as a problem if there was evidence of ongoing difficulties adapting to the loss, or specific grief symptoms in the year before death. Occasional sadness would not be enough to code the bereavement as a problem.

CONTRIBUTION TO SUICIDE

This is the influence that a particular problem had on the subject's decision to commit suicide, coded:

0. NONE.

1. MINOR OR MODERATE.

2. MAJOR.

3. UNCERTAIN.

This coding is more subjective than the coding of problems. The issue is: did the problem contribute to suicide in this particular person, not whether it would have contributed to suicide in a hypothetical, "average person ". You should ask whether this particular problem, in the context of and interacting with all the other problems, as well as the person's personality, previous experience etc, contributed to the subject's decision to commit suicide. The guiding principle is if a particular problem did not exist, but the person still had all their other problems, would the person have been any less likely to kill him/herself? So if a problem occurred in the context of a depressive illness, you should ask " If this person did not have the problem, would he/she have been at any less risk of dying through suicide at this time? " This is obviously a subjective judgement, but the "uncertain" category should be avoided if at all possible.

APPENDIX 5

Grief Experience Questionnaire (GEQ)

This instrument, developed by Barrett and Scott (1989), is completed as a written

questionnaire by a bereaved relative or friend. It consists of eleven domains or

subscales, two of which measure general grief reactions (1 and 2) and the remaining

nine (3-9) of which measure aspects of grief more specific to unexpected death. The

titles of these subscales are not written on the questionnaire itself, but are as listed

below with the corresponding numbers of the questions covering each subscale in

brackets:

1. Somatic reactions, 1-5

2. General grief reactions, 6-10

3. Search for explanation, 11-15

4. Loss of social support, 16-20

5. Stigmatisation, 21-25

6. Guilt, 26-30

7. Responsibility, 31-35

8. Shame, 36-40

9. Rejection, 41-45

10. Self-destructive behaviour, 46-50

11. Unique reactions, 51-55

Scores can either be calculated separately for each subscale, or a total GEQ score

obtained by adding together the scores of all eleven subscales. A sample GEQ (for a

subject who was a husband of the deceased person) is printed overleaf.

Grief Experience Questionnaire - Wife

Name ....   Ref No ....

In completing the items of this questionnaire, please think back upon your experiences since the death of your wife. You may find that some of the questions asked do not apply to you. For these, you should circle "Never". For those experiences that you do remember, please try to determine *how long they lasted*. You may find some were brief, while some lasted a long time before they finally stopped. Other items you may find that you are still experiencing. After considering if an item applies to you, try to judge, as best you can, how frequently you have experienced it since your wife's death.

Use these answers unless otherwise indicated.

Never 1	Rarely 2	Sometimes 3	Often 4	Almost always 5

Since the death of your wife, how often have you:

1.	Thought that you should go and see a doctor?	1	2	3	4	5
2.	Experienced feeling sick?	1	2	3	4	5
3.	Experienced trembling, shaking or twitching?	1	2	3	4	5
4.	Experienced light-headedness, dizziness, or fainting?	1	2	3	4	5
5.	Experienced nervousness?	1	2	3	4	5
6.	Thought people were uncomfortable offering their condolences to you?	1	2	3	4	5
7.	Avoided talking about the negative or unpleasant parts of your marriage?	1	2	3	4	5
8.	Felt you just could not make it through another day?	1	2	3	4	5
9.	Felt you would never be able to get over the death?	1	2	3	4	5
10.	Felt anger or resentment towards your wife after the death?	1	2	3	4	5
11.	Questioned why your wife had to die?	1	2	3	4	5
12.	Found you couldn't stop thinking about how the death occurred?	1	2	3	4	5
13.	Thought that your wife's time to die had not yet come?	1	2	3	4	5
14.	Found yourself not accepting the fact that the death happened?	1	2	3	4	5
15.	Tried to find a good reason for the death?	1	2	3	4	5
16.	Felt that your friends were avoiding you?	1	2	3	4	5
17.	Thought that others didn't want you to talk about the death?	1	2	3	4	5
18.	Felt that no one cared to listen to you?	1	2	3	4	5
19.	Felt that neighbours and in-laws were not offering enough concern?	1	2	3	4	5
20.	Felt like a social outcast?	1	2	3	4	5
21.	Thought people were gossiping about you or your wife?	1	2	3	4	5
22.	Felt that people were probably wondering about what kind of personal problems you and your wife had experienced?	1	2	3	4	5
23.	Felt that others may have blamed you for the death?	1	2	3	4	5
24.	Felt that the death somehow reflected negatively on you or your family?	1	2	3	4	5
25.	Felt somehow stigmatised by the death?	1	2	3	4	5

