

THE SYMPTOMATOLOGY OF
DEPRESSION IN ELDERLY
PHYSICALLY ILL PEOPLE

THESIS SUBMITTED IN ACCORDANCE WITH THE
REQUIREMENTS OF THE UNIVERSITY OF LIVERPOOL
FOR THE DEGREE OF DOCTOR IN PHILOSOPHY BY
MARGARET FAY HAMMOND

APRIL 2000



Acknowledgements

I am indebted to the men and women who shared their thoughts and feelings during the course of this research. Many thanks are also due to the clinical and nursing staff of the Department of Medicine for the Elderly, Royal Liverpool University Hospital (Broadgreen and Royal Sites), and the Stroke Unit, Aintree Hospitals.

I would particularly like to express my appreciation to Dr. Gerry Humphris and Prof. Michael Lye for their unflagging practical and moral support, and to all past and present members of the Department of Geriatric Medicine, University of Liverpool, and especially Ms. Debbie Devine, Dr. Mavis Evans and Dr. Caroline Watkins.

My special gratitude is reserved for my family: my children David, Rosie and Jon who have sustained me throughout; my father Marlin Johnson; and my late husband Paul Hammond, whose confidence has been an enduring inspiration.

Table of Contents

Table of Contents	ii
Tables	iv
Figures.....	vi
Abstract.....	vii
Foreward	ix
Preface.....	xi
Chapter 1: Introduction.....	15
The aims of the study	17
Definitions used in this study.....	17
Outline of the thesis	20
Chapter 2: Review of the Literature.....	21
Depression in Elderly People	21
Introduction.....	21
Prevalence	22
Prognosis.....	24
Depressive symptoms in the elderly.....	26
Features of depression.....	29
Dementia	33
Comparisons in symptomatology between older and younger depressed people	34
Discussion	38
Depression in Physical Illness.....	40
Introduction.....	40
Prevalence of depression in medically ill patients	40
Aetiology.....	41
Morbidity and mortality associated with depression and illness.....	44
Methodological problems in depression research in medical populations.....	45
Depressive symptoms among physically ill in-patients	47
Which symptoms can be used to discriminate depression in physically ill patients?	50
Comparisons between medically ill depressed patients and psychiatric patients.....	56
Recognition and treatment of depression in physically ill patients.....	59
Summary	63
Depression in Elderly Physically Ill People	64
Aetiology.....	64
Prevalence	66
Effects of physical illness on depression	67
Effects of depression on physical health and mortality.....	67
Recognition and Treatment.....	69
Depressive symptoms in elderly physically ill patients	72
Features of depression in elderly physically ill patients.....	73
Discussion and summary: symptoms of depression in physically ill people, elderly people, and physically ill elderly people	77
Screening for depression in elderly physically ill patients	81
Specific problems in screening physically ill elderly patients	82
Examples of screening scales.....	83
Depression Rating Scales	91
Two depression rating scales in common use	94

Chapter 3: Methods	105
Chapter 4: Results	108
Results (I): general	108
Results (II): Discriminatory power of signs and symptoms of depression	110
Frequency of endorsement of scale items	110
Discriminatory power of scale items.....	111
Frequency of endorsement of items at levels of significant discrimination	155
Summary	157
Results (III): The correlations of symptoms and signs of depression	160
Results (IV): Reliability of the Hamilton and Montgomery-Asberg Depression Rating Scales	184
Introduction.....	184
Results: The Hamilton Depression Rating Scale	197
Results: The Montgomery-Asberg Depression Rating Scale.....	209
Results (V): Factor Structure of Depression using Combined Scale Items	214
Chapter 5: Interviews -- qualitative analysis	226
Respondents	227
Presentation of cases, and Self-concepts.....	232
Experience of depression as an Abnormal State	239
Explanations of aetiology.....	255
Relationships with health professionals	271
Discussion	278
General discussion	287
Conclusions	295
References	297
Appendices	326
Table showing results of t-tests between non-depressed patients	
Hammond, Evans and Lye 1993 (letter)	
Hammond 2000 (abstract)	
Hammond, Evans, O'Keeffe and Lye 1996 (abstract)	
Hammond, O'Keeffe and Barer 2000	
Evans, Hammond, Wilson, Lye and Copeland 1997	
Hammond 1998	

Tables

<i>Table 1: summary of the prevalence of depressive symptoms that have been found in studies among elderly people.....</i>	<i>28</i>
<i>Table 2: summarising the symptoms of depression that have been noted in studies comparing younger and older adults</i>	<i>37</i>
<i>Table 3: summarising depressive symptoms found in studies among physically ill patients.....</i>	<i>49</i>
<i>Table 4: summary of symptoms that discriminated and fail to discriminate depressed from non-depressed medically ill patients in comparison studies</i>	<i>55</i>
<i>Table 5: summarising studies comparing signs and symptoms of depression in depressed patients in psychiatric and medical contexts</i>	<i>58</i>
<i>Table 6: GMS-AGECAT depression diagnoses</i>	<i>108</i>
<i>Table 7: frequency of endorsement above '0' of HAMD and MADRS items.....</i>	<i>110</i>
<i>Table 8: MADRS item 8: anhedonia.....</i>	<i>113</i>
<i>Table 9: HAMD item 7: work and interests.....</i>	<i>114</i>
<i>Table 10: GMS items relating to anhedonia.....</i>	<i>115</i>
<i>Table 11: MADRS item 2: reported sadness.....</i>	<i>117</i>
<i>Table 12: HAMD item 1: depressed mood.....</i>	<i>117</i>
<i>Table 13: MADRS item 1: apparent sadness.....</i>	<i>118</i>
<i>Table 14: GMS items: dysphoria</i>	<i>120</i>
<i>Table 15: MADRS item 10: suicidal thoughts</i>	<i>123</i>
<i>Table 16: HAMD item 3: suicide</i>	<i>123</i>
<i>Table 17: GMS items: suicidal feelings</i>	<i>124</i>
<i>Table 18: MADRS Item 7: lassitude</i>	<i>126</i>
<i>Table 19: HAMD item 13: general somatic symptoms</i>	<i>127</i>
<i>Table 20: GMS items: loss of energy.....</i>	<i>128</i>
<i>Table 21: GMS items: tension.....</i>	<i>128</i>
<i>Table 22: HAMD item 8: retardation Slowness of thought and speech, impaired ability to concentrate, decreased motor activity</i>	<i>130</i>
<i>Table 23: GMS items: retardation.....</i>	<i>130</i>
<i>Table 24: MADRS item 6: concentration difficulties.....</i>	<i>131</i>
<i>Table 25: GMS items: concentration.....</i>	<i>132</i>
<i>Table 26: GMS items: cognitive complaints</i>	<i>133</i>
<i>Table 27: MADRS item 3: inner tension.....</i>	<i>134</i>
<i>Table 28: HAMD item 10: psychic anxiety.....</i>	<i>135</i>
<i>Table 29: GMS items: irritability.....</i>	<i>136</i>
<i>Table 30: GMS items: worry.....</i>	<i>137</i>
<i>Table 31: GMS items: fear and anxiety</i>	<i>138</i>
<i>Table 32: HAMD item 11: somatic anxiety</i>	<i>139</i>
<i>Table 33: GMS items: somatic anxiety.....</i>	<i>139</i>
<i>Table 34: HAMD item 13: hypochondriasis.....</i>	<i>140</i>
<i>Table 35: GMS items: hypochondriasis.....</i>	<i>141</i>
<i>Table 36: MADRS item 5: reduced appetite</i>	<i>143</i>
<i>Table 37: HAMD item 12: gastrointestinal symptoms.....</i>	<i>143</i>
<i>Table 38: GMS items: appetite</i>	<i>144</i>
<i>Table 39: HAMD item 16: weight loss.....</i>	<i>145</i>
<i>Table 40: GMS items: weight change.....</i>	<i>145</i>
<i>Table 41: MADRS item 4: reduced sleep.....</i>	<i>147</i>
<i>Table 42: HAMD item 4: early insomnia.....</i>	<i>147</i>
<i>Table 43: HAMD item 5: middle insomnia.....</i>	<i>148</i>
<i>Table 44: HAMD item 6: late insomnia.....</i>	<i>149</i>
<i>Table 45: GMS items: sleep.....</i>	<i>150</i>
<i>Table 46: HAMD item 9:agitation.....</i>	<i>151</i>
<i>Table 47: MADRS item 9: pessimistic thoughts.....</i>	<i>152</i>
<i>Table 48: HAMD item 2: feelings of guilt.....</i>	<i>153</i>

Table 49: <i>GMS items: guilt</i>	154
Table 50: <i>percentage of patients recorded at the level of severity at which maximum discrimination occurs for the HAMD and MADRS items</i>	155
Table 51: <i>correlation matrix for HAMD and MADRS item, depressed group</i>	163
Table 52: <i>correlation matrix for all HAMD and MADRS items, non-depressed group</i>	164
Table 53: <i>comparing selected correlations of depressed and non-depressed groups [non-depressed are shown in brackets]</i>	165
Table 54: <i>factor structure of the HAMD (Kivela and Pakkala 1988)</i>	189
Table 55: <i>factor structure of HAMD (Fleck et al 1995)</i>	190
Table 56: <i>factor structure of the HAMD (Good et al 1987)</i>	192
Table 57: <i>factor structure of the HAMD (Onega and Abraham 1997)</i>	194
Table 58: <i>corrected item-total correlations for HAMD scale items</i>	198
Table 59: <i>HAMD items deleted and associated alpha coefficients</i>	198
Table 60: <i>six-factor structure of the HAMD using all items</i>	200
Table 61: <i>four-factor structure of the HAMD using all items, edited according to the criteria of Kivela and Pakkala (1988)</i>	201
Table 62: <i>factor correlation matrix, 13 HAMD items</i>	203
Table 63: <i>five factor solution, 13 HAMD items, Varimax rotation</i>	204
Table 64: <i>factor correlation matrix, four-factor solution, 13 HAMD items</i>	205
Table 65: <i>four-factor solution, 13 HAMD items</i>	205
Table 66: <i>factor scores for depressed subjects with HAMD median score of 21</i>	207
Table 67: <i>successive deletion of MADRS items to maximise alpha coefficient</i>	209
Table 68: <i>factor structure of five MADRS items with maximised alpha</i>	209
Table 69: <i>corrected item-total correlations for MADRS items</i>	210
Table 70: <i>correlation matrix for 3-factor MADRS solution, oblique rotation</i>	211
Table 71: <i>MADRS 3-factor solution, Varimax rotation</i>	211
Table 72: <i>2-factor solution, 7 MADRS items, Varimax rotation</i>	212
Table 73: <i>items included and excluded in combined scale analyses</i>	215
Table 74: <i>corrected item-total correlations for 15 retained combined scale items</i>	216
Table 75: <i>items removed from combined scale to maximise alpha coefficient</i>	216
Table 76: <i>4-factor solution, 15 combined scale items, Varimax rotation</i>	217
Table 77: <i>factor correlation matrix, 16 combined scale items, oblique rotation</i>	218
Table 78: <i>4-factor solution, 16 combined scale items (including early and late insomnia)</i>	219
Table 79: <i>12 HAMD and MADRS items used in exploratory factor analysis</i>	220
Table 80: <i>correlation matrix from oblique rotation, 12 combined scale items</i>	221
Table 81: <i>3-factor solution, 12 HAMD and MADRS items</i>	221
Table 82: <i>2-factor solutions, Varimax rotation, of 9 combined scale items</i>	222
Table 83: <i>interview subjects</i>	229

Figures

<i>Figure 1: Hamilton Depression Rating Scale items</i>	<i>96</i>
<i>Figure 2: Montgomery-Asberg Depression Rating Scale items.....</i>	<i>100</i>
<i>Figure 3: illustrating the sampling of the study population and control groups.....</i>	<i>106</i>
<i>Figure 4: illustrating the associations among sleep items.....</i>	<i>169</i>
<i>Figure 5: illustrating the relationship of reduced appetite to other symptoms and signs of depression in this sample of elderly depressed patients.....</i>	<i>170</i>
<i>Figure 6: showing the correlations of anxiety items.....</i>	<i>176</i>
<i>Figure 7: illustrating the relationships among mood items and other signs and symptoms of depression in this elderly physically ill depressed population.....</i>	<i>183</i>

Abstract

Background and aims

Significant depression is common among elderly people who are physically ill, but both the identification of depression and the assessment of severity and change over time are compromised because the instruments used clinically and in research have been developed and validated on either younger or physically relatively healthy groups of people. The importance of particular signs and symptoms, particularly those that may be attributable to illness or ageing, is uncertain.

The aims of this study were to establish which signs and symptoms reliably discriminate depressed from non-depressed elderly physically ill people, to evaluate the utility of two commonly used depression rating scales, and to describe the presentation and core symptomatology of depressive illness commonly encountered in elderly people with physical illness to further inform the identification and measurement of depression.

Subjects and Methods

Symptoms and signs of depression, as assessed by the Hamilton and Montgomery Asberg Depression Rating scales, were compared between 100 depressed elderly medical in-patients (mean age 79 years, 74 female) with 100 non-depressed age- and sex-matched controls, to establish which of them reliably discriminated the depressed from the non-depressed.

The structure of the construct of depression was examined through the correlation of symptoms, exploratory factor analyses of a range of symptoms, supported by data from 115 Geriatric Mental State interviews and in-depth interview data from 8 selected people.

The validity and reliability, in this population, of the Hamilton Depression Rating Scale and the Montgomery-Asberg Depression Rating Scale were determined through aspects of internal consistency and factor structure.

Results and Conclusions

The discriminatory power of most symptoms and signs depends in part upon the level of severity, the persistence and pervasiveness of the symptom. Observations of behaviour and demeanour can reliably identify depressed patients, aspects of anhedonia are important discriminators, and certain somatic symptoms (such as loss of energy and feelings of lassitude), as well as reported difficulty with concentration or a preoccupation with somatic symptoms, should not be disregarded when considering the possibility of depression.

The construct of depression in this population includes low levels of positive affect as well as high levels of negative affect, and these should be given emphasis in the assessment of depression severity. In addition, anxiety (though frequently accompanying depression) is a separate construct and should be measured separately.

The level of recognition of depression among physically ill elderly patients could be improved by emphasising the importance of observed signs and of anhedonia, and by improvements in the accessibility of health professionals both emotionally and practically.

Foreward

My interest in the relationship between mental and physical health was formalised during my nursing career, which began in the early 1970's. The fascinating individual variations in the ways in which people experienced, responded to and coped with illness, surgery, and rehabilitation were given little formal attention at that time. The understanding of depression was certainly vague among clinical staff. In Davidson and Macleod's *Principles and Practice of Medicine (10th edition)*, published in 1972, in 1138 pages of text, the section describing 'Depressive Illness' merits four cautionary paragraphs.

Depression became a personal issue for me in 1982, when a close member of my family became ill. This kind, intelligent, gentle elderly man (a retired deputy headmaster of a school for disabled children) inexplicably developed various mysterious physical disorders; and neither his GP, nor a private physician to whom he was eventually referred, identified the cause of his illness as severe depression. Only when he self-referred to Casualty, having spent a night contemplating murder and suicide, was he admitted to a psychiatric hospital. His response to ECT was rapid; he was discharged after a minimum of treatment, without follow-up. Within a year, he was dead at the age of 78 from a carefully planned suicide. The devastation caused by his illness, and the acknowledgment that not only I, but also other trained professionals, had failed to recognise the symptoms of his illness, provoked in me a serious interest in depression.

From nursing I proceeded to study for a psychology degree, during which I brought together my experience in a study in stroke patients. In that study I found a significant association between depression and a reduced sense of personal control over health. My impression from this study was that the feelings of helplessness and lack of motivation among the depressed patients was a consequence rather than the cause of their depression. Depression was a final insult, removing any sense of purpose from these people who had already suffered serious physical illness.

After receiving my degree, I was employed to work on a placebo-controlled trial of an anti-depressant with elderly physically ill people. This gave me the opportunity to work with specialists in geriatric medicine and psychogeriatrics, and to engage with the literature that constantly emphasised the difficulties of recognition, diagnosis and assessment of depression in both elderly people and people with co-morbid physical illness.

During that trial, the Hamilton Depression Rating Scale and the Montgomery-Asberg Scale (both standard instruments measuring the severity of depression in studies of this kind) were used as outcome measures. It became apparent to me that what was assessed by the scales was not necessarily accurate. The severity of distress did not always seem reflected in the global scores, and the two scales occasionally described conflicting levels of severity. There were occasions when people were reporting what to them were important symptoms that were not measurable using the available instruments. At around that time, my late husband suggested to me that I should undertake post-graduate study. As he put it, 'One of us should have a PhD, and I'm too busy.'

It seems particularly poignant that people who have survived into old age, and whose lives are limited by physical illness and disability, should be deprived by depression of the capacity to enjoy that which may still be available to them. From a personal understanding of the seriousness of depression, and a background in nursing and psychology, I took the opportunity to contribute to the current understanding of the identification and assessment of depressive illness in this population, in a way that might improve both recognition and measurement of the efficacy of treatments. The intention was always to respect and give precedence to the individuals' own experience as the best guide to the important markers of this fundamentally destructive illness.

Preface

Anhedonia

A major conclusion of my research is that anhedonia (the reduction in the capacity to experience pleasure), along with loss of interest, are highly significant core symptoms of depression in elderly people who are physically ill, and that these symptoms have been underemphasised both in the identification and in the measurement of severity of depression in this population.

Unfortunately, most scales in current use that measure depression give little prominence to these symptoms. In fact, prior to the publication of the Research Diagnostic Criteria in 1978 and the third edition of the *Diagnostic and Statistical Manual* in 1980, loss of the ability to experience pleasure and interest had been absent from descriptions of depression for some time. For example, the *Handbook of Geriatric Psychiatry* lists the 'criteria for the diagnosis of depressive disorder' in four categories: pervasive affect, physiological disturbances, psychomotor disturbance, and psychological disturbances. Within the category of 'affect' are the symptoms 'depressed, sad; and tearful.' Among the eight items in the psychological category is 'emptiness.' There is no mention at all of loss of interest or loss of pleasure. In distinguishing between endogenous and reactive depression, it is noted vaguely that 'loss of interest in life' was a characteristic of endogenous depression. Nelson and Charnley (1981) reviewed 13 studies of depression, none of which included anhedonia and only half of which included any reference to loss of interest.

In the 19th century, however, the loss of interest or pleasure was central to the diagnosis of depression, or 'melancholia' as it was then termed. Ribot (1896) proposed the term *anhedonia* to describe this major feature. Ribot's definition comprised more than the absence of pleasure implicit in the word. He noted that '*in cases of profound melancholia....the individual is untouched*

by the slightest impulse of joy...’ Quoting from the case descriptions of others, he describes apathy, loss of social engagement, and an inability to experience interest as well as pleasure:

‘she ceased to feel any affection for her father or mother...could not be drawn out of her apathetic sadness. ..things which previously made her shriek with laughter now left her uninterested.’

‘every affection seemed to be dead in him. ...there was complete absence of emotive reaction. Thoughts of his house, his home, his wife, his absent children, affected him no more, he said, than a theorem of Euclid.’ (Ribot 1896)

Kraepelin (1913), referring to the symptom of anhedonia in a patient of his, remarked that ‘nothing can awaken his interest, nothing causes him joy.’ That pleasure and interest are closely associated can be understood in terms of behavioural reinforcement. The reduction of the power of positive reinforcers results in a reduction in the intention to seek any opportunity for positive reinforcement. Klein (1974) described

‘a sharp, unreactive pervasive impairment of the capacity to experience pleasure or to respond affectively to the anticipation of pleasure. This key inhibition of the pleasure mechanism results in a profound lack of interest and investment in the environment...’

This evolution in diagnostic criteria, away from the archaic ‘melancholia’ to the current label ‘depression,’ was no doubt an attempt at modernisation. In Ancient Greece the universe was thought to comprise four elements--fire, air, earth, and water; and from this developed the theory of the four bodily humours: blood; phlegm; choler (yellow bile); and melancholy (black bile). From the ancient physiological theory still prevailing in the Middle Ages and later, the combinations of these humours created a person who was sanguine, phlegmatic, choleric, or melancholic. ‘Melancholia’

resonated with outdated unscientific theory.

Diagnosis moved towards an emphasis on symptoms of depressed mood, and anhedonia all but disappeared from the criteria. Current diagnostic criteria (e.g. DSM-IV) acknowledge that persistent, pervasive ‘loss of interest or pleasure in all or almost all usual activities and pastimes’ is one of the core symptoms of depression. However, psychiatrists and physicians, guided by previous diagnostic procedures, have in recent years persistently underplayed the value of anhedonia in studies of depression. Hamilton’s depression rating scale, published in 1960 and still the most widely used measure in treatment trials, has a single item encompassing ‘work and interests’ which includes

‘thoughts and feelings of incapacity, fatigue, or weakness related to activities, work or hobbies; loss of interest in activity, work or hobbies—either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels has to push self to work or join in activities); decrease in actual time spent in activities or decrease in productivity; [and] ‘stopped working because of present illness.’

There is no mention of a reduced ability to experience pleasure.

Klein (1974) considered that ‘... *impairment of the capacity to experience pleasure or to respond affectively to the anticipation of pleasure ...results in a profound lack of interest and investment in the environment...*’, and was in fact a marker symptom of depression that responds to antidepressant treatment, so the persistent use of instruments that ignore this symptom is difficult to understand.

The Montgomery-Asberg Scale (1972), based on the symptoms of depression most likely to improve with treatment, does enquire specifically about ‘Inability to Feel’:

... representing the subjective experience of reduced interest in the surroundings or activities that normally give pleasure. The ability to react with adequate emotion to circumstances or people is reduced; reduced ability to enjoy usual interests; loss of interest in the surroundings. Loss of feelings for friends and acquaintances. The

experience of being emotionally paralysed, inability to feel anger, grief or pleasure, and a complete or even painful failure to feel for close relatives and friends.

There is a particular sad significance to anhedonia among elderly people who are also affected by physical illness. The capacity to experience pleasure and to take interest in daily life and relationships are vitally significant when life is limited by infirmity, where the available pleasures are severely restricted. Recognising and addressing this aspect of depression is intrinsic to the enhancement of the quality of life and well-being of elderly people, and indeed may be the crucial outcome.

Chapter 1: Introduction

Depressive illness is the most common treatable mental illness in elderly people, with approximately 10% in the community affected to an extent that they would benefit from treatment (Saunders et al 1993, Lindsay 1990, Newmann 1989). Depression in elderly people presents problems second only to those of dementia (Baldwin and Jolley 1986), and fundamentally affects quality of life.

In acute geriatric medical wards, the prevalence of depression is approximately double that found in the community (Burn et al 1993, Hammond et al 1993,¹ O'Riordan et al 1989, Ryan et al 1995). The presence of physical illness is associated with increased prevalence of depression (Gurland et al 1983, Kennedy et al 1989, Lewisohn et al 1991, Murphy 1983, Robins et al 1984), and declining health and increasing disability predict the emergence of depressive symptoms. Over 80% of people aged over 60 years have some chronic physical illness, and half are physically restricted in some way by their disorder (Brammah 1998, Jarvik and Perl 1981, Kennedy et al 1990, Rossman 1979). Depression accompanying physical illness increases morbidity, length of hospitalisation, and mortality (Herrmann et al 1998, Koenig et al 1999, 1988a; Moffic and Paykel 1975, Morris et al 1993, Silverstone 1990a, Unutzer et al 1997).

Depression in elderly people with physical illness is often unrecognised, underdiagnosed, untreated, or inadequately treated despite effects on quality of life, morbidity and mortality. It is underdiagnosed, mainly due to confusion regarding the significance of somatic symptoms and assumptions regarding the appropriateness of depression (Barsa et al 1986, Harper et al 1990, Rapp et al 1988a, Schuckit et al 1975). Treatment may be withheld because of doubts concerning the efficacy of treatment for depression concomitant with physical illness, or worry concerning polypharmacy or side-effects (Henry and Martin 1987).

¹ See appendix

When physical illness is present, the diagnostic significance of symptoms of depression such as anorexia, weight loss, insomnia, lethargy, lassitude, retardation, loss of libido, loss of energy, headaches, muscular aches and preoccupation with physical problems, is disputed; and in elderly people some of the diagnostic signs and symptoms of depression have also been considered to be normal signs of ageing. In addition, ageing is associated with the increasing likelihood of negative life events. It is not clear, therefore, whether using standard assessment and diagnostic measures results in underdiagnosis when symptoms are wrongly attributed to ageing or illness, or overdiagnosis because symptoms due to physical conditions are interpreted as evidence for depression (Lewisohn et al 1991).

Studies of depression in elderly physically ill people have been methodologically constrained by the use of criteria and measures which have been developed and validated in younger and physically healthy groups (House 1988, Rodin and Voshart 1986, Silverstone 1991). Screening scales are used as an aid in the identification of depression. Rating scales reported as total scores are used to quantify depression severity, both in clinical practice and as outcome measures in studies of depressive illness. Both these types of measure need to be valid in the specific populations in which they are used, but the lack of clarity regarding the significance of symptoms and signs means that the construct of depression in elderly physically ill people is insufficiently well defined. Scales developed in younger physically well populations may not be suitable, contain irrelevant items and fail to contain appropriate items, and may therefore be misleading if used to identify depression or assess severity and the effects of treatment.

The aims of the study

The aims of this study were:

- (1) to determine which signs and symptoms discriminate depressed from non-depressed elderly people with physical illness in an acute medical setting, with the purpose of improving screening strategies
- (2) to assess the validity of commonly used depression severity rating scales in this population
- (3) to describe the presentation and core symptomatology of depressive illness commonly encountered in elderly people with physical illness to further inform the identification and measurement of depression.

Definitions used in this study

Elderly

'Elderly' is usually arbitrarily defined according to chronological age. Sociologically based definitions mark the lower end at 65 years, the age of normal retirement. Medical literature may divide 'elderly' into the 'young old' from 60 to 80 years, and the 'old old' who are over 80 years, although in some research 'elderly' is considered as young as 55 years. For the purposes of this study, people aged 65 years and over were defined as elderly, but any literature that described itself as concerned with elderly or geriatric patients was considered relevant.

Depression

'Depression' is variously used to describe a symptom, a syndrome, or a disease, and both categorical and dimensional classifications are used. The medical nosological approach discretely divides psychiatric disorders into categories, whereas the psychodynamic dimensional approach acknowledges the continuous and overlapping nature of symptoms and presentations. (Andreason and Black 1991, Wetzler et al 1991)

Clinically, 'depression' is a hypothetical construct defined by the presence of persistent symptoms which usually include dysphoric mood, anhedonia, thinking and memory difficulties, somatic symptoms (such as anorexia, insomnia, anergia, and lassitude), and psychological symptoms such as persistent thoughts of death, suicidal feelings, and feelings of guilt and self-reproach; Beck (1967) categorised the symptoms of depression as physical, volitional, emotional and cognitive.

The classification of depression is further refined according to aetiology, persistence, recurrence, treatment, and severity of symptoms into, for example, bi-polar disorder, major depression, minor depression, dysthymia, and adjustment disorder with depressed mood.

DSM criteria

The 3rd edition of the Diagnostic and Statistical Manual (DSM-III) (American Psychiatric Association 1980), lists the threshold criteria for a major depressive episode in adults as follows:

A: dysphoric mood or loss of interest or pleasure in all or almost all usual activities and pastimes. The dysphoric mood is characterised by symptoms such as the following: depressed, sad, blue, hopeless, low, down in the dumps, irritable. The mood disturbance must be prominent and relatively persistent, but not necessarily the most dominant symptom, and does not include momentary shifts from one dysphoric mood to another dysphoric mood, e.g. anxiety to depression to anger, such as are seen in states of acute psychotic turmoil.

B: at least four of the following symptoms have been present nearly every day for a period of at least 2 weeks:

1. poor appetite or significant weight loss (when not dieting) or increased appetite or significant weight gain
2. insomnia or hypersomnia
3. psychomotor agitation or retardation (but not merely subjective feelings of restlessness or being slowed down)

4. loss of interest or pleasure in usual activities, or decrease in sexual drive not limited to a period when delusional or hallucinating
 5. loss of energy; fatigue
 6. feelings of worthlessness, self-reproach, or excessive or inappropriate guilt (either may be delusional)
 7. complaints or evidence of diminished ability to think or concentrate, such as slowed thinking, or indecisiveness not associated with marked loosening of associations or incoherence
 8. recurrent thoughts of death, suicidal ideation, wishes to be dead, or suicide attempt
- C: mood incongruent delusions or hallucinations and bizarre behaviour not dominant when affective syndrome absent
- D: not superimposed on schizophrenia, or paranoid disorder
- E: not due to organic mental disorder or uncomplicated bereavement

The revised version of DSM-III (DSM-III-R) (APA 1987) adds that a symptom 'cannot be due to a physical condition', which results in a more stringent diagnostic criteria. The most recent DSM criteria, DSMIV (APA 1994), for major and minor depression includes 'observed depression' as a sign which may be used in making the diagnosis. A DSM-IV diagnosis of major depression would include depressed mood or loss of interest or observed depression, and at least four additional symptoms. Minor depression would include two to four persistent symptoms, including dysphoria or anhedonia.

Adjustment disorder is a maladaptive reaction to an identifiable stressor, which will remit once the stressor has ceased or once a new level of adaptation is achieved. An organic mood disorder is one in which a physical disorder directly causes the mood disorder. Senile dysphoria, as described by Baldwin and Jolley (1986), is precipitated by chronic illness and physical deterioration.

Other systems of diagnoses and classification, which differ slightly from DSM criteria, such as the International Classification of Diseases (ICD) (World Health Organization 1992), or Research Diagnostic Criteria (Spitzer et al 1978) are also used clinically and in research.

The diagnostic procedure employed in this research was the Geriatric Mental State Schedule (A)(GMS) 3rd Edition, which was adapted for DSM-III-R and ICD 10R criteria (Copeland et al 1986). The specific criterion was the AGE-CAT diagnostic syndrome case level of confidence three or greater, which has a satisfactory overall agreement with the diagnosis of depression according to DSM-III and DSM-III-R criterion (Copeland et al 1986). For this study, 'depressive illness' or 'depressive disorder' is used generally to include any clinically significant depression (excluding bipolar disorder) for which treatment might be of benefit. It has been recognised that in elderly people, and in the medically ill, depressive symptoms, even without a diagnosis of major depressive disorder, have clinically significant effects (Broadhead et al 1990, Koenig et al 1999, Sullivan et al 1999).

Outline of the thesis

In the following chapter, relevant literature will be presented and discussed concerning

- depression in elderly people
- depression in physically ill people
- depression in older people with physical illnesses
- the use of screening scales to identify depression, and
- depression severity measurement scales.

Thereafter, the general and specific methodology of this research will be presented, followed by the presentation and discussion of quantitative results. This will include an examination of the discriminatory power of signs and symptoms of depression in elderly people who are physically ill, and analyses of the reliability and validity of two commonly used depression severity rating scales (the Hamilton Depression Rating Scale and the Montgomery-Asberg Rating Scale).

The final results chapter presents a qualitative analysis of in-depth interviews in which elderly people describe their experiences of depression.

Chapter 2: Review of the Literature

Depression in Elderly People

Introduction

Depressive illness in the elderly person is considered difficult to diagnose due to unusual or atypical presentations, and the influence of age and chronic illness. The effects of ageing and events associated with increasing age create an increasingly heterogeneous population (Neugarten 1975) with specific diagnostic difficulties. Cohort effects and cultural differences are responsible in part for the ways in which people express emotional distress, with obvious displays of emotion or less overtly in increasingly demanding behaviour or as physical symptoms; and the differences in the ways in which patients interact with their doctors and other health professionals (Ouslander 1982).

Somatic symptoms (insomnia and hypersomnia, decreased appetite, loss of energy, retardation), cognitive symptoms (loss of concentration and memory problems) and social withdrawal (disengagement) have been considered to be part of normal ageing; even persistent thoughts of death may be normal in old age (Cumming and Henry 1961, Levkoff et al 1987, Poon 1985, Salthouse 1985).

Depression may be tolerated, and even expected in and by the elderly person (Alexopolous 1992, Bowling 1990). There is little evidence that ageing itself contributes to the development of depressive illness, although the biological effects of ageing have been implicated (Jacoby 1981, Philpott 1986, Post 1972). However, age-associated social, physical and cognitive events may correlate with or predict depressive illness. Social factors which affect people increasingly as they age are generally accepted to be mainly negative, with death of friends and family, reduced income; and loss of occupation, role, independence and home predictably more likely. Lower socioeconomic class, being widowed, and living alone are all associated with an increased risk of depression. (Blazer 1991, Palinkas et al 1990) The prevalence of depression is probably no higher than during middle age (Blazer and Williams 1980, Gurland 1976, Lindesay et al 1989, Newmann 1989) and may even be lower (Bland et al 1988, Robins et al 1984, Weissman et al 1988). The clinical syndrome of

depression should be differentiated from appropriate mourning and sadness, demoralization, dejection, defeat and frustration (Blazer 1982, Renshaw 1973).

Depression has been particularly associated with increased levels of other mental symptoms such as anxiety disorders; and with poor physical health, as in younger adults (Boyd et al 1984, Gurland et al 1983, Kay 1988, Kennedy et al 1990, Lewisohn et al 1991). Physical illnesses (which will be addressed in detail in the next section) are increasingly common: arthritis, circulatory diseases, Parkinson's disease, dementia, and other conditions associated with decreased functional ability, are all more likely with advancing age.

When diagnosed, depression is most often ignored or inadequately managed. This may be due to therapeutic nihilism or concerns about the safety of pharmacological treatments, lack of evidence regarding efficacy, and the limited availability of non-drug treatments. Various forms of psychotherapy, which may be as useful as antidepressant drug treatments, are particularly difficult to access.

Baldwin (1988) suggested that

'The stereotypes of rigidity...and untreatability, the notion that all disorders manifested in the later years are organic and irreversible, the belief that all emotional symptoms are merely normal accompaniments of old age itself, and the fear aroused by the association of aging with dying are among the reasons that have been suggested for psychotherapists' neglect of the elderly.'

Prevalence

Reported prevalence rates are dependent upon the methods used to identify depression. Some diagnostic criteria require dysphoric mood to be present for the diagnosis to be made, some specify that the severity be such as to interfere with normal role performance, or lead to help-seeking or self-medication. But the main feature of depression may, in elderly people, be anhedonia rather than dysphoria; no role impairment may occur; and when and why people seek help may be subject to, for example, cohort effects (Boyd and Weissman 1982). Accepting depression as normal would certainly preclude help-seeking. Copeland et al (1987a) and Bowling (1990) found that an increase in the severity of psychiatric symptoms in their samples actually reduced the likelihood that symptoms of depression would be reported to the GP; and 'Little is still known about the factors influencing illness and consulting

behaviour among older age groups, particularly in relation to psycho-somatic symptoms...' (Newmann 1989). Diagnostic criteria may also disallow symptoms in the presence of possible physical explanations, so that in people with physical illness depression may be underdiagnosed (Henderson et al 1993).

Some studies have relied upon poorly-validated one-stage self-report procedures for estimates of prevalence, or have employed unvalidated cut-points for measures of severity. Much of the research on ageing and depression has concentrated on a limited range of age groups, people without significant physical illness or frailty, or people who have selected into treatment who may represent a small fraction of the population with depression (Shapiro et al 1984).

Reported rates for depression in the community therefore vary from one percent to 28%. Cole and Yaffe (1996) estimated from the literature the median prevalence of moderate to severe depression in people aged 65 and over to be 2.7% (range 1.3% to 12%). Berkman et al (1986), using the Center for Epidemiological Studies-Depression Scale (CES-D) (Radloff 1977), found 11.3% of men and 19.2% of women scored over 15 in a stratified sample of over 2000 people aged 65 and over. The Short-CARE screening instrument (Gurland et al 1977) identified 15% of a sample of nearly 700 people aged 65 years and over as depressed (Manela et al 1996).

Using the GMS, the prevalence rates for moderate to severe depression in the community were noted to be around 20% in London (Copeland and Gurland 1987), and 11% in Liverpool (Copeland et al 1987a). The rate of severe depression was the same for men and women, but the rate of moderate depression was higher for women. Most research has consistently shown a higher prevalence of minor depression among women (e.g. Beekman et al 1999, Copeland et al 1987a, Magni et al 1985) although others (Steuer et al 1980) have found sex not significantly correlated with depression scale scores.

In a Liverpool primary care practice, 28% of elderly patients (mean age 71.2 years) attending the surgery had a GMS-AGECAT score of DN3 or DP3 or above (Upadhyaya and Stanley 1997). In a general community sample of people aged 77 to 90 years, which included some in residential and nursing homes, the prevalence of DSM-III-R major depression was found to be 2.4%, although trained interviewers rated 5% of men and 9% of women as depressed.

In nursing homes, the prevalence of depression has been found to be higher than in the community, with between 30% and 50% suffering from major and minor disorders (Ames 1990, Blazer 1982, Sadavoy et al 1990)

Prognosis

Depressive illness in old age was described by Murphy (1983) as characterised by short remissions and frequent and prolonged relapses: at the end of 12 months, just over one third of her patients had made a good recovery, one third had experienced continuous depression, and the remainder had recovered and relapsed. In an analysis of the natural course of depression in the elderly without ECT or antidepressants, Anderson (1936) found the mean recovery time in the 50% of patients who did recover to be 17 months (range 5-42 months).

Early studies noted that poor outcomes were associated with a longer duration of depressive symptoms (more than two years), the appearance of disabling physical illness or cerebral pathology, and age greater than 70 years (Post 1962, 1972); all except older age have been substantiated in later research. Both chronic health problems and acute new physical problems predict a poor outcome of depression at one year (Baldwin and Jolley 1986, Ciompi 1969, Murphy et al 1988). More specifically, Kivela (1994) found that poor prognosis for depression was related to the advent of serious illness, worsening of physical health or functional capabilities, and the occurrence of pulmonary or cardiovascular disease.

Musetti et al (1989) in their sample of psychiatric patients without physical illness, concluded that elderly people were as likely as younger to recover completely from an episode of depression, and no more likely to develop chronic depression.

Pharmacological treatment with antidepressants, psychodynamic psychotherapy and cognitive-behavioural therapy have all been found to be efficacious (Morris and Morris 1991, Koder et al 1996). Energetic treatment with well-established methods has been found to result in worthwhile and sustained improvement for most patients (Baldwin 1988, Baldwin and Jolley 1986, Burvill et al 1986) and *'there is no evidence that depression worsens with advancing years, nor the prognosis, and the only reason for being less enthusiastic about treating elderly depressives must be ageist sentiments'* (Baldwin 1988).

Minor depression is associated with functional impairment, decreased quality of life, and a tendency to develop major depression and therefore requires attention

(Tannock and Katona 1995). Concerns about side-effects of treatment may inhibit some physicians from giving antidepressant drugs, but failure to treat depression in the elderly person may be more dangerous (Henry and Martin 1987).

Mortality

There is increasing evidence that depression results in increased mortality (Baldwin and Jolley 1986, Bruce and Leaf 1989, Burvill and Hall 1994, Evans 1993a, Hermann et al 1998, Meats et al 1991, Murphy 1983, Robinson 1989, Whooley and Browner 1998). A large prospective study of elderly women noted that those with six or more depressive symptoms on the Geriatric Depression Scale had twice the risk of death during a seven-year follow-up (Whooley and Browner 1998). In Murphy's (1983) study, the deaths among depressed elderly psychiatric patients were three times the expected rate for men and twice the expected rate for women, with 19% of men and 11% of women dead over 12 months. Over four years, the overall mortality rate for the depressed group was 34.2% and for the community control group 14%, a statistically significant difference at the 0.1% level for men and 5% level for women. The raised mortality for depressed men was also found in the less severely depressed sub-group from a community sample, even controlling for physical health (Murphy et al 1988), which suggests that minor depression, as well as major depression, may have clinically significant effects which should not be underestimated. Whooley and Browner (1998) noted that each additional symptom on the GDS was associated with a 6% increase in all-cause mortality among elderly women.

Cardiovascular disease has been found to be the principal cause of death noted in mortality studies of depression (Murphy et al 1988, Whooley and Browner 1998). Avery and Winokur (1976) found that depressed patients with cardiovascular disease who received adequate antidepressant treatment were significantly less likely to be dead after three years than those who were inadequately treated, suggesting that depression may provoke cardiac disease: *'Although it appears that depression can be a fatal disorder, particularly in old age, it has been shown that effective treatment significantly reduces subsequent mortality. ...inadequate treatment of depressive illness also results in a significantly increased mortality from cardiovascular disease'* (Avery and Winokur 1976).

Suicide, although a rare event, nevertheless reaches its peak incidence in old age: fifteen percent of the population is elderly, but older people account for 25% of all suicides (Lindesay 1989). Depressed elderly men with chronic illness are at greatest risk (Barraclough 1971, Kennedy et al 1989).

The association of depression with physical illness may be indirect. There may be occult disease, such as malignancy, associated with depression; or there may be factors associated with both depression and increased risk of death, such as alcoholism, smoking, functional impairment, lack of exercise, poor compliance with medical treatment, low levels of social support, and stressful life events (Whooley and Browner 1998).

Depressive symptoms in the elderly

Depressive symptoms may apparently be frequently present in the non-depressed older person (Blazer 1982, Butler and Lewis 1982). Over half of non-depressed elderly people in one study reported feeling slowed down, low in energy, experienced restless or disturbed sleep, complained of worrying too much, and felt pushed to get things done (Oxman et al 1990). Girling et al (1995) reported that 67% of their very elderly sample felt they had 'less energy than two years ago.' In a large community sample of people over 60 years old, sleep disturbances, fatigue, agitation or retardation, appetite disturbances, thoughts of death, and difficulty concentrating were reportedly common (Fredman et al 1989). In another study, over one third of the sample reported sleep disturbance and feeling subjectively slowed down; over one quarter complained of restriction of energy (Downes et al 1988).

Kivela (1994) found that the most common symptom in the non-depressed was sleep disturbance, present in 43% of women and 36% of men. Other studies have reported feelings of enervation and low energy (Gaitz and Scott 1972), sleep and appetite disturbances, and constipation (Ouslander 1982, Berry et al 1984), and other somatic symptoms (Blumenthal 1975) to be frequent among elderly people in general. In 430 Swedish people 75 years and over without dementia (only 5% of whom met criteria for depression), sleep disturbance was present in one third, loss of energy in 20%, dysphoria in 14%, psychomotor change in 13%; and loss of interest, concentration loss, and appetite disturbance in around 10% (Forsell et al 1993).

Other studies have reported some symptoms to be quite rare in the absence of depression: retardation 4%, crying 1%, and concentration loss about 5% in the study by Kivela (1994); loss of appetite in only 5%, and preoccupation with physical complaints in only 1% of the sample reported by Downes et al (1988); and depressed mood was found in only 5%, and loss of libido in 1.4% by Fredman et al (1989). Girling et al (1995), in a very elderly sample, found pervasive dysphoria present in 6%.

Table 1 summarises the findings from these studies. The most commonly reported symptoms among the elderly population in general are sleep disturbance, loss of energy, thoughts of death, and frequent worrying, suggesting that these are unlikely to be useful as discriminating symptoms of depression. Infrequent symptoms are depressed mood, crying, and anhedonia (difficulty in experiencing interest or pleasure, manifested by loss of interest in or inability to take pleasure in normally pleasurable activities). There is in particular disagreement in the data over appetite disturbance, loss of concentration, and psychomotor changes, which have been reported both as commonly present and also as found in less than five percent of the older population. It is worth emphasising that these symptoms were mainly categorised as present or absent, without any clarification of pervasiveness or degree of severity.

Girling et al (1995) found that the only depressive symptom which increased with age in the very elderly was feeling that life was not worth living. Berry et al (1984) however, comparing age groups among healthy, non-depressed elderly people, found that while there were no increases with age in the psychological items of the Zung Depression Scale (ZDS) (Zung 1965) in either men or women, among women there was a significant increase in somatic depressive symptoms. Specifically, older women reported more insomnia, constipation, loss of appetite, and loss of interest in sex.

Table 1: summary of the prevalence of depressive symptoms that have been found in studies among elderly people

<i>less than 10%</i>	<i>>10%</i>	<i>>25%</i>	<i>>33%</i>	<i>>50%</i>	<i>'common/frequent'</i>
Depressed mood/ depressed most of the time	dysphoria		Occ. sad or depressed		
loss of libido					
appetite disturbance	appetite disturbance				appetite disturbance
					constipation
preoccupation with physical complaints					
retardation	psychomotor change		Feeling slowed down	Feeling slowed down	agitation/retardation
crying					
concentration loss	concentration loss				concentration loss
	loss of interest				
	pessimism				
	loss of energy	loss of energy	Loss of energy	loss of energy/less energy than 2 years ago	loss of energy
					fatigue
	sometimes life not worth living				thoughts of death
	Trouble sleeping		Sleep disturbance	Sleep disturbance	sleep disturbance
	Irritable		Feeling tense	Worrying too much	
		indecisiveness			

Complaints of difficulties with cognitive processes such as concentration, memory loss and slow thinking; and somatic symptoms including sleep disturbances, fatigue, apathy, constipation, appetite disturbance, and motor retardation have been assumed to be part of the normal ageing process, or are thought to be so common as to be considered normal, and the increased presence of physical illnesses may influence the interpretation of such symptoms and signs (Dement et al 1982, Levkoff et al 1987, Melinger et al 1985, Poon 1985, Salthouse 1985).

There may, then, be many symptoms normally associated with depression in younger people that are in fact commonly experienced by older people who are not depressed. Particular signs and symptoms have, however, been noted to be related to depression in elderly people.

Features of depression

During the development of the Geriatric Depression Scale (GDS) in depressed and non-depressed elderly people, Yesavage et al (1983) found that of the 12 somatic items (including anorexia, gastrointestinal symptoms, weight loss, and sleep disturbance) among the 100 original items, none was among the 30 which correlated most strongly with the total score; the range of correlations for somatic items was from -0.07 to 0.45, with a median correlation of 0.33. The lowest correlations among the initial 100 questions were for items on constipation, libido, appetite, and somatic anxiety, symptoms commonly included in depression rating scales. Steuer et al (1980) reported similar low item-total correlations in the ZDS for constipation, libido, somatic anxiety, and agitation. This suggests that these somatic symptoms in particular may not be part of the syndrome of depression in elderly people.

The highest item-total correlations reported for both the GDS and the ZDS were for questions about dissatisfaction, emptiness, depressed mood, and personal devaluation, symptoms suggesting both dysphoria and anhedonia (Steuer et al 1980). Other studies have found that the most common symptoms of depression included loss of self-esteem, feelings of helplessness, feelings of emptiness, and complaints of cognitive deficit (Weiss et al 1986, Goldfarb 1974, Freedman et al 1982). General anxiety, and subjective complaints of nervousness and irritability, have been noted to be far more common presentations of depression than sadness (Shulman 1989).

Age-related features of depression, which may be cohort effects or associated with co-morbid disorders, may affect the presentation.

Somatisation and 'masked depression'

The presence of functional and subjective disability, combined with somatic symptoms but without prominent dysphoria or guilt feelings is sometimes described as 'masked' depression (Goldfarb 1974). Somatic symptoms have been found to be more common than dysphoric mood as a central feature of depression in elderly people by some research (Blazer and Williams 1980, Salzman and Shader 1978). Copeland et al (1987b) noted that one third of elderly respondents had many depressive symptoms but denied feeling depressed; and somatisation (defined as an adaptive coping mechanism in which depressive affect is not experienced or felt, but translated into bodily symptoms and physical suffering), and denial of depression have been observed by others (Burvill 1987, Katona 1991, Salzman and Shader 1978). Salzman and Shader (1978), in their review paper, suggested that depression in the elderly may be difficult to recognise due to counterphobic defense mechanisms, denial processes, and the expression of depression through somatic complaints and/or hypochondriasis. A variety of somatic symptoms may be used unconsciously to mask or to represent depression, communicate distress and request help, including gastrointestinal complaints such as constipation, flatulence and abdominal pain; mouth problems such as complaints of a bad taste, toothache and burning tongue; feelings of lassitude, fatigue, loss of strength, headache, backache and stiff joints, other complaints of pain and 'aching all over' (Salzman and Shader 1978).

Salzman and Shader (1978) and Wells (1979) felt that elderly people tended to be resistant to psychiatric evaluation, and 'often reluctant to admit depression' (Salzman and Shader 1978), although they offer no evidence for their assertion that the elderly in particular commonly use denial as a defense mechanism. Yesavage et al (1983), in the development of the GDS, were careful to phrase items in a way that would not cause offense or defensiveness in older people. They suggested that there is 'reluctance' on the part of the elderly person to 'admit' to depression.

This would imply then, that rather than discounting somatic symptoms in the diagnosis of depression in the elderly, that the physical signs should be taken into account more widely: somatic symptoms must not be ignored if they may be the only

manifestation of depression in the old person. Hypochondriacal preoccupations may simply, however, be a reasonable preoccupation with somatic dysfunction and pain (Blanchard et al 1994, Costa and McCrae 1985).

Other evidence indicates that depressed affect is not commonly denied or somatised. Mahoney et al (1994) found that asking elderly veterans clinic out-patients (mainly male) 'do you often feel sad or depressed?' was as sensitive and specific as the 30 item GDS in detecting depression, with a positive predictive value of 85.4% and a negative predictive value of 90%. Oxman et al (1990) reported that older patients with a clearly defined depressive disorder, when asked, did not deny depression, and that their symptoms were not appreciably different from those of younger depressed patients.

Passik et al (1998) suggested that 'There may be characteristics of patients making them 'hard to read.' In a study of 53 attenders at a community day centre (mean age 75 years), almost half of whom were probable psychiatric cases and acknowledged that they were depressed, Goldney and Hugo (1984) concluded that the people with psychiatric disorders were unrecognised by their physicians because they were 'inhibited in expressing their emotions' and that 'It is not unconscious denial or lack of psychological mindedness which prevents such [depressive] illness being diagnosed, but rather a conscious inhibition of affect.' It has been found that physicians are least likely to identify depression in male patients (Callahan et al 1997, Stoppe et al 1999). Traditionally, men are thought to be inhibited in expressing their emotions. However, there is little recent evidence offered for the still-common assumption, which has been refuted by several authors (Mahoney et al 1994, Musetti et al 1989, Oxman et al 1990), that elderly depressed people in general are unlikely to recognise their own depression.

Activity Levels and Anhedonia

Being depressed and being older have both been associated with being less active; and although low activity levels have been found to be significantly correlated with both age and depression, the strength of the correlation with depression was greater than the correlation with age. Furthermore, lowered activity levels are not only associated with, but predict depression. (Blazer et al 1991, Palinkas et al 1990)

It may be that the presentation of depression in the older person is more likely to include anhedonia than depressed mood. In a study of 77 depressed and non-depressed elderly people (mean age 82.8 years) living in residential care, Lawton et al (1996) examined daily mood variation over 30 days, with ratings for positive affect (feelings of energy, warmth, interest, happiness and contentment) and negative affect (annoyance, depression, irritation, worry and sadness). When affect ratings were compared among those with major, minor, and no depression, those without depression had significantly higher positive and significantly lower negative affect ratings compared with both depressed groups. People with major depression had the lowest positive and the highest negative affect ratings, although there were no differences between major and minor depressed groups on the specific items measuring annoyance, irritation and worry. The authors state that '*...it was anhedonia (the relative lack of positive feelings) more than pervasive depression that seemed to be most characteristic...[and]...frank dysphoria cannot be relied on as the cardinal marker of major depression among older people.*' Non-depressed affect was characterised by an absence of negative states: '*the norm appears to be a general sense of mild, but not necessarily high, pleasure*' and the authors conclude that '*stretches of anhedonia were least often broken among depressed people.*'

The average number of pleasant activities engaged in, and the subjective enjoyability of potentially pleasant events, have been found to be lower in depressed than in non-depressed elderly people, with a significant decrease in the frequency of engagement in potentially pleasant activities as a function of age and of depression; older people engaged in a smaller number of pleasant activities, but this was not due to a decrease in the power of reinforcers: a decrease in the subjective enjoyability of events was uniquely associated with depression and loss of pleasure was a symptom of depression and not normal ageing (Lewisohn and McPhillan 1974).

There is a possibility that the greater weight of anhedonia in the presentation of depression may be related to decline in cognitive function.

Dementia

Dementia in old age increases with each decade: 1% of 65-74 year olds, up to 10% of over 75s, and around 20% of people over the age of 80 may have irreversible global cognitive decline (Ineichen 1987). The presence of cognitive deficits in

depression, the coexistence of depression with dementia, and overlapping symptoms such as psychomotor retardation and concentration loss contribute to diagnostic difficulties (Folstein and McHugh 1978, Jarvik 1976, Henderson 1990, Wells et al 1989).

Depressive pseudodementia (Kiloh 1961), in which the symptoms and signs of depression mimic dementia, is differentiated from dementia by a history of recent and relatively sudden onset, with signs and symptoms of depression such as anhedonia and dysphoric mood present prior to the onset of cognitive deficits, poor motivation more likely during cognitive testing, and a lack of other features of dementia such as anomia. It has been noted that pseudodementia may precede later dementia, suggesting a possible threshold effect (Alexopoulos 1990, Kral and Emery 1989). Misdiagnosis of both dementia and depression is not uncommon (O'Connor et al 1988, Ryan et al 1995).

Sadavoy et al (1990) noted in their study of depression in nursing home residents (mean age 82) that *'any degree of [cognitive] impairment...increases the likelihood of coexisting depressive affect.'* In another study, a significant negative correlation between Mini Mental State Exam (MMSE) (Folstein 1975) scores of cognitive function, and Montgomery-Asberg Depression Rating Scale (MADRS) (Montgomery and Asberg 1979) scores was found (Sadavoy et al 1990). Several authors have found that depression is more common in mild than in more severe cognitive impairment (Burke et al 1988, Forsell et al 1993, Rosenberg et al 1988).

Forsell et al (1993) conducted a principal components analysis of the DSM symptoms in depressed people with varying degrees of dementia and no dementia, and found two factors representing mood and motivation. Psychomotor change, thinking and concentration disturbance occurred frequently in dementia; sleep disturbance was less common, and slow thinking and indecisiveness more common in demented than normal subjects. Loss of interest was a consistent symptom regardless of the degree of dementia, and higher rates of loss of energy were noted in people with greater dementia. The highest motivation disturbance was found in the most demented, and Forsell et al (1993) concluded that depression might manifest differently in elderly people, especially in those with concurrent dementia, the presentation varying according to the severity of dementia, and that this may therefore suggest an organic basis.

Summary

Somatic symptoms do appear to be common among elderly people in general, but depression might also present with somatic complaints. The apparent prominence of anhedonia, reduced motivation, and loss of interest as symptoms of depression may or may not be due to conscious inhibition of affect or related to disorders of cognitive function.

Comparisons between older and younger samples suggest there are some differences in the profile and presentation of depression, but these studies are not without ambiguity.

Comparisons in symptomatology between older and younger depressed people

Comparisons between the symptomatology of depression in old and young people depend crucially upon the criteria for sampling and referral. With the tendency for older people to under-report, the low recognition rate, and difficulties in diagnosis already noted, it is likely that studies which have used psychiatric in- or out-patient populations may have included sub-populations of those depressed elderly patients with the most severe symptoms and psychotic features.

Some studies have indicated that symptoms of depression in medically healthy elderly depressed people differ very little from those in younger people, and that age-related differences were not associated with depression (Himmelhoch et al 1982, Blazer et al 1987, Oxman et al 1990).

A cross-sectional study of people aged 55 years and over (mean age 67, range 55 to 91) found that *'symptoms of depression in non-hospitalized older adults, in general, are not heavily influenced by age...'* (Dessonville et al 1982). Furthermore, Lewisohn et al (1991) commented that *'the changes associated with age and with depression are for the most part distinctive...complaints about memory and sleep difficulties and low self-esteem...are more likely to be manifestations of depression rather than consequences of advanced age...this is possibly because the depression and aging patterns have relatively little in common.'*

Musetti et al (1989) *'failed to confirm common clinical stereotypes which ascribe greater somatisation, hypochondriasis, agitation, [and] psychotic tendencies'*

to elderly depressed people. Their elderly sample, psychiatric out-patients with DSM-III-R major depression and without serious or disabling medical conditions (mean age 69.5 years, 76% female), were more likely to experience weight loss, somewhat more retarded and fatigued; and less suicidal, self-blaming and hostile than the younger depressed patients. Blanchard et al (1994) also noted that only 5% of their sample of GMS case-level depressed elderly people had 'hypochondriacal' symptoms.

Blazer et al (1987), comparing middle aged with older (mean age 67.5 years) psychiatric in-patients, also found almost no differences in symptoms between groups; however, twice as many of the younger group reported suicidal ideation (88.9% compared with 47.4%, $p < 0.01$). Brodaty et al (1991) noted that among psychiatric in- and out-patients with major depression, older patients (mean age 69.1 years, range 60 to 84) were more severely depressed on physician rated measures, and were rated as more severe on measures of endogenicity and retardation. Older patients were more likely than younger patients to have delusions, agitation, and anorexia and less likely to have hypersomnia or to gain weight. The elderly patients had a higher rate of psychosis; when this was controlled for in the statistical analyses, however, anorexia and increased severity lost their significance. A trend for increasing agitation and psychosis with age was also noted in the younger patients. A cohort referral bias, which resulted in a more severely depressed elderly sample, was considered a possible explanation for a more florid elderly sample. Kivela and Pahkala (1988) found depressed mood to be negatively correlated with loss of insight, which also contradicts Brodaty et al's (1991) conclusion that psychotic depression is more common among the elderly.

Depressed old people in the community have been found to have more hypochondriacal symptoms (Brown et al 1984, Gurland 1976, Steuer et al 1980), greater initial insomnia and agitation, and less depersonalisation, loss of libido, and suicidal intent (Brown et al 1984) than younger depressed people. Among depressed primary care attenders, older patients were significantly less likely to report feeling pushed to get things done, being easily annoyed or irritated, or feeling no interest in things (Oxman et al 1990). Somatic complaints, feeling useless, sleep disturbance, memory complaints, and lethargy have been reported as more common; and depressed

mood, guilt feelings, and suicidal ideation less common in elderly compared with younger depressed adults (Oxman et al 1990, Kahn et al 1975).

Other studies have noted that elderly depressives, more than younger depressives, experienced anxiety, preoccupation with physical symptoms, fatigue, apathy, retardation, social withdrawal, loss of drive, and disinterest (Zung 1980, Klerman 1983, Ruegg et al 1988). Dessonville et al (1982) noted that their sample group aged over 70 years were less likely than the younger group (55 to 69 years) to have symptoms of self-reproach and discouragement. However, of 24 symptoms assessed, 21 showed no significant differences.

There do appear, then, to be some differences between older and younger adults in the symptoms of depression (summarised in Table 2, page 37), although a significant amount of the research has been with relatively young samples of elderly people, and agitation has been reported as both more and less common in elderly depressed people. Differences in presentation of depression might include less guilt, dysphoric mood, and overt suicidal ideation, and more features relating to self-esteem, motivation, and somatic complaints in elderly people.

As noted, differences in criteria and sampling may in part be responsible for the observed variation in symptoms and signs. Somatic symptoms (such as anorexia, fatigue and lethargy), which are apparently more common in the older person, may be attributable to comorbid conditions. Some of the less common symptoms in the older person (guilt, suicidal ideation, hostility) may be related to dysphoria rather than anhedonia. Social withdrawal and apathy have been considered to be age-related, but some evidence suggests that depression is more likely to present with symptoms of anhedonia rather than dysphoria in advanced age. Possible reasons for the differences will be explored in further discussion.

Table 2: summarising the symptoms of depression that have been noted in studies comparing younger and older adults

More common in older	No difference found	Less common in older
agitation	agitation	Agitation
feeling slowed down	feeling slowed down	
low energy	low energy	
fatigue		
lethargy		
	everything an effort	
retardation		
sleep disturbance	restless sleep	Hypersomnia
anorexia		
weight loss		weight gain
hypochondriasis/somatic complaints/physical preoccupation	somatisation/hypochondriasis	
anxiety	restlessness	annoyance/irritation
disinterest	loss of pleasure	lack of interest
social withdrawal		
reduction in drive/apathy		
feeling useless/worthless	feeling worthless	
memory loss		
delusions		
	loss of libido	loss of libido
	crying	
		suicidal intent/ideation
		guilt/self-blame/self-reproach
		depressed mood
		Hostility

[N.B. Similar symptoms are grouped together. Differences in instruments used to assess symptoms mean that comparisons are not necessarily exact.]

Discussion

There is an assumption that elderly people are reluctant to talk about psychological distress, and it has been noted that depression in some elderly people may be 'masked' to the extent that they themselves do not acknowledge their own depressed affect, and unconsciously substitute physical problems as an expression of their distress. However, there is little recent evidence that this presentation is common, and what seems more likely is that the elderly may be less likely to volunteer evidence of their psychological distress, perhaps because they too accept that it is 'normal' to feel depressed, due to their age, illness or circumstances, or a reluctance to complain. Additionally, anhedonia may be more prominent with increasing age as the presenting feature or central feature of depression.

Some depressive symptoms are apparently common to some extent among old people generally: sleep disturbance, complaints of loss of energy, increased worrying, and thoughts about death. In women particularly, somatic complaints (insomnia, reduced appetite, loss of libido, and constipation) appear to increase with age. However, other depressive symptoms are relatively uncommon; dysphoria, anhedonia and crying have been found to be rarely reported. There are conflicting reports concerning the prevalence of psychomotor disturbances (agitation and retardation), and loss of concentration.

Numerous differences have been noted between the symptoms of depression in younger and older adults. The symptoms found more frequently in depressed elderly adults seem mainly to be those more common among elderly people in general, particularly some somatic symptoms of depression: appetite disturbance, fatigue, lethargy, and retardation. Feeling slowed down or low in energy, having disturbed sleep, and somatic complaints or hypochondriasis may or may not be more common in the elderly depressed. In non-depressed elderly people, feeling slowed down, low in energy, and having disturbed sleep may occur in more than half the general population, and may not be depression-associated. Preoccupation with somatic symptoms may be present in less than 10% of the general elderly population. There is contradictory evidence concerning agitation, which has been noted to be both

more and less common in the elderly depressed, and also of not different frequency. Agitation may also be a frequent symptom in the non-depressed.

Less common symptoms in elderly depressed than younger depressed people are hypersomnia and weight gain. Symptoms that may or may not be less common among the elderly compared with the younger adult depressed person may be loss of libido. Loss of libido is not common in the general elderly population.

The research investigating the presentation of depression among people with various degrees of dementia suggests that the presence of sub-clinical levels of organic brain dysfunction, which is increasingly more likely with age, may influence the symptom profile of depression in elderly people. Chronic and acute physical illness, both more likely with increasing age, may also be responsible for differences in presentation. Anhedonia, and related motivational disturbances, may be more typical than dysphoria as a cardinal symptom. Constipation, loss of appetite, loss of libido, somatic anxiety, agitation, and possibly insomnia may not be as important in the construct of depression in older people as in younger adults.

Depression in Physical Illness

Introduction

'Concurrent depression and physical illness feed on each other, and the presence of one inhibits management of the other.' (Von Knorring 1965)

There is a consistent association between physical illness and depression, independent of age. The incidence of depression increases in relation to the number of illnesses present (Kukell et al 1986, Murphy 1983), and concomitant depression in the physically ill is associated with increased morbidity and mortality (Herrmann et al 1998, Lloyd and Cawley 1983, Silverstone 1990a, Vogt et al 1994). Depression concurrent with a medical condition further worsens already impaired functioning (Wells et al 1989), and there is *'no doubt at least that mood disorder [in physically ill people] affects quality of life'* (House et al 1989).

Rosenberg et al (1988) say that *'most researchers... have assumed that the depressed mood is a consequence of the medical illness,'* either as a true symptom of a medical disorder or as a reaction to illness or hospitalisation; but depression may be coincidental, may precede or even be implicated in the ontogenesis of physical illness (Rodin and Voshart 1986). Most depression identified in hospital patients is mainly predicted by depression pre-admission (Rosenberg et al 1988, Silverstone 1996b).

Prevalence of depression in medically ill patients

There is a wide variation in the reported prevalence of depression in medical illness, in part accounted for by the frequent occurrence of symptoms of depression in the absence of a diagnosable syndrome, the variety of diagnostic criteria employed, and the differences in catchment areas and in population with regard to cognitive function, illness duration and illness severity. Reported prevalence rates will be lower in studies with higher rates of exclusions for illness and refusal. Kathol et al (1990b), comparing four different diagnostic criteria in one group of patients with cancer, found the percentage identified as having major depression varied from 25% to 38%.

In general medical patients, between 5% and 38% have been classified as depressed (Kathol et al 1990b, Maguire et al 1974, Rodin and Voshart 1986,

Rosenberg et al 1988, Silverstone 1996b, Moffic and Paykel 1975). Two studies using modified diagnostic criteria without somatic symptoms have estimated the prevalence of major depressive disorder at around 5% in patients without significant cognitive impairment (Silverstone 1996b, Rapp and Vrana 1989), with a further 6.3% diagnosed with adjustment disorder with depressed mood (Silverstone 1996b). In a study of 301 patients with acute stroke with a median age of around 60 years, major depression was identified in 22%, and minor depression in 23.9%, according to DSM-IV criteria (Kishi et al 1996). In oncology patients aged 50 to 80 years of age, 36% were identified by the ZDS as significantly depressed (15% with moderate to severe levels of symptoms) (McDonald et al 1999). In oncology patients specifically, no gender differences in prevalence rates of depression have been noted (DeFlorio and Massie 1995). Feldman et al (1987), however, found affective disorders to be twice as common in women than men among the 382 medical in-patients assessed in their study. Using a relatively stringent two-stage diagnostic procedure, seven percent of patients (aged 17 to 98 years) were diagnosed as depressed. In another study, the prevalence of major depressive disorder in medical in-patients (mean age 51.3, 60% female) with chronic illness was found to be 24%. Of the depressed, 14% (n = 3) also had generalised anxiety disorder (GAD); only one patient out of 89 assessed had only GAD (Clark et al 1998).

Aetiology

Medical conditions that may commonly present or be associated with depression include endocrine, respiratory, neurological, infectious and cardiovascular diseases; hypertension, metastatic carcinoma, electrolyte imbalance, anaemia, peptic ulcer, and B vitamin deficiency (Cavanaugh 1984, Hall et al 1978, Robinson et al 1983).

Depression itself may directly or indirectly contribute to physical illness. Depression has been found to be associated with a reduced immune response, especially decreased lymphocyte activity, suggesting increased vulnerability to infection (Bartrop et al 1977, Spurrell and Creed 1993). Depression characterised by loss of motivation can lead to poor nutrition and general self-neglect. Depression may inhibit functional recovery and rehabilitation, possibly due to lack of motivation and increase in hopelessness and anergia (House 1987, Parikh et al 1990, Schubert et al

1992, Starkstein and Robinson 1989); and illness may be exacerbated through non-compliance with treatment, overuse of alcohol, non-prescription drugs and smoking (Fava et al 1982, Stroudmire and Thompson 1983). Non-compliance with treatment can even be covert suicidal behaviour (Dorpat et al 1969).

Depression may be the consequence of stress associated with chronic or acute serious illness (Von Knorring 1965). Physical illness may threaten self-esteem and identity with relation to social, work and family roles, and an associated sense of bereavement. Lipowski (1969) suggested that the personal meaning of an illness, determined by influences including personality, social circumstances, the nature of the illness and its treatment, explains the psychological response. Personality, coping styles, and the availability and quality social support may have a potentially protective effect (Rodin and Voshart 1986, Moffic and Paykel 1975).

Moffic and Paykel (1975) determined that 65% of the depressed medical patients in their study were depressed as a consequence of their medical illness, in 21% depression preceded the symptoms of physical illness, and in 14% the illness was a direct consequence of the depression.

Pain

In patients with chronic pain, the likelihood of a concomitant depressive illness is greater. The number of reported pain complaints (headaches, back pain, abdominal, chest, temporomandibular disorder) has been found to be a better predictor of major depression than pain severity or pain persistence (Dworkin et al 1990). Among the medically ill, those who are depressed may have significantly more physical symptoms, although these are not necessarily the somatic symptoms of depression (Mathew et al 1981). Pain has been found to be more common among depressed than non-depressed patients (Von Knorring 1965).

Depression in different illnesses

Some studies have found no differences in rates of depression associated with different illnesses or body systems (Langer 1994, Moffic and Paykel 1975, Silverstone 1996b, Silverstone et al 1996); others have noted increased prevalence among patients with neurological, gastrointestinal, dermatological, cardiovascular, and respiratory conditions (Moffic and Paykel 1975, Moldin et al 1993, Schwab et al 1967, Vogt et al 1994, Wells et al 1989). Feldman et al (1987), in a sample of 453 medical in-patients, found the prevalence of affective disorder to be most prevalent in

patients with blood malignancies (35%), angina (28%), and respiratory disease (25%).

Disability

It has been suggested that depression may be related to the degree of functional impairment experienced with an illness. However, Folstein et al (1977) categorised 45% of stroke patients as depressed compared with 10% of orthopaedic patients (with hip fracture and severe arthritis) matched for functional disability. Silverstone (1990a, 1996b) noted that depressed patients with the same illness severity were significantly younger than non-depressed patients (mean age 46 years compared with 57 years); and Robinson et al (1983) observed that age was negatively correlated with depression scale scores in their study of mood disorders and stroke ($p < 0.001$). These results may suggest a greater degree of acceptance of illness and disability with increasing age due to the appropriate 'timeliness' of the events, or better coping abilities.

Illness severity

Evidence regarding the association between severity of illness and depression is contradictory. A study of the prevalence of features of depression in general medical patients found that 61% of the severely medically ill, and 21% of the moderate to mildly ill scored more than 14 on the Beck Depression Inventory (the cut-point for identifying depression) (Moffic and Paykel 1975). Koenig (1998), Schwab et al (1967) and Roach et al (1998) also noted depression to be more common in the more severely ill patients in their studies. Stewart et al (1965), basing diagnosis on psychological symptoms only, identified 27% of severely physically ill patients and 13% of mild to moderately ill patients as depressed. (These results may in part explain why depression is associated with longer hospital stay.)

However, depression has been found to be unassociated with severity of physical illness in other studies (Feldman et al 1987, Magni et al 1985, Schleifer et al 1989, Silverstone 1990a, 1996b; Verbosky et al 1993, Wise and Rosenthal 1982). Rosenberg et al (1988) found, in 71 patients aged 18 to 59, that 38% scored above 14 on the Beck Depression Inventory. None of the illness variables, including an objective measure of illness severity, significantly predicted the severity of depressive symptomatology. Depression severity was related to the patients' perception of illness severity, but no relationship was found between depression and

either actual severity of illness or subjective illness beliefs in patients (mean age 38 years) seen for psychiatric consultation in a general hospital (Wise and Rosenthal 1982).

Iatrogenic depression

Finally, drugs given to treat illness may cause or exacerbate depression: beta-adrenergic blocking agents, reserpine, clonidine, hydralazine, digoxin, barbiturates, narcotic analgesics, and steroids have been particularly implicated (Cavanaugh 1984, Keshavan 1997, Small 1991).

Summary

The aetiology of depression in physical illness is far from straightforward. It is not necessarily related to type or severity of physical illness, nor to degree of impairment, and is probably more likely to be an idiosyncratic response by the vulnerable individual to a unique set of conditions.

Morbidity and mortality associated with depression and illness

Increased hospital stay

Depression in ill patients has been found to be associated with longer hospital stay. In Moffic and Paykel's (1975) study, 93% of the non-depressed (i.e. with a score < 14 on the Beck Depression Inventory), but only 67% of the depressed, were ultimately discharged home (although in this study depression was associated with greater illness severity). However, another study noted that medical and surgical patients diagnosed as depressed had significantly longer hospital stay compared with a control group which was matched for severity of illness measured by the APACHE II (acute physiology and chronic health evaluation) score (Verbosky et al 1993). Failure to progress in rehabilitation may be attributable to depression, especially after stroke (Harris et al 1988, Parikh et al 1988).

Increased mortality

In patients with severe life-threatening illness, a significantly increased mortality has been noted in those with depression, independent of age, sex or severity of illness (Roach et al 1998, Silverstone 1990a). In one study of patients with

cardiovascular disease, mortality in depressed patients was twice that in the non-depressed at follow-up (mean 6.6 years) (Aromaa et al 1994). Over a six-month period, patients who were depressed after a myocardial infarct were three times more likely to die than those who were not depressed. Patients with depressed mood within two weeks of suffering a stroke were 3.4 times more like to have died during the subsequent ten years than those without depression (Morris et al 1993). Using the Hospital Anxiety and Depression Scale (HAD) (Zigmond and Snaith 1983), Herrmann et al (1998) found depressed mood (not only major depressive disorder) to be a continuous risk indicator for mortality in a heterogeneous group of medical in-patients, after controlling for age, particularly in patients with cardiac or pulmonary disorders. In data from a nine year study of men hospitalised with medical illness, every one-point increase in depressive symptoms (as measured by the Brief Carroll Depression Rating Scale) accounted for an increased hazard of dying of 10%, unaffected by age (Koenig et al 1999) Depression therefore appears to represent, in some way, a risk factor in illness.

Patients who believe or sense they are in danger of dying might conceivably be more depressed, but this would only explain short-term mortality (Covinsky et al 1999). There is evidence that stress and depression impair wound healing (Kiecolt-Glaser et al 1995), and result in coronary artery ischaemia (Gullette et al 1997). But, more diffusely, depression affects self-efficacy, self-care, thinking, and motivation (Champion and Power 1995). In patients with coronary artery disease (CAD), sub-syndromal (i.e. minor) depression has been found to have as great an adverse effect as major depression on physical functioning, even after controlling for severity of CAD (Sullivan et al 1999).

Whatever the mechanism, depression is associated with unfavourable outcomes in illness.

Methodological problems in depression research in medical populations

Rodin and Voshart (1986), in their review of the literature on depression in physical illness, pointed out some of the methodological problems in this area of research:

1. There is frequently a lack of clarity in case definition. House (1988) notes that the failure to make explicit the criteria for caseness is a serious source of confusion in the research on depression and concomitant physical illness, and suggests that case definition should include as criteria persistent mood disorder associated with persistent physical illness, so that the two may be assumed to have a clinically relevant influence upon each other.

House (1988) also suggests that a definition should ideally be operationally useful, describing those who need treatment, and that 'There is a great need for intervention and outcome studies as a means of assessing the operational validity of current descriptive diagnostic criteria in the context of the general hospital.' If the purpose of case identification is to define a group of people who might benefit from treatment, then the appropriate validation of a measure is outcome in a treatment trial.

2. The assessment measures used should have been standardised for use in the physically ill. Depression measures have generally been developed and standardised in patients with primary psychiatric illness, and appropriate cut-off points and diagnostic criteria to diagnose depression in different medical populations have not been clearly defined. In fact, of the various measures which have been used--self-report, semi-structured interviews, interviews-- House (1988) and Silverstone (1991) consider none to be appropriate and/or properly validated or standardised, including the DSM-III; although DSM-III criteria have been found by others to be valid in physically ill patients (Fedoroff et al 1991, Okimoto et al 1982).

3. Rodin and Voshart (1986) mention the possible bias in reported prevalence due to the relative overuse of medical services by people with mental health disorders, whose psychological symptoms may have influenced the decision to seek medical treatment for an illness which might otherwise have been tolerated. Although this may be an artifact of the sample, it does not negate the importance of identifying those patients who are depressed.

4. The heterogeneity of patient populations makes it important to control for degree of disability and dysfunction, and dose and type of medications.

5. Appropriate control groups should be used.

Depressive symptoms among physically ill in-patients

The somatic symptoms used in the diagnosis of depression can be attributable to physical illness. The prevalence of depression in the same sample of severely ill patients was estimated at 63% when somatic symptoms were included, and 34% when they were excluded (Silverstone 1990a). However, Kathol et al (1990b) found that inclusion of somatic symptoms in their diagnostic criteria did not radically alter the identification of depressed patients, and Rodin and Voshart (1986) point out that false negatives result from attributing somatic symptoms to physical illness, particularly when depression manifests as pain or somatisation. Loss of concentration and complaints of memory impairment or ability to think are not considered to be useful by some authors; and anorexia and fatigue, being common among the physically ill, are also thought to be unhelpful in making the diagnosis of depression (Bukberg et al 1984, Cavanaugh 1984). Silverstone (1990b), looking at changes in MADRS scores following life-threatening illness, concluded that high scores for sleep, appetite, concentration loss, and lassitude could lead to an inappropriate diagnosis of depression if the MADRS were used as a screening instrument.

Depressive symptoms in the non-depressed

Many studies have reported only the presence or absence of symptoms of depression, despite the continuous nature of the distribution of depressive symptoms in the physically ill, as in the general population (House 1988, Farmer et al 1979). Coding the items in the Present State Examination (Wing et al 1974) as present or absent, Van Hemert et al (1993) used a logistic regression model to determine which symptoms best discriminated between depressed and non-depressed medical out-patients (mean age 41 years). Excluding observation items, they found that seven symptoms contributed to the discrimination between depressed and non-depressed patients, five of which related to depression. These were depressed mood, social withdrawal, loss of confidence, sleep delay, and anergia. However, although this study was conducted with medical out-patients, the authors noted that physical illness was generally mild or even non-existent: 78% of those patients diagnosed with a

psychiatric disorder had no medical diagnosis at all. Van Hemert et al (1993), rating symptoms as either present or absent, noted that over one third of the non-depressed medical out-patients complained of tiredness, and more than one in ten reported anergia, poor concentration, and early or late insomnia. Inefficient thinking, loss of interest, and low mood were present in less than 10%.

Depressive symptoms have been found, at least to a mild degree, in approximately one third of medical in-patients (Cavanaugh et al 1983, Rodin and Voshart 1986). These symptoms include sadness, crying, a sense of dissatisfaction, complaints of diminished ability to think or concentrate, discouragement about the future, and indecisiveness. Between one half and three-quarters were found to have retardation, work inhibition, fatigue, and insomnia; and around 40% reported anorexia and weight loss. Somatic preoccupation was found in 84% of the sample (Cavanaugh et al 1983). Irritability also may not be a good discriminator, as 52% of medical patients were noted to have this dysphoric mood (Cavanaugh 1984). Psychological symptoms, such as depressed mood, feelings of loneliness, and irritability; and somatic symptoms, such as fatigue, insomnia, and anorexia, were noted frequently in patients with physical illness without a clinical syndrome of depression by Schwab et al (1967).

In non-depressed acute stroke patients (n = 163, median age 63), one in five reported worrying and guilt, and one in four reported subjective anergia (Kishi et al 1996). Irritability was noted in 10%, social withdrawal in 8.6% and hopelessness in 8%. Early and late insomnia were found in around one in ten, and loss of interest was found in only 1.2% of non-depressed patients. (Kishi et al 1996)

There is some contradictory evidence in these data, summarised in Table 3. Both low mood and complaints of cognitive impairment have been reported as common and uncommon in physically ill patients, and over half the symptoms of depression have been noted in at least 50% of medical patients.

Table 3: summarising depressive symptoms found in studies among physically ill patients

< 10 %	> 33 %	> 50 %	'frequent'
c/o inefficient thinking	indecisiveness concentration loss		
depressed mood	sadness crying		depressed mood loneliness
loss of interest	dissatisfaction discouragement	work inhibition	
	tiredness	Fatigue Retardation	fatigue
	anorexia weight loss		anorexia
	irritability	Insomnia Irritability somatic preoccupation	insomnia irritability

[N. B. Similar symptoms are grouped together, although differences in instruments used to assess depressive symptoms do not necessarily measure identical symptoms.]

Although the somatic symptoms of depression may overlap to some extent with those of physical illness, it is generally found that these signs are more severe and occur with greater frequency among depressed patients than in those without psychological symptoms (Pitt 1991, Kathol et al 1990b, Robinson and Starkstein 1989, Cavanaugh 1984). However, the reported frequency of symptoms may be confounded by the nature of diagnostic criteria which make use of somatic symptoms, and which are therefore almost necessarily more frequent in those who are depressed. The results of studies which have found no significant differences between rates of depression in patients according to severity of physical illness suggest that the



frequency and severity of somatic symptoms (which might be thought to be more prevalent in the more severely ill) are not influencing reported rates.

Which symptoms can be used to discriminate depression in physically ill patients?

The symptom profile of depression may actually be different in physically ill patients, or the symptoms used for diagnosis may be obscured or exaggerated by physical problems (Moffic and Paykel 1975, Stewart et al 1965, Clark et al 1983). A factor analysis of items of the CES-D, and the Illness Behaviour Questionnaire (IBQ) (Pilowsky and Spence 1983) (a measure of pain and maladaptive response to illness) in 325 general hospital in-patients found a strong first factor consisting of depressed affect, somatic symptoms, retardation, hypochondriasis and disease conviction. The authors suggested that 'querulous, self-preoccupied, demanding, irritable patients with marked body consciousness and many physical complaints may have a severe depression.' (Fava et al 1984) Ignoring somatic symptoms in covert manifestations of depression, which include somatisation, pain, abnormal behaviour, non-compliance and refusal of medical treatment, would therefore result in a missed diagnosis of depression.

Observable depression (sad, mournful, tearful, gloomy appearance) was noted to be a valid sign of depression in acute stroke patients: '... 10% of patients had a clinically significant depressive disorder without acknowledging depressed mood' and 'the use of observed depression clearly identified a syndrome of depression which was of the same severity as major depression.' Physical symptoms which discriminated non-depressed stroke patients from those with minor and/or major depression included autonomic anxiety, morning depression, weight loss, early or late insomnia, and subjective anergia. Psychological symptoms that discriminated included suicidal plans and worrying. The two symptoms that best discriminated were loss of interest and hopelessness. (Kishi et al 1996)

Some research has suggested that somatic symptoms may be important discriminators of depression in physically ill people. Hare and Davies (1996) observed that 'sleep disturbance... is very commonly seen in depressed cardiac patients' and that 'significant symptoms of depression reported by depressed cardiac

patients generally include features such as waking at night, fatigue, and reduced concentration.' Moffic and Paykel (1975), using the Beck Depression Inventory (BDI, Beck 1961) found that virtually all items (except change in body image) distinguished between depressed and non-depressed medically ill patients. Somatic preoccupation, insomnia and anorexia, as well as sadness, pessimism, guilt, irritability, and suicidal ideation, discriminated particularly well.

Cavanaugh (1984) offered a thoughtful assessment of the diagnostic symptoms of adjustment disorder with depressed mood and major depression in medical in-patients. She noted that the dysphoric mood of depressed patients may be more intense than in other patients in same situation, the dysphoria predominant and persistent, the patient may not care what happens, and there may be frequent crying. Anhedonia in non-depressed patients is normally not pervasive or severe. Loss of interest in friends and family is particularly symptomatic of depression, and social withdrawal is the behavioural manifestation. Feelings of worthlessness, self-reproach, guilt, failure, and being punished are not normally present in the non-depressed; and severe indecisiveness, if not previously present, is pathological.

Regarding physical signs, Cavanaugh (1984) suggested that severe agitation and retardation are excellent signs of depression; although severe retardation may also be present in Parkinson's Disease, renal failure, hepatic failure, and in critically ill patients with severe dysfunction in other systems; and agitation may be symptomatic of delirium, anoxia, hyperthyroidism, or medication. Mild somatic signs and symptoms which can be attributed to medical disorder should not be considered indicative of depression; but severe, persistent symptoms, out of proportion to the illness and related in time to affective symptoms support the diagnosis. Anorexia in depressed physically ill patients may be related to anhedonia. These patients have a complete loss of interest in food and eating, and can't be bothered eating even though know they should. Insomnia in depression is usually severe: patients report that they sleep only a couple of hours, or can't sleep at all. (Cavanaugh 1984)

Kathol et al (1990b) confirmed Cavanaugh's (1984) conclusions, finding somatic symptoms to be less successful discriminators of depression, although depressed patients still had higher somatic symptom scores than the non-depressed. However, when using a modified diagnostic criteria (without somatic symptoms),

they found no statistically significant differences between the depressed and non-depressed on the BDI scores for somatic symptoms.

Clark et al (1998) also concluded that 'somatic symptoms...may not be accurate indicators of depression in medical patients because they are confounded with the presence of a medical condition.' In a study of the symptoms of depression in medical and psychiatric populations, depressed medical patients differed significantly from the non-depressed medical patients on symptoms relating to motivation, behaviour, subjective perception and anhedonia. Although anhedonia and physiological hyperarousal were to some extent influenced by physical illness, the best discriminators of depression in the medical patients were somatic and behavioral symptoms of depression, anhedonia, low positive affect, and physiological hyperarousal. Clark et al (1998) suggested that '...a greater emphasis on anhedonia or low [positive affect], reduced motivation, and behavioural withdrawal may improve the assessment and detection of depression in chronic medically ill patients.'

Clark et al (1983), using the BDI, assessed 335 medical in-patients (mean age 57.1 years), 101 depressed psychiatric in-patients, and 104 controls, and used latent trait analysis to determine how well items on the BDI discriminated depression in the medically ill. Loss of social interest and a sense of failure discriminated depressed medical patients particularly well. A sense of punishment, indecision, crying, and suicidal thoughts were associated with high levels of depression; and a feeling of dissatisfaction discriminated even at low levels of depression. Items that did not discriminate at all well were somatic: sleep disturbance, loss of appetite, weight loss and fatigue.

Crying was also found to discriminate depressed from non-depressed older medical in-patients (mean age 69.7, 46% female) in an examination of the usefulness of the CES-D for screening for depression (Schein and Koenig 1997). The item concerning sleep problems discriminated between patients with no depression and those with minor or major depression. There were no significant differences between non-depressed and depressed patients for seven items, only one of which was somatic (appetite disturbance). Other items that failed to discriminate were those concerned with failure, concentration, hopefulness, perceived unfriendliness in others, self-esteem, and reduced talking.

Robinson and Starkstein (1989) assessed somatic symptoms of depression in 215 consecutive admissions with acute stroke. Among those patients without any psychological symptoms of depression, 35% had one somatic symptom, only 8% had two and none had three or more of the somatic symptoms. In patients with psychological symptoms of depression, however, 89% had one or more, 53% two or more, 25% three or more of the somatic symptoms. Fedoroff et al (1991) found that both somatic and psychological symptoms discriminated between stroke patients with and without depressed mood, and that non-depressed stroke patients had on average only one somatic symptom, compared with almost four symptoms in the depressed patients. Among the significantly discriminating symptoms in their study were anxiety, delayed sleep, loss of interest, social withdrawal, and irritability.

In patients with cancer, a modification of the DSM-III diagnostic criteria, involving the replacement of four symptoms (anorexia, sleep disturbance, loss of energy and concentration difficulty) which may be commonly present in illness, with fearful or depressed appearance, social withdrawal or decreased talkativeness; brooding, self-pity, or pessimism; and non-reactive mood (cannot be cheered up, doesn't smile, no reaction to good news) was proposed (Endicott 1984). The modified criteria were validated in further studies (Kathol et al 1990b, Rapp and Vrana 1989). Kathol et al (1990b), comparing diagnostic criteria, noted that using the somatic symptoms of depression did not radically influence the diagnosis of depression in the medically ill. Most patients who met criteria for depression did so whether or not somatic symptoms were replaced. Other studies, however, have shown that including somatic items in screening can lead to overdiagnosis of depression (Silverstone 1990b).

Cavanaugh (1984) advised that affective and cognitive symptoms are best suited to diagnosing depression in the medically ill, with somatic symptoms used to support the diagnosis; she even suggested leaving out anorexia and fatigue altogether. The severity, but not the frequency, of the somatic items seems to correlate best with the cognitive/affective items on the BDI. Cavanaugh (1984) concluded that, in the physically ill patient, it is most important to focus on changes in function and pleasure in living that may reflect depression, and that the best discriminators of depression are loss of interest or pleasure in usual activities which has persisted for at least two weeks; feelings of worthlessness, self-reproach,

excessive or inappropriate guilt; feeling like a failure or feeling punished; recurrent thoughts of death or suicidal ideation, wishing to be dead or suicide attempts; and severe indecisiveness. In addition, agitation, retardation, anorexia and/or weight loss, and insomnia, when severe, temporally related to the affective symptoms, and out of proportion to the concomitant medical illness, should be used to support the diagnosis of depression. Koenig et al (1993) found that the symptom which best discriminated depression among male medical in-patients was loss of interest in activities, and noted that feelings of sadness were actually absent in over 40% of depressed patients.

Table 4 summarises the symptoms which have been found to discriminate depressed from non-depressed medically ill patients and the symptoms for which no differences were found between the depressed and non-depressed patients.

Summary

To summarise, it may be the motivational symptoms and related behavioral manifestations such as lack of interest and social withdrawal, lassitude and lethargy, as well as the more overt signs of depression such as crying and a sad appearance, which most usefully discriminate depression in medical patients. Autonomic hyperarousal, agitation and retardation may also be helpful. Insomnia and anorexia may or may not discriminate; this may depend in part on the exact phrasing of the screening item.

Table 4: summary of symptoms that discriminated and fail to discriminate depressed from non-depressed medically ill patients in comparison studies

<u>symptoms that discriminate</u>	<u>symptoms that fail to discriminate</u>
sadness	
anhedonia	
decreased social interest	
social withdrawal	
crying	
irritability	irritability
worthlessness	
self-reproach	self-reproach
guilt	guilt feelings
pessimism	hopelessness
sense of failure	
sense of punishment	
dissatisfaction	
recurrent death thoughts	
suicidal ideation	
wishing to be dead	
suicide attempts	
severe indecision	
	concentration loss
	complaints of poor memory
severe retardation	
severe agitation	
anxiety	
somatic preoccupation	
	fatigue
	work inhibition
	poor body image
	anorexia
severe anorexia	
severe insomnia	
delayed sleep	

Comparisons between medically ill depressed patients and psychiatric patients

Differences in presentation or profile of depression in psychiatric populations compared with depressed patients in medical settings will influence the validity of scales used to identify or measure the severity of depression.

Moffic and Paykel (1975) compared symptoms in depressed people with and without physical illness. The medical group was noted to experience the depression as having a distinct quality different from normal experience. They also reported significantly more helplessness, hopelessness, agitation, self-pity, and more anxiety and psychomotor retardation, but suicidal feelings tended to be lower in the medically ill depressed. There were no significant differences between the psychiatric and the medical groups with regard to insomnia, anorexia, low energy, fatigue or constipation: this is an important point, as it does suggest that attributing these somatic symptoms to illness rather than to depression may be wrong. Central features of depression--sadness, pessimism, guilt and suicidal ideas--were also generally present in the physically ill depressed. Anhedonia, guilt, irritability, work inhibition, hypochondriasis, somatic anxiety, and diurnal mood variation were equally common in depressed patients with and without physical illness.

Comparing medical and surgical in-patients scoring above 13 on the Beck Depression Inventory (BDI) with matched depressed psychiatric in-patients, Lykouras et al (1989) noted that the psychiatric patients scored significantly higher for sleep disturbance, loss of libido and lack of satisfaction; and the medical-surgical group scored significantly higher for irritability, work inhibition and social withdrawal.

Clark et al (1983) found, when medically ill patients were matched with psychiatric patients for severity of depression, that the medical group were highly significantly less suicidal, had less feelings of guilt; and were more helpless, hopeless, agitated, retarded, self-pitying, and more likely to experience the depression as having a distinct quality. House (1988), also, noted that depressed people seen in the context of physical illness were less likely to have guilt or suicidal ideas than those seen in psychiatric practice. Crying was the one symptom which discriminated depression well in the medically ill but not in the psychiatric patients, and Clark et al (1983)

suggested that medical patients who cry should be carefully investigated, regardless of other possible explanations for the behaviour.

Differences in the clinical presentation of depression in the medically ill may be attributable to differing levels of severity of depression. Clark et al (1998) concluded that 'depression in medical and psychiatric patients differs more in degree rather than kind.'

Table 5 summarises the similarities and differences found between depressed medical and psychiatric patients. These studies appear to agree that the majority of somatic symptoms of depression were found to be equally common in psychiatric and medical depressed patients. The distinct quality of depression noted in the physically ill may have been due to the malaise of the illness, and the psychomotor retardation may have been attributable to drowsiness, bed rest, and the effects of illness (Moffic and Paykel 1975). Feelings of pessimism, hopelessness, helplessness, self-pity and anxiety might be related to circumstances of illness and hospitalisation. However, Greene et al (1982) studied hopelessness in 60 physically ill patients (male and female, mean age 41.4) and found their scores were not significantly different from a random sample of the general population, and they scored significantly lower ($p < 0.001$) than a group of clinically depressed psychiatric hospital in-patients. An objectively determined poorer prognosis did not alter patients' scores. This suggests that hopelessness is not the usual response to what may be an objectively hopeless situation, but a cognitive distortion (Beck 1967) associated with depression.

Summary

There is disagreement, then, over guilt, irritability, work inhibition, sleep disturbance, and hopelessness, but all studies have found suicidal feelings to be less common in the medical patients, even when matched for severity of depression score.

These explorations, which have attempted to ascertain which are common and uncommon symptoms of depression in physically ill people, and to examine the similarities and differences found among differing populations of depressed people, have obvious implications for the recognition of depression in the physically ill.

Table 5: summarising studies comparing signs and symptoms of depression in depressed patients in psychiatric and medical contexts

<u>medical more</u>	<u>no difference</u>	<u>Medical less</u>
retardation		
anxiety	somatic anxiety	
agitation		
pessimism	pessimism	
hopelessness		hopelessness
helplessness		
self-pity		
work inhibition	work inhibition	
social withdrawal		
irritability	irritability	
	anorexia	
	constipation	
	hypochondriasis	
	insomnia	sleep disturbance
	fatigue	
	low energy	
distinct quality of mood		
	guilt	guilt
	diurnal mood variation	
	anhedonia	
		loss of libido
		lack of satisfaction
		suicidal feelings

[N. B. Similar symptoms are grouped together, but differences in assessment instruments used mean that symptoms are not identical.]

Recognition and treatment of depression in physically ill patients

Depression is the main psychiatric diagnosis among male and female acute medical patients (Maguire et al 1974), and the most common medical or psychiatric diagnosis among patients in primary care, although it is often unidentified, untreated and/or inappropriately treated (Eaton 1984).

Recognition

Recognition of any psychiatric disorder by physicians and hospital staff is typically poor. Recognition of psychiatric disorder in neurological patients was found to be 28% (Bridges and Goldberg 1984). Lykouras et al (1989) noted that only four out of 43 medical and surgical patients with BDI scores of >13 were identified by their physicians as having any kind of psychiatric disorder. Silverstone (1996b) found that physicians recognised only 50% of any psychiatric diagnosis in their patients (including delirium); and nurses identified 33%, and physicians 22%, of those with major depressive disorder (Silverstone et al 1996). Feldman et al (1987) recorded a similar lack of recognition in their study of 382 adult medical in-patients: with more than 50% of case-level illness classified by doctors as not unwell or sub-clinically unwell, including two patients with severe affective disorder. Richelson (1993) also noted a recognition rate of depression in medically ill patients of less than 50%.

Some studies have found that nurses' recognition of depression in their patients is to be little better than could be predicted by chance. A study of the concordance between 53 nurse/cancer patient (mean age 55 years) pairs on ratings for depression reported a very poor relative congruence of $K = 0.07$. All of the patients with clinically significant symptoms were classified by nurses as not depressed. McDonald et al (1999), and Passik et al (1998) also noted a poor concordance (Kappa = 0.17 for each) between over 1,000 cancer out-patient clinic patients' ZDS ratings, and nurses' and doctors' estimates of their patients' depression, despite the fact that the nurses and doctors were specifically aware of the depression study at the time of the clinics. Fifty-three percent of patients with significant levels of depressive symptoms were classified by nurses as having little or no symptoms of depression.

In oncology settings, Passik et al (1998) found that physicians appeared to rely on obvious sadness, crying and irritability to aid them in identifying depressed patients, but suggested that 'anhedonia is a key symptom for [identifying depression] as it is less affected by disease- and treatment-related factors and day to day emotional changes...there is nothing inherent to the disease itself that would rob one of the capacity to experience pleasure.' It is also of interest that in that study, doctors' ratings of patients' depression and anxiety were highly correlated ($r = 0.78$, $p < 0.0001$). The authors suggest that doctors were attuned to distress generally, but it is also possible that anxiety is salient and disturbing, while depression does not so readily impinge on awareness and is more easily ignored. Lampic et al (1996) noted that staff were much more likely to recognise anxiety than depression in their patients, and suggested that 'highly anxious patients are more likely to express their anxiety in a way that makes it discernable by others.' The ability to identify depression appears to be a characteristic of the individual: some doctors consistently over-estimated, and others consistently underestimated depression (one doctor was accurate with 78% of diagnoses; another was accurate in only 27% of cases).

McDonald et al (1999) suggested that '*The increased time that nurses spend with patients (as compared to physicians) might make focusing on nurses for the purpose of diagnosing depression desirable.*' However, it has also been observed that nurses feel reluctant to ask patients about depressive symptoms because of fear of upsetting them, calling attention to the patients' negative circumstances and adding to the patients' distress (Valente and Saunders 1997). When staff feel they know their patient well or extremely well, there is a tendency for increased accuracy in recognition of depression (Lampic et al 1996).

Masked depression and somatiform disorders

In some patients, dysphoric mood is not prominent and emotional and psychosocial problems are represented by somatic symptoms (Dworkin et al 1990). The presenting complaints may be pain and hypochondriacal preoccupation; and, in a person with physical illness, all these complaints could be attributed to the physical pathology. Primary care patients who have later been diagnosed as mentally ill overwhelmingly presented initially with somatic rather than psychological complaints (Goldberg 1979). Weissman et al (1981) found that two-thirds of people diagnosed as

depressed had visited their GPs six times a year, mainly with somatic complaints. Moffic and Paykel (1975) noted that the only patients in their study who presented diagnostic difficulties were those in whom the main complaints were somatic symptoms of depression thought to require medical investigation. To identify depression in these cases, it is important to focus on changes in function and pleasure in living that may reflect depression (Von Knorring 1965).

It is likely, however, that actual somatiform disorder is the exception, and it is the complexity of the issues of diagnosis which mitigate against the identification of depression. Katon (1984) noted that *'In many patients, depression is the generator, although not necessarily the physiologic 'cause', of somatic complaints. In others, underlying chronic organ disease results in depression, which in turn is manifested by exacerbation and/or exaggeration of the somatic symptoms associated with that organic condition.'* and that *'...many physicians are biased toward the diagnosis of organic disease. The finding of symptoms and signs consistent with an organic condition often automatically precludes a search for evidence of concomitant depression.'*

Mayou and Hawton (1986) observed that it is particularly difficult to distinguish between 'appropriate' distress due to illness and affective disorder, as a subjective judgment on the part of the clinician (who may regard as normal any symptom which seems to be understandable in the presence of physical disease) is required. House et al (1989) suggested that nurses' classification of some stroke patients as depressed depended in part on their feelings of sympathy for the patients or a tendency to take into consideration social difficulties. Fava et al (1984) found that the older patients in their study *'had a tendency to focus on somatic problems and not psychological determinants, [and] were likely to attribute all difficulties to physical illness...'* and suggested that attributions by patients, and particularly older patients, cannot necessarily be taken at face value.

Identifying depression in brain injured patients may present particular difficulties. In aphasic patients, signs such as unexplained weight loss, sleep disturbance or irritability might be the only indications of depression. *'Methods employing direct observation are unreliable in assessing mood in patients with right hemisphere or bilateral brain damage, who often look depressed due to blank facial expression or aprosody, but on questioning have no mood symptoms.'* (Allman 1991)

Apathy and indifference can cause patients to appear depressed without the core symptoms of depression. In patients with acute stroke and otherwise prominent symptoms of depression, right-hemisphere or brainstem lesions have been found to be associated with denial or unawareness of depressed mood (Kishi et al 1996).

However, it may be that apathy is an alternative presentation of depression. In fact, standard diagnostic procedures would not only fail to detect 'masked' depression, but would also over-estimate depression due to somatic items which are actually due to illness.

Lack of treatment

Not only is recognition low, but there is a reluctance to treat depression even when it is recognised (Moffic and Paykel 1975). Thirty percent or fewer of patients recognised as depressed may receive any treatment (Richelson 1993). 'Too often, depression in medically ill patients is left untreated because of persistent myths that all such patients are or should be depressed and that no treatment for depression is effective in such patients...' (Rodin and Voshart 1986). Weissman et al (1981) found that primary care attenders with depression were given tranquilisers (34.5%) or sleeping pills (17.2%) or nothing (45%).

Steinberg et al (1980) looked at physicians' reasons for not referring depressed patients to liaison psychiatrists. Doctors' explanations included:

- thinking that patients have 'a right' to be depressed,
- that patients are 'suffering from an organic disease' and are 'not crazy,'
- not wanting to upset their patients by involving a psychiatrist,
- disagreeing with psychiatrists' diagnoses,
- not believing there was anything psychiatrically wrong, and
- not 'believing in' psychiatry.

Some physicians may be reluctant to treat depression pharmacologically because of the risks of polypharmacy and side effects. In a review of psychiatric liaison consultations, Popkin et al (1985) found that 32% of medically ill patients who were prescribed antidepressants had them discontinued due to side effects (half developed delirium).

Gregory et al (1992) noted that the results of five double blind placebo-controlled anti-depressant trials in patients with moderate to severe medical illness were inconsistent or showed a poor outcome for depression. They speculated that this was because age was a confounding variable, or medically ill patients were generally inadequately treated for depression because of side effects. In addition, they suggested that the diagnostic systems used are relatively poor at identifying treatable depression in this population.

Only 40% of depressed medical patients (mean age 49 years) referred for psychiatric evaluation were found to have responded to antidepressant treatment (Popkin et al 1985). However, in his review of antidepressant trials in medically ill patients, Series (1991) stated that drug treatment may double the chance of recovery from about 30% to 65%. Antidepressant treatment has been shown to be effective even when physical illness doesn't improve (Rifkin et al 1985), in patients with cancer (Maguire et al 1985), and has been recommended for depressed stroke patients (Morris et al 1992). The evidence from most recent research indicates that 'The vast majority of patients with depression and concurrent medical illness can be safely treated with antidepressant medications', in particular the newer selective serotonin re-uptake inhibitors (Bellies and Stoudemire 1998).

Summary

Substantial minorities of people with physical illnesses are also affected by depression. Whether depression is the result of physical illness, is implicated in the ontogenesis of physical illness, or is coincidental is not the issue. Depression in physically ill people, even at subclinical levels, appears to be associated with poorer outcomes in terms of morbidity, mortality, and rehabilitation.

Features of depression may be different in some ways from those seen in physically well populations. Recognition rates are unsatisfactory. Treatment seems to be at low levels, and there is a dearth of literature concerning the efficacy of treatments for depression. All of these aspects are magnified when physical illness and depression occur in elderly people.

Depression in Elderly Physically Ill People

It is estimated that between 60% and 86% of people over the age of 60 have at least one significant chronic health problem; 50% to 70% have on physical examination a diagnosable illness, and over 50% have some disorder which interferes with independent functioning (Brammah 1998, Jarvik and Pearl 1981, Ouslander 1982, Rossman 1979). Physical illness in the elderly person is characterised (Evans J. G. 1990) as having six special features that differentiate it from physical illness in younger adults:

- there is multiple pathology in the setting of chronic disease
- there may be a non-specific presentation of acute illness, such as confusion, falls, or incontinence, which makes it difficult to diagnose specific conditions
- deterioration may be rapid, if illness is untreated, because of impaired physiological defenses
- there is a high incidence of secondary complications of disease and treatments
- there is a need for intensive rehabilitation to regain function
- illness occurs against a background of social, psychological and environmental factors, which disadvantage current cohorts of older people compared with younger adults.

Aetiology

Depression is strongly correlated with physical illness in the elderly, particularly chronic progressive disease (Gurland et al 1983, Gurland et al 1988, Kennedy et al 1991). Reporting on a survey of 890 elderly people living in the community, Lindesay (1990) noted that increased rates of health problems were associated with cognitive impairment, depression, generalised anxiety and agoraphobia. The rate of serious physical health problems was significantly associated with age ($p < .001$), and higher rates of health problems were associated with depression ($p < .001$). These data emphasise the complexity of the inter-relationships between age-related changes, physical illnesses, responses to

hospitalisation and treatments, and social factors, which complicate the diagnosis and treatment of depression (Ouslander 1982).

Elderly people, who are the highest users of prescription drugs, are more prone to polypharmacy, more vulnerable to the side effects of drugs, and are more likely to experience depression as a side-effect of anti-hypertensives, diuretics, and anti-Parkinsonian drugs (Braithwaite 1982, Dhondt 1995, Ouslander 1982). Beta-blockers alone may be responsible for up to 10% of drug-associated depression (Dhondt 1995).

Type of illness, severity of illness, and disability

The type of physical illness may be implicated in depression. Rapp et al (1988b) noted more depressed patients with endocrine, metabolic, nutritional, and immunologic disorders; but Penninx et al (1996) found, when people with only one disease were analysed, that depression was most frequent in those with osteoarthritis, rheumatoid arthritis, and stroke; and that diabetic and cardiac patients were least affected. Covinsky et al (1999) found that depression was more common in elderly patients with chronic obstructive airways disease or congestive heart failure. Koenig (1998) identified major depression in 36.5% of patients aged over 60 hospitalised with congestive heart failure. There was twice as much depression among patients with congestive heart failure compared with patients with other heart diseases, but when controlled for illness severity, the difference was non-significant. There were no significant differences between patients with congestive heart failure and patients with non-cardiac diseases. Penninx et al (1996) also found that people with three or more diseases scored twice as high on the CES-D as people with no disease, and suggested that the *'extent of functional disability is an important factor in psychological distress.'* Magni et al (1985) found more depression in people with central nervous system disorders, musculoskeletal illnesses or blood disease, and also suggested this may be due to associated high levels of disability. This is certainly noted by Kennedy et al (1990), who reported that *'increasing disability and declining health preceded the emergence of depressive symptoms and accounted for seventy percent of the variance explained by discriminant analysis'* and that these two variables *'completely overshadow social support and undesirable life events in explaining the emergence of depression.'* The following year, Kennedy et al (1991)

further noted that *'changes in health and independence over 24 months appear to be more important than baseline health status, number of medical conditions, number of problems with activities of daily living, and sociodemographic characteristics in explaining the course of depression.'* They stated that *'changes in health and increasing disability have the preeminent roles in the emergence and persistence of depressive symptoms.'*

Prevalence

Bearing in mind the methodological differences relating to diagnostic procedures, many studies of depression in elderly medical in-patients have suggested a clinically relevant prevalence of 20 to 25% (Burn et al 1993, Hammond et al 1993, O'Riordan et al 1989, Ryan et al 1995), although higher levels of 33% to 46% have been reported (Adshead 1992, Covinsky et al 1999, Magni et al 1985, Okimoto et al 1982, Robins et al 1984, Shah et al 1997).

Using only a score above six on the 15-item GDS to identify depression, Covinsky et al (1999) classified 34% of acute medical in-patients (mean age 79.9 years) as depressed. Using ICD 10, the prevalence of depression in acute geriatric in-patients (mean age 80.6 years) was 9.2% (Bowler et al 1994). Ramsey et al (1991) found in acute elderly admissions, using the Brief Assessment Scale (BAS) (Macdonald et al 1982), that 5% of men and 17% of women (10% in total) were depressed, and a further 40% had significant symptoms. Sadavoy et al (1990), studying physically ill, chronically institutionalised geriatric patients (mean age 82, 38% male) found 35% scored over 15 on the MADRS, suggesting depression.

O'Riordan et al (1989), studying acute admissions to medical wards (mean age 80 years) who were screened and then diagnosed by psychiatric interview, found 23.4% with clinically significant depression, half of whom were judged to require antidepressant treatment. Jackson and Baldwin (1993) assessed elderly in-patients (mean age 77.4), using the GDS to screen for depression, and the GMS for diagnosis, and found 25% to have diagnostic case level depressive illness. The prevalence of depression among geriatric in-patients (mean age 80.8 years) at the Royal Liverpool Hospital, screened using the Evans Liverpool Depression Rating Scale (ELDRS) (Evans 1993b, 1996) and diagnosed using GMS-AGECAT, was 28.7%, with almost twice as many women as men classified as depressed (Hammond et al 1993). Using a

two-stage diagnostic procedure (CES-D screening and DSM-IV diagnosis), Koenig (1998) found major or minor depression in 58% of elderly patients with congestive heart failure, in 34% of patients with other heart disease, and in 50% of patients with other medical illness.