Never 1	Rarely 2	Sometimes 3	Often 4	Almost always 5

26. Thought of times before the death when you could have made your wife's life more pleasant?   1 2 3 4 5

27. Wished that you hadn't said or done certain things during your marriage? 1 2 3 4 5

28. Felt that there was something very important you wanted to make up to your wife?   1 2 3 4 5

29. Felt that perhaps you didn't care enough about your wife?   1 2 3 4 5

30. Felt somehow guilty after your bereavement?   1 2 3 4 5

31. Felt that your wife had some kind of complaint against you at the time of the death?   1 2 3 4 5

32. Felt that, had you somehow been a different person, your wife would not have died?   1 2 3 4 5

33. Felt you had made your wife unhappy long before the death?   1 2 3 4 5

34. Felt you missed an early sign which may have indicated to you that your wife was not going to be alive much longer?   1 2 3 4 5

35. Felt that problems you and your wife had together contributed to an untimely death?   1 2 3 4 5

36. Avoided talking about the death of your wife?   1 2 3 4 5

37. Felt uncomfortable revealing the cause of the death?   1 2 3 4 5

38. Felt embarrassed about the death?   1 2 3 4 5

39. Felt uncomfortable about meeting someone who knew you and your wife?   1 2 3 4 5

40. Not mentioned the death to people you met casually?   1 2 3 4 5

41. Felt that your wife chose to leave you?   1 2 3 4 5

42. Felt deserted by your wife?   1 2 3 4 5

43. Felt that the death was somehow a deliberate abandonment of you?   1 2 3 4 5

44. Felt that your wife never considered what the death might do to you?   1 2 3 4 5

45. Sensed some feeling that your wife had rejected you by dying?   1 2 3 4 5

46. Felt that you just didn't care enough to take better care of yourself?   1 2 3 4 5

47. Found yourself totally preoccupied while you were driving?   1 2 3 4 5

48. Worried that you might harm yourself?   1 2 3 4 5

49. Thought of ending your own life?   1 2 3 4 5

50. Intentionally tried to hurt yourself?   1 2 3 4 5

51. Wondered about your wife's motivation for not living longer?   1 2 3 4 5

52. Felt your wife was somehow getting even with you by dying?   1 2 3 4 5

53. Felt that you should have somehow prevented the death?   1 2 3 4 5

54. Told someone that the cause of death was something different from what it really was?   1 2 3 4 5

55. Felt that the death was a senseless and wasteful loss of life?   1 2 3 4 5

APPENDIX 6

Case vignettes to illustrate the influence of different main contributory factors to suicide

These case vignettes are composites of several different cases and personal details have been altered to preserve confidentiality.

1. Symptoms of physical illness

A seventy-year-old widowed retired engineer had a three year history of breathlessness secondary to chronic lung disease. He had lived with his sister in Cornwall, who cared for him until she became physically ill herself. Seven months before his death, he moved to Northampton to live with his daughter and son in law. During his last seven months he was distressed by breathlessness on minimal exertion and constant physical exhaustion. He was frightened of becoming more dependent on his family for personal care, but equally worried about the upheaval a move into a care home would bring. Although occasionally low in mood he appeared cheerful in the week before he died. One morning he was found in his bedroom by his daughter, in a semi-conscious state with an empty bottle of analgesics nearby. A suicide note lay on the bedroom table. He suffered a fatal cardiac arrest shortly after admission to hospital.

2. Physical illness with depression

A 75 year old retired builder had suffered from fluctuating pain from inflammatory bowel disease for several years and more recently had suffered two episodes of haematuria. He had had to give up driving. One month before his death he was seen by a urologist who placed him on the waiting list for cystoscopy. Over the next few weeks he became increasingly preoccupied with this procedure, worrying that it would be unsuccessful and that he would somehow be left paralysed. Despite being a wealthy man, he started to worry about money, and became low in mood with feelings of profound guilt and worthlessness. He did not seek help for these symptoms, and was found by his wife dead inside his car in his garage, the engine running and a hosepipe attached to the exhaust and placed through a back window.

3. Unresolved problems relating to bereavement

A seventy-three year old retired clerk, Mr. N, lost his wife five years before his own death. They had been an extremely close couple and had never had any children. He attended a Social Club twice a week and always seemed cheerful, but he found it difficult to confide in others. One of his friends noted that he had never recovered from the loss of his wife. He was in good physical heath and had no life problems or psychiatric symptoms in the weeks before he died. Around the time of the anniversary of his wife's death, his friend found him dead in his kitchen. He had hanged himself and also taken a large overdose of analgesics.