Effects of physical illness on depression

Longitudinal studies of depression in elderly people have all observed the adverse effect of initial or supervening serious physical illness on the outcome of depression. In elderly psychiatric in-patients with severe depression, Baldwin and Jolley (1986) found no statistical association between outcome of depression and the pathologies of each individual body system taken separately, but the absence or presence of active health problems at baseline was associated with very good and very poor outcomes respectively. The development of new physical disorders strongly predicts a poor prognosis for depression (Baldwin and Jolley 1986, Murphy 1983, Post 1972). More specifically, Kivela (1994) found that a poor prognosis for depression was related to the occurrence of serious illness, worsening of physical health or functional capabilities, pulmonary disease, and cardiovascular disease.

Effects of depression on physical health and mortality

Depressed mood, as measured by the CES-D, was found to be a continuous risk indicator for decreasing actual physical performance over four years in a community sample of over 1,000 people (mean age 77.7 years at baseline) (Penninx et al 1998). Each additional depressive symptom was associated with a significant decrease (0.036, $p < 0.001$) in functional ability.

An examination of the data from over 1000 elderly Liverpool residents concluded that, even controlling for physical illness, depression was associated with an increased risk of mortality (Dewey et al 1993). Although Fredman et al (1989), Jorm et al (1991) and Ramsey et al (1991) found no relationship between depressive illness and mortality in physically ill elderly patients, some particular depressive symptoms were found to predict mortality. Once again, the particular diagnostic procedures employed in the studies may have influenced the conclusions.

Koenig et al (1989b), having matched male patients with major depression for age, illness type, severity and disability with non-depressed patients, found the depressed patients were significantly more likely to die while in hospital. The length of stay in hospital was significantly longer (nearly twice as long) for the depressed patients. After five months, depressed patients were also significantly more likely to have died. In a study of 573 elderly medical in-patients, mortality over three years was 34% (95% CI 3% to 73%) higher in patients with a GDS score of six or more at baseline, even after controlling statistically for the effect of age, sex, functional and cognitive impairment, illness severity, comorbid illness, and living alone (Covinsky et al 1999). Evans (1993a) noted that depression predicted mortality at three months follow-up, but not at 12 months. Effects on mortality do appear to be most evident in studies over shorter time periods in these medical samples; over longer periods of time, other factors might be exerting greater influence. In a community sample studied over seven years, Whooley and Browner (1998) found that mortality rates were significantly higher in women categorised as depressed, but these differences did not appear in the first 16 months of follow-up. The authors suggested that depression in their study did not therefore result from the presence of acute life-threatening conditions.

Although the positive correlation between depression and mortality might in part be explained by greater severity of illness, assessing the association between depression and severity of physical illness is problematic, in part due to the difficulties of quantifying physical illness. Sampling artifacts and exclusion criteria (e.g. cognitive impairment, unstable physical condition, age), the criteria for identifying depression, and sample size will all influence the effects (Koenig et al 1989b, Shah 1998). However, *'Clinicians should not ascribe this high risk [of long-term mortality] entirely to greater severity of illness in patients with more depressive symptoms, because the poor outcomes of depressed patients are not entirely accounted for by measurable differences in illness severity. Depression may have important interactions with medical illnesses that promote poorer outcomes. Future research should address whether treatment of depressive symptoms improves outcomes in these patients.'* (Covinsky et al 1999)

Recognition and Treatment

Recognition

The recognition of depression in the elderly person who is also suffering from acute or chronic physical illness presents difficulties which may be due to confusion concerning the relevance of somatic symptoms in the diagnosis, and assumptions regarding the appropriateness of depression (Barsa et al 1986, Rapp et al 1988a, Schuckit et al 1975). Physically ill elderly patients may be mistakenly diagnosed as depressed due to too much emphasis being placed on somatic symptoms (Weiss et al 1986); or depressive symptoms in the elderly person with medical problems may be attributed only to physical illness, to the processes of ageing, or to organic disorders of the central nervous system (Magni et al 1985, Schuckit et al 1975).

Studies have consistently reported a level of recognition of depression by hospital staff which is even lower for elderly than for middle aged samples (not over 12.5% compared with 14% to 26%) (Jackson and Baldwin 1993, Rapp et al 1988a, Robins et al 1984). Among male in-patients (mean age 69.3 years), the most common disorders diagnosed using Research Diagnostic Criteria were major, minor or intermittent depression, found in 15.3% of patients; but less than 9% of these had been identified by house staff (Rapp et al 1988a). Schuckit et al (1975), in male acute medical and surgical patients (mean age 74 years), found only one half of the depressed patients identified by house medical staff, and there was no mention of depression when case notes were reviewed after patients were discharged. The authors speculated that physicians may be concentrating on the physical complaints of the elderly and therefore fail to notice mental problems, or that they see a problem but choose not to treat it.

Physicians may lack time, interviewing skills, and the confidence to make a diagnosis, or may consider depression to be untreatable (Koenig et al 1988b). Differing concepts of the significance of psychological symptoms are also important. The doctors may concentrate on the physical illnesses and may find it difficult to consider the elderly person as a whole. There may even be an element of collusion between patient and staff. *'...a majority of patients still prefer to have almost any physical disease over a mental disorder, with its disturbing implication of loss of control and moral culpability'* and there may be *'what amounts to an involuntary*

conspiracy among patients and physicians not to see depression.. '. (Katon 1984). However, Waxman and Carner (1984) reported that, not only was recognition of psychiatric symptoms low among primary care physicians, but that elderly '*Patients were being diagnosed and treated as suffering from depression who scored very low on a standard scale of depressive symptomatology,*' which suggests a general misunderstanding of the syndrome of depression, rather than simply an inability to recognise it.

Schuckit et al (1975) suggested that the frequently cited reason for under-recognition (that the elderly do not want to talk about psychological problems) is false, that they are only waiting to be asked, and that house staff may not adequately enquire. The cues to depression that patients provide may be too subtle, or may be ignored or discounted as normal. More than one author has suggested that specific clinical skills should be developed among nurses in order to improve the recognition of the symptoms of depression in medically ill and elderly patients (House et al 1989, Jackson and Baldwin 1993, McDonald et al 1999).

In my own investigation of doctors' normal practice in identifying depressed geriatric patients, 20 junior doctors (two rotations from one department of geriatric medicine) were interviewed and asked what signs and symptoms alerted them to possible depression in their patients. One hundred and twenty-seven cues, signs and symptoms were mentioned and were categorized as

- Observations of mood and behaviour
- Psychological symptoms
- Somatic symptoms
- Informants' comments
- History.

The most common signs mentioned (43%) were related to social interaction and communication with the doctor, such as monotone speech, poor eye contact, and a sad or miserable appearance. These results suggest that doctors are aware of subtle cues and are not necessarily dependent upon overt signs of distress. There was a notable lack of mention of symptoms such as preoccupation with physical symptoms, or co-morbid anxiety, however. (Hammond 2000)²

Treatment

Treatment of depression in elderly medical patients is always the exception (Ebrahim et al 1987, Ryan et al 1995). This conclusion was also drawn from a study by MacDonald (1986), who found that GPs' recognition of depression in their elderly patients was quite high, but there was very little subsequent treatment and/or referral.

Koenig et al (1992) noted that documentation of depression by hospital medical staff, who were aware of an on-going depression treatment trial, was only one-quarter of those identified as depressed, and treatment was not initiated because physicians disagreed about the diagnosis of depression, or decided antidepressants were contraindicated or that the risk: benefit ratio was unfavourable; psychotherapy was not considered at all.

Some physicians undoubtedly feel that treatment of depression is unnecessary because they believe that it is primarily reactive to the physical illness, and therefore will resolve when the physical condition improves. However, the majority of disease conditions in elderly people are chronic and unlikely to improve to a worthwhile degree; and Koenig et al (1992), in a follow-up study of men diagnosed as depressed while hospital in patients, found that of the two-thirds of patients who survived, 64% showed no improvement in their depression over a median of two months. The remission rate for major depression in elderly patients with congestive heart failure was only 27% over three months (Koenig 1998). In longer studies of stroke patients, 40% to 50% of depression persisted over 12 months (Robinson et al 1987, Wade et al 1987). In another 12-month follow-up study, Fenton et al (1997) noted that among the elderly patients diagnosed as having a major depressive episode while medical in-patients, 43.8% had been continuously depressed and only 14.6% were in full remission.

There is little available evidence regarding the efficacy of treatment for depression in this population.

² see appendix

'Further investigation is necessary to determine whether the similarity of the depressions in medical patients and those admitted to psychiatric units translates into similarity of treatment response. ...studies with stroke and cancer suggest that the affective component may be successfully addressed with antidepressant medication...whether this is true of the chronically ill depressed geriatric population is still unproved...' (Sadavoy et al 1990)

The particular difficulties in researching elderly physically ill people with depression, including recruitment, survival, compliance, tolerability, have been noted (Evans et al 1997a, Koenig et al 1989a). Evans et al (1997a), in a study of physically ill, very elderly patients which failed to achieve statistical significance, did find a response rate to treatment with fluoxetine over 8 weeks of 67%, compared with a placebo-response of 38%. In further analyses of the data from that study, Evans et al (1997b) noted, that compared with patients on placebo, depression in actively treated patients who had severe illness was significantly more likely to have a good outcome.

Depressive symptoms in elderly physically ill patients

The baseline frequency of depression symptoms in the general population of elderly medical in-patients has been described by some authors, but this has been compromised by a reliance on specifying merely the presence or absence of the symptoms, and variations in the methodology. Silverstone (1996a), in a sample of medical patients (mean age 70 years), in whom the prevalence of depression was conservatively estimated to be 5.1%, found appetite disturbed in one third and sleep problems in 45%. Depressed mood was found in one tenth of patients, anxiety in 12%, and difficulty concentrating was noted for 31%. Sadavoy et al (1990) found that 80% of non-depressed patients reported sadness in excess of occasional sadness in keeping with the circumstances, as scored on the MADRS. These figures suggest the apparently extensive presence of depressive symptoms, somatic and non-somatic, in elderly physically ill patients in the absence of depressive illness. Whether all ostensible symptoms and signs of depression can, therefore, be taken as features of depressive illness in this population has been explored in various studies.

Features of depression in elderly physically ill patients

In comparisons of elderly depressed medical patients with psychiatric samples, the evidence is similar to that found in younger adults. Sadavoy et al (1990) found that physical illness did not appear to alter the profile of depression symptoms. Comparing chronically medically ill patients (mean age 82) with MADRS scores of 16 or greater with depressed psychiatric patients, they found no significant differences in the frequency of endorsement of items (independent of severity), including those related to sleep and appetite, between the depressed ill and the psychiatric group. Comparing the depressed with the non-depressed medically ill, significant differences were found between all items on the MADRS except for the item 'reported sadness:' 80% of medical patients categorised as non-depressed reported feeling sad, compared with 94% of the depressed medical patients. As reported sadness might be the first 'port of call' in identifying depression (Silverstone, 1996a, in fact uses this single symptom as an initial screening question in his Concise Assessment of Depression screening scale), it seems important to establish severity and persistence. The usefulness of this question would also be in doubt if a significant percentage of depressed patients in this population have somatised depression, or have depression in which dysphoric mood is not prominent.

A significant correlation had been found between severity of cognitive deficit and depression scale scores: it was suggested by Sadavoy et al (1990) that cognitive impairment may artificially inflate the depression score on the MADRS by the endorsement of items such as lack of concentration, inability to feel, lassitude, and inner tension, and that the cut-off of 15/16 they employed was possibly too low for the cognitively impaired. Others have noted the correlation between depression and cognitive impairment, and an alternative explanation would include an actual higher rate of depression in the cognitively impaired.

The study by Sadavoy et al (1990), although relying solely on the MADRS, supplies an interesting analysis of the symptoms of depression, and finds no significant differences between the non-ill and the ill depressed. However, using only the MADRS to diagnose creates a circular argument, and therefore doesn't really help to determine if the symptom patterns are different. It does show that sadness alone may not be a good indicator of depression.

A study by Steuer et al (1980), using the ZDS (in which 8 of the 20 items are somatic), investigated the relationship between diagnosed physical illness, somatic complaints, and depression in a relatively healthy elderly depressed sample, and found that physician health rating did not correlate significantly with depression scores, and health status was not a confounding variable in the measurement of depression using the ZDS. The only subscale that correlated significantly with physical rating was the 2-item somatic symptoms --heart beating faster than usual, and tired for no reason-- and it was tiredness alone which accounted for the correlation. Somatic symptoms contributed less to the depression scores than items rating lack of hope, decreased activity, difficulty in doing things, feelings of uselessness, and decision-making difficulties. Fatigue, decreased libido, and diurnal variation were significantly associated with both depression and physical health. The authors emphasised that 'complaints of tiredness or feeling low and unenergetic in the mornings should be medically investigated and not discounted solely as signs of depression in old age.'

Rapp et al (1988a) studied relatively young (mean age 69.3 years) elderly male admissions to a veterans' hospital. Using the BDI, all of the psychological items except 'feeling punished;' and the somatically related items 'sleep difficulties', appetite, and health worries, were found significantly more often in the depressed. Fatigue, weight loss, and decreased interest in sex showed a trend towards significance. In other words, sleep and appetite problems were not good predictors of depression, and neither was a sense of punishment; whereas fatigue, weight loss, and loss of libido might be predictors. On the ZDS, 14 of the 20 items differentiated the depressed from the non-depressed, including 'I have trouble sleeping through the night,' tachycardia, 'I get tired for no reason,' and restlessness. However, diurnal variation, loss of appetite, decreased libido, weight loss, difficulty in doing things, and constipation failed to distinguish between depressed and non-depressed. With the 30-item GDS, 25 of the items differentiated between the two groups. Those items that did not discriminate were the two items concerning hopelessness, the two concerning social avoidance, and the item regarding difficulty in making decisions. It must be noted that this subject group was exclusively male, and relatively young. However, these results suggest that somatic features, except for appetite, should not be disregarded when screening for depression in physically ill elderly patients. The

failure of items relating to social withdrawal and hopelessness to discriminate depressed from non-depressed suggests a possible problem with phrasing or semantics; asking veterans' hospital patients (who may be disabled) if they 'prefer to stay at home, rather than going out and doing new things,' or if they are 'hopeful about the future' may quite predictably not be sensitive to depression.

In a study of the utility of the CES-D for screening for depression in geriatric in-patients, Schein and Koenig (1997) found that seven items out of 20 did not discriminate depressed from non-depressed patients. There were no statistically significant differences for these items:

- 'I thought my life had been a failure'
- 'I did not feel like eating; my appetite was poor'
- 'I talked less than usual'
- 'I had trouble keeping my mind on what I was doing'
- 'I felt that I was just as good as other people'
- 'People were unfriendly'
- 'I felt hopeful about the future.'

Six items discriminated patients with no depression from those with minor as well as major depression. These were:

- crying spells
- feeling depressed
- not enjoying life
- restless sleep
- finding it hard to 'get going'
- feeling everything was a effort.

Koenig et al (1993) noted that the symptoms which best discriminated depression in elderly male medical and neurological in-patients were anhedonia, suicidal thoughts, hypochondriasis, and insomnia. Symptoms which demonstrated a low association with major depressive disorder were loss of libido, weight loss, fatigue, and somatic anxiety.

Magni et al (1985) studied depression in geriatric (mean age 75.6 years) and younger adult (mean age 43.9 years) medical inpatients, used the ZDS and the

Depression Factor Score (DFS) (derived from the SCL-90, Derogatis et al 1974), which has no somatic items. There was a high correlation between the two depression scales, and a good correlation between the DFS and various parts of the ZDS, suggesting that the somatic items of the ZDS did not inflate the depression rating by the ZDS. The older patients presented more depressive symptoms than the younger adult medical patients, but this was not attributable in the elderly to more somatic symptoms.

Despite their apparent prevalence, then, some somatic symptoms may nevertheless be symptoms of depression; and symptoms that would theoretically indicate depression (such as hopelessness), may not. House (1988) concluded that it is best to describe all symptoms, regardless of their possible origin, and reserve judgment on their aetiology.

Masked depression and pain

Gurland et al (1988) stated that diagnosing depression may be especially difficult when the affective disturbance is masked, as happens 'fairly often' among elderly people with concomitant physical illness. Magni et al (1985) found pain to be more frequent and more severe among depressed than non-depressed elderly acute hospital patients. Williamson (1978) suggested that complaints of severe pain might be one manifestation of masked depression. In a study of pain complaints in a group of elderly people (70% female, mean age 83.6 years) in nursing homes and sheltered housing, Parmalee et al (1991) found that when functional disability and health status were controlled statistically, the non-depressed reported the fewest number of localized pain complaints and the least intense pain; more depressed individuals were more likely to report pain, particularly where physicians had identified a physical problem that might account for the pain. Depressed people were highly significantly more likely to have arm and leg pain/aches, hand and feet, neck, and bone pains, and painful urination; the authors suggested that *'major depressives may be more sensitive to somatically explainable aches and pains.'* Age was unrelated to pain intensity or the number of localised complaints. The authors concluded that their *'results belie the notion that pain complaints serve as a substitute means of expressing depression'* and suggest that depressed people may simply be more willing to express their pain, or may be more sensitive to it.

Suicide

Pain and disability in physical illness have been associated with increased risk of suicide in elderly people (Beck and Weishaar 1990), but most suicide and deliberate self-harm in elderly people is also strongly associated with depression (Barraclough 1971, Pierce 1987). In cases of self-harm, pain or demoralization due to physical illness was considered to be directly contributory in 18%; and in 63% there was significant physical illness. Suicidal ideation is evidently pathological, even in the terminally ill elderly, in whom suicidal thoughts are associated with depression and are responsive to antidepressant treatment (Leibenluft and Goldberg 1988).

Discussion and summary: symptoms of depression in physically ill people, elderly people, and physically ill elderly people

There are some obvious contradictions and inconsistencies when the data is summarised, which may in part be due to the use of different instruments to assess symptoms. Some research determined only whether a symptom was present or absent; Cavanaugh (1984) found significant differences when severity was taken into account.

Among the symptoms noted more frequently in depressed ill patients compared with physically well are retardation and agitation. Retardation also appears to be more common in the depressed elderly than in younger adults, but rare among elderly people in general, and it might therefore be predicted that retardation would be an important symptom of depression in the depressed physically ill. Agitation, however, may be more or less common in the elderly depressed, so it remains to be seen whether this symptom is also important among the physically ill elderly.

Guilt, suicidal feelings, and loss of libido are less common in the physically ill depressed than the physically well depressed; these symptoms are also less common among elderly depressed than younger depressed adults, and appear to be uncommon in elderly people generally. Therefore, it might be expected that these symptoms would be less likely to be important symptoms in the physically ill depressed elderly person.

Feelings of being slowed down, low in energy, and having disturbed sleep are more common in depressed elderly compared with younger depressed adults, but these symptoms also seem to be frequently reported among the non-depressed elderly. Disturbed sleep may also be a less common feature of depression in the presence of physical illness. However, complaints of low energy and fatigue may be important symptoms of depression despite of the presence of physical illness. Reduced appetite, concentration loss, and physical preoccupation have been found to be uncommon in the well elderly, but more common among the depressed old than younger depressed, and studies are contradictory regarding the importance of these symptoms in physically ill depressed patients. It is difficult to predict whether any of these will be found to be significant in elderly depressed patients with physical illness.

Crying is reported as rare among the non-depressed elderly, but considered to be an important discriminator of depression among the medically ill depressed, and might also therefore be found to be important among the depressed elderly physically ill. Finally, complaints of depressed mood appear to be rare among the well elderly, but also may be a less common feature of depression in the old person, and might therefore be less important than anhedonia in the old physically ill depressed person.

In summary, it appears that the following symptoms may be of importance in discriminating and assessing depression in elderly physically ill people:

- Anhedonia, which is not commonly encountered in either the elderly or in illness.
- Social withdrawal, which is reportedly more common both in the depressed old and the depressed ill.
- Depressed mood and sadness, which may be more common in the depressed ill, although it appears to be a less common symptom among the depressed elderly.
- Crying, which is uncommon in illness, but seen in the depressed ill.

Symptoms that may not prove to be as useful are:

- Suicidal feelings and suicidal intent, which are less common symptoms in both the depressed old and the depressed ill. Suicidal thoughts may have a different significance in the elderly person and the ill person, in that thoughts of death are generally more common.

- Symptoms relating to guilt, self-blame, and self-reproach, which are probably less common among the depressed old and the depressed ill, and may also be insensitive to improvement in the depressed elderly person.

Symptoms for which there are major questions concerning their usefulness include:

- Appetite disturbance, which is seen in the absence of depression in the ill, but is also an increasingly common symptom with age in the depressed. It is not clear whether it is more common in the depressed physically ill.
- Sleep disturbance, which is seen in the absence of depression in both the old and the physically ill. It may be seen more commonly among the depressed old, and may even be less common among the depressed ill.
- Fatigue is reportedly more common among the depressed elderly. Its frequency among the depressed ill is apparently not different from that seen in the depressed psychiatric patient.
- Low energy may be more common in depression in the elderly, but is reportedly more common among the physically ill.
- Feeling slowed down is possibly more common in the old depressed; but also is more common in the elderly in general.
- Retardation is more common in the depressed old, more common in the depressed ill, but also more common in illness in the absence of depression.
- Work inhibition may be more common in the depressed ill, but is also a common symptom in illness.
- Agitation is more common in the depressed ill, but there is very mixed evidence regarding its prevalence among the elderly and the elderly depressed
- Anxiety is more common in the depressed ill, and may also be more common in the depressed old.
- Somatic preoccupation and hypochondriasis is not common in the elderly, possibly more common in the depressed old, but is also common in illness.
- Irritability is reportedly more common in depressed ill, but is also common in illness
- Complaints of cognitive decline may or may not be an important symptom. It may be that the way the questions are phrased may critically affect the apparent prevalence: certain instruments assess this using items such as 'My memory is as

good as it ever was', which may result in a high endorsement in the elderly which is clinically insignificant. There is not really enough evidence to draw any conclusions about cognitive complaints such as memory problems, difficulty concentrating, or indecisiveness.

Identifying signs and symptoms that reliably discriminate between depressed and non-depressed people is the basis of screening, which is addressed in the following section.

Screening for depression in elderly physically ill patients

The increased risk of depression in elderly patients with physical illness, the associated poor prognosis for both depression and physical illness, and the potential treatability of the depression prioritises the identification of depressed patients in geriatric wards. The routine use of cognitive screening scales by junior medical staff has resulted in the recognition of a high proportion of patients with cognitive dysfunction; it is suggested that depression screening scales can similarly aid the identification of depressive illness (Jablensky 1987, Rapp et al 1988a, Roohanna and Pitt 1989).

Screening scales are required to discriminate with reasonable reliability people who are likely to be depressed, and who would benefit from treatment, from those likely to be not depressed (Kathol et al 1990a). Screening scales are not meant to be diagnostic, nor are they required to determine severity: they should define an 'area of suspicion' and prompt further investigation, or in the case of epidemiological research, an approximately accurate estimation of prevalence. Important qualities in depression screening scales include their sensitivity (the ability to identify depression when it is present), specificity (the ability to identify depression but not other disorders or no disorder), the positive predictive value (PPV) (the proportion of depressed patients correctly identified to the sum of true positives and false positives) and negative predictive value (NPV) (the proportion of non-depressed patients correctly identified to the sum of true negatives and false negatives). The scale itself should be quick and easy to use, not necessarily by a physician, and acceptable to staff and patients.

Most depression screening scales have been developed and validated in physically healthy, cognitively normal, community populations; but there are scales which specifically address the difficulties involved in discriminating depression in older or physically ill people, where the importance that should be placed upon symptoms such as anorexia, weight loss, insomnia, lethargy, lassitude, retardation, loss of libido, general psychosomatic symptoms (e.g. headaches, muscular aches) and preoccupation with physical problems has been disputed.

Measures require validation, particularly through treatment outcome trials, and of various measures which have been used--self-report, semi-structured interviews, interviews-- most are considered to be inappropriate and/or not properly validated for use in physically ill patients (House 1988, Mayou and Hawton 1986).

Specific problems in screening physically ill elderly patients

Communication problems and cognitive impairment

Depression is strongly associated with cognitive impairment and communication disorders in geriatric patients (Ramsey et al 1991) and in stroke patients (Folstein et al 1977, Kishi et al 1996), particularly those with non-fluent aphasia (Robinson and Benson 1981). Patients with communication difficulties (including expressive dysphasia, dysarthria, and organic brain syndromes), and visual or hearing impairment, or who are illiterate, constitute up to 30% of the population of elderly medical patients, and have been excluded from some studies of depression because of the problems of assessment (Agrell and Dehlin 1989, Allman 1991). Ramsey et al (1991) found that assessment of mood was not possible in 26% of admissions (median age 83 years), mainly because of dementia. Rapp et al (1988a) noted that the results of their study were not generalisable to populations including cognitively impaired patients, as 34% were excluded from their study of prevalence due to cognitive impairment; and 20% of patients (those with severe dementia) were not assessed in the study by Reifler et al (1986).

Draw-backs in using self-report measures

Self-report measures are theoretically quick and economical to use, and they avoid observer bias. However, elderly patients might be too frail or unwell to concentrate or co-operate. Self-report scales may be too complex and demanding for many patients with central nervous system disorders, visual, and motor problems. House et al (1989) reported from a study of stroke patients that 20% were unable to complete the BDI due to cognitive deficits, and 51% (including all those unable to complete the BDI) could make no ratable response on a visual analogue mood scale (VAS), a very simple method of mood assessment. Praxic, visual, or visuospatial

neglect problems which make the VAS unsuitable would also affect patients' ability to complete other self-report scales independently.

Harper et al (1990) found that 'the more verbally bright patients are more able to comprehend the self-report inventories, as well as more likely to make accurate self-appraisals of their affective state given their greater ability to label their feelings.' Harper et al (1990) suggested that self-report measures may fail to detect depression because the 'oldest patients may attribute symptoms of depression to what they assume are natural features of being old.' In addition, elderly patients who may have literacy problems, or impaired sight, would find these scales unnecessarily challenging.

Although self-report scales are particularly useful for epidemiological studies, they are not used routinely by physicians. They have little to do with clinical practice, and might be thought to encourage communication barriers between patient and care staff.

Using interview-based screening scales

Interview-based scales are used to elicit descriptions from patients of their depressive symptoms, which are then rated by the interviewer. Interviewers need to have some skill or training to maintain reliability, and in clinical practice this should not present a problem. Interview methods cannot be successfully used with patients who are very deaf or have severe cognitive or communication problems, including a percentage of stroke patients; and these are the patients in whom clinicians have the least confidence in their ability to detect depressive disorders.

Examples of screening scales

This section will discuss examples of screening scales designed for use in older people and people with physical illness.

The Geriatric Depression Scale (Yesavage et al 1983)

The Geriatric Depression Scale (GDS) is the screening scale recommended by the Royal College of Physicians and the British Geriatrics Society (Royal College of Physicians 1992) for the detection of depression in elderly people. It was devised

from 100 symptoms suggested by geriatric psychiatry clinicians and researchers to distinguish between depressed and non-depressed elderly people. These were tested on 47 people over the age of 55, some of whom were not depressed and some who were psychiatric in-patients. The items were presented in a yes/no format, and those 30 items that showed the highest item-total correlations were selected (median correlation .675, range .47 to .83). Interestingly, among the 100 items which the experts suggested would discriminate between the depressed and non-depressed, the median item-total correlation was .51 (range -0.07 to 0.83), so there were many items thought to be representative of depressed people which had very weak or no correlation with the total score. The GDS has a high internal consistency (0.94, Yesavage et al 1983; 0.87 Salamero and Marcos 1992) in samples heterogeneous for depression, which is unsurprising considering the method of selection of the items.³

The GDS has been validated as a screening measure in a variety of populations, including those with physical illness (Gallagher et al 1983, Lyons et al 1989) and dementia (Burke et al 1992, O'Riordan et al 1990), and was found to be a sensitive, though not very specific, screening measure for depression in acute medical admissions (mean age 80 years) (Koenig et al 1988b, O'Riordan et al 1989). Other studies have demonstrated poor specificity in populations with cognitive impairment (Kafonek et al 1989, Parmalee et al 1989). There are also shorter versions in use (D'Ath et al 1994, Sheikh and Yesavage 1986).

Weiss et al (1986) pointed out that the GDS fails to include several characteristic features of depression in the very elderly person, such as decreased self-care capacity, loss of self-esteem, and any somatic complaints such as lack of energy and fatigability (although item 21 asks 'Do you feel full of energy?'), insomnia and anorexia, which might limit its ability to identify depression in the very old person. There are also several items that may relate to anxiety, which may be useful given the high co-morbidity of depression and anxiety. Two items regarding cognitive functioning (14: 'Do you feel that you have more problems with memory than most?' and item 30: 'Is your mind as clear as it used to be?') might usefully be better phrased.

Although the Royal College of Physicians and the British Geriatrics Society recommend the routine screening of geriatric medical patients using the GDS, this is

³ The internal consistency of the scale items is, however, only relevant if the scale is to be used to measure severity.

seldom implemented. In my study examining doctors' attitudes to depression screening, two rotations of junior doctors (N = 20) in one department of medicine for the elderly were asked to read aloud and comment on the 15-item GDS. Doctors stated that they would like to use some form of depression screening instrument, and liked the possibility of quantifying depression rating. However, although 50% of doctors felt that they could incorporate some items of the GDS into their clinical practice, 35% stated that they definitely would not use the GDS. Reasons put forward for not using the GDS were that it was too artificial, would interfere with the development of rapport with the patient, the GDS was too time-consuming, non-specific in ill patients, and generally too 'maudlin,' 'worrying,' or 'depressing' to use routinely. (Hammond 2000)

The Hospital Anxiety and Depression Scale (HAD) (Zigmond and Snaith 1983)

This 14-item scale was designed specifically for use in patients with physical illness. As the two main disorders likely to be encountered are depression and anxiety, this scale distinguishes between the two. There are no items that could have any obvious physical disorder as an explanation (e.g. dizziness, headaches, insomnia, anergia, fatigue, pessimism about the future) so no judgments are required regarding aetiology. No symptom of severe mental disorder, which are uncommon and therefore less likely to be useful, is included.

The original development was on adult general medical outpatients, 16-65 years of age. One item, related to insomnia ('I am awake before I need to get up'), was eliminated from the scale during development because of a low correlation with total scale score (0.11). The seven-item depression scale is based on anhedonia, as '*probably the central feature of depression that responds well to drug treatment.*' The scale scores were found to be unaffected by physical illness.

Silverstone (1991) suggested that anhedonia should not be used as a basis for a diagnostic measure of depression because, in psychiatric out-patients, anhedonia was as commonly present in individuals with diagnoses of alcohol dependence, personality disorders, and '*other diagnoses.*' Anhedonia did distinguish between psychiatric patients with anxiety disorders or psychosis and depression, however, and the highest mean anhedonia scores were for depressed patients. Silverstone's argument is perhaps spurious, since the population of hospital patients is unlike

psychiatric patients. A further study (Silverstone 1994), with acutely physically ill patients, demonstrated a positive predictive value of only 17% for the HAD, although at the cut-off point of 8 the sensitivity (100%) and specificity (73%) of the depression scale were very good. Silverstone (1996a) noted that the PPV of the HAD was 'very poor for all cut-off points,' due to a low specificity. For detecting depression in elderly people, in whom anhedonia may be more prominent than dysphoria (Lawton et al 1996), the emphasis on anhedonia might be an advantage.

The Concise Assessment of Depression Scale (CAD)

Silverstone (1996a) developed his own screening scale, the CAD scale, for use in the medically ill, which was validated against ICD-10, DSM-IV and the modified Endicott criteria. The CAD detects both dysphoria and loss of interest, and contains items which occur significantly more frequently in depressed than non-depressed medical patients (Hawton et al 1990): social withdrawal, view of the future, depressed mood (3 items), and loss of interest. An initial question regarding depressed mood is asked, and if the patient '*denies a significantly lowered mood the interview is terminated.*' (Silverstone 1996a)

Validation was conducted on 313 patients over the age of 18 (non-depressed mean age 70.5, depressed mean age 62.1). Patients with a MMSE score of less than 22 were excluded. The PPV was 67 % with a cut-point of 4/5 (prevalence of depression 5.1%). Although the mean age of the patients in this study was quite high, the depressed patients were significantly younger than the non-depressed. Therefore it is possible that the emphasis on depressed mood would make this scale less valid in an older population, although Silverstone reported that reanalysing his data with those patients who responded to the anhedonia question but not the initial depressed mood question did not alter the results.

BASDEC (Adshead et al 1992)

In an effort to address the problem of lack of privacy in hospital wards, the Brief Assessment Schedule questions were printed on a deck of 19 cards (BASDEC), which the patient answers by placing in true, false, or don't know piles. In a population with a 33% prevalence of depressive disorders, the sensitivity was 71%,

specificity 88%, PPV 74% and NPV 86% (identical to the GDS in the same population), and similar results were obtained in another validation (Loke et al 1996).

The BASDEC was validated with cognitively unimpaired patients who could read (mean age 78.9 years), eliminating people with visual or communication difficulties, or those unable to understand directions. It is described as 'user friendly' by the authors, but it imposes a peculiar barrier between clinician and patient.

Evans Liverpool Depression Rating Scale (ELDRS) (Evans 1996)

This scale was designed specifically to detect depression in geriatric medical in-patients, and comprises items derived from the literature and clinical experience to represent symptoms most likely to predict depression in elderly physically ill patients. The first part consists of 10 questions to ask the patient, and the second section contains five observer-rated items.

The sensitivity and specificity of the ELDRS in identifying patients diagnosed as depressed according to the GMS-AGECAT, at the cut-off of five / six, were 95.5% and 87.5% respectively. Although irrelevant in a screening instrument, Cronbach's alpha coefficient for the entire scale in the initial validation study was 0.81. Removal of any item would not have increased the alpha coefficient, suggesting that these symptoms were all part of the same construct.

Some items actually had a rather weak correlation with the AGECAT diagnosis of depression (irritability, self-harm, guilt, low opinion of self, and worry were all under 0.30).

The Single Question

Interestingly, asking the question 'Do you often feel sad or depressed?' has been shown to have sensitivity and specificity in detecting cases of depression among community elderly (N=55, 51 men, prevalence of depression around 25%) as good as the 30 item GDS (Mahoney et al 1994). The authors point out that the sensitivity was only 0.69 for the single question, and lower (0.54) for the GDS, which means many cases of depression were missed by both methods. This also suggests that the CAD would have missed a large proportion of cases of depression in this population, as the single initial screening question concerns dysphoric mood.

In a meta-analysis of 8 studies of the outcome of depression in elderly physically ill patients, Cole and Bellavance (1997) commented that whichever criterion was used to identify depression (DSM-III, DSM-III-R, Research Diagnostic Criteria, GMS-AGECAT, or scores above 11 on the GDS or above 20 on the BDI), outcomes did not differ. They suggested that the best identifier of patients with persistent depression unlikely to spontaneously remit, who may require treatment, might be a history of depressive symptoms prior to admission as well as an elevated score on any depression scale.

Alternatives to self-rating and interview instruments

Neither self-rating nor interview-based methods of screening can be reliably used with cognitively or communication-impaired patients. Other screening methods may rely on information from relatives or other informants. House et al (1989) found that relatives of stroke patients identified all those with major depression, but over half of patients had no relatives available.

An observation-based rating scale that relies upon the behavioural manifestations of depression would be relevant to clinical practice, involving attention to the patient's behaviour and the observational skills of the clinician. Allman (1991) noted that using direct observation was unreliable in identifying depression in patients with right hemisphere or bilateral brain damage because their facial expression may be blank or they may 'look depressed.' However, Schwab et al (1967) found in patients with communication deficits that withdrawal, crying, irritability, aggressive outbursts, refusal to eat or cooperate, agitation or retardation, and changes in sleeping patterns may be diagnostic of depression. In stroke patients, observed depression (including sad, mournful, or tearful facial expression, gloomy tone of voice, deep sighing, or voice choking up when talking about something distressing) was found to be valid in identifying '*a syndrome of depression which was of the same severity as major depression.*' (Kishi et al 1996) '*Direct observation, interview of the patient and family, and, where feasible, psychometric assessment may be needed