4. Financial problems

Mr. J was a sixty-four year old married stockbroker who had been struggling with financial problems related to his business for several years, and was in several thousand pounds debt. He had never confided in his family the extent of his debt. He was in good physical health and happily married. Two days prior to his death he received a letter threatening legal action unless an outstanding debt was paid promptly. The next day someone walking in a local park found Mr. J's body hanging from a tree.

5. Retirement

Mr. T was a sixty-two year old single man who lived alone in a council flat in Reading. He had worked as an assembly worker in a local factory for many years. He enjoyed his work, and his social life revolved around friends from the factory. He had few interests, and was noted by his friends to dislike change. They also mentioned that he was a rather dependent character, who tended to ask others for help rather than solve his own problems. One year before his death he was made redundant, and shortly afterwards he became low in mood with feelings of fear and hopelessness about the future. He was found dead in his home, post mortem toxicology revealing high levels of analgesic and antidepressant medication.

6. Accommodation

Mr.Y was an eighty-three year old retired policeman who moved to live with his daughter three months before his death. He had been experiencing increasing difficulties caring for his partner who had a moderately severe dementia complicated by persecutory thoughts. The plan was for Mr. Y and his partner to move into a self-

contained unit within a local residential home. Mr. Y was a quiet, reserved man who found it difficult to express his feelings. In the last few weeks he seemed slightly more withdrawn but there were no overt signs of depression. One week prior to the planned move, Mr. Y hanged himself in the garage of his daughter's house. After his death, Mr. Y's daughter found that her father had been putting his finances in order for several months, and wonders whether he had been planning his suicide.

APPENDIX 7

Publications arising from the study

Harwood, D.M.J., Hawton, K., Hope, T. & Jacoby, R. (2000) Suicide in older people: modes of death, demographic factors, and medical contact before death in one hundred and ninety- five cases. *International Journal of Geriatric Psychiatry,* 15, 736-743.

Harwood, D.M.J., Hawton, K., Hope, T. & Jacoby, R. (2001) Psychiatric disorder and personality factors associated with suicide in older people: a descriptive and case-control study. *International Journal of Geriatric Psychiatry,* 16, 155-165.

Harwood, D.M.J., Hawton, K., Hope, T. & Jacoby, R. (2002) The grief experiences and needs of bereaved relatives and friends of older people dying through suicide: a descriptive and case-control study. *Journal of Affective Disorders,* 72, 185-94.

Harwood D.M.J. Grief in Old Age. (2001) *Reviews in Clinical Gerontology,* 11, 167-75.

Harwood D.M.J, and Jacoby R. (2000) Suicidal behaviour in the elderly. In: Hawton, K. and van Heeringen, K., eds, *The international handbook of suicide and attempted suicide.* Chichester: Wiley and Sons.

Harwood, D.M.J. (2002) Suicide in older persons. In: Jacoby, R., Oppenheimer C., eds, *Psychiatry in the elderly,* Oxford: Oxford University Press.

Conference presentations of findings from the study

Harwood, D.M.J., Hawton K., Hope T., & Jacoby, R. Psychiatric disorder and personality factors in suicide in older people. Presented at 8th IPA Congress, Jerusalem, August 1997.

Harwood, D.M.J., Hawton, K., Hope, T., & Jacoby, R. A controlled study of psychiatric disorder and personality factors in suicide in older people in the UK. Presented at 9th IPA Congress, Vancouver, August 1999.

Harwood, D.M.J., Hawton, K., Hope, T., & Jacoby, R. Bereavement reactions after suicide in older people. Presented at Royal College of Psychiatrists Annual Meeting, Edinburgh, July 2000.

Harwood, D.M.J., Hawton, K., Hope, T., & Jacoby, R. Psychiatric disorder and personality factors in suicide in older people. Presented at PSIGE conference, Winchester, July 2002.

Harwood, D.M.J., Hawton, K., Hope, T., & Jacoby, R. The grief experiences and needs of bereaved relatives and friends of older people dying through suicide: a descriptive and case-control study. Presented at the 9th European Symposium on Suicide and Suicidal Behaviour, University of Warwick, September 2002.

Harwood, D.M.J., Hawton, K., Hope, T., & Jacoby, R. Life problems and physical illness as risk factors for suicide in older people: a descriptive and case-control study. Presented at the 9th European Symposium on Suiicde and Suicidal Behaviour, University of Warwick, September 2002.

Hawton, K., Harwood, D.M.J., Hope, T., & Jacoby, R. The needs of people bereaved through suicide. Presented at Suicide Prevention Australia Conference, Sydney, April 2001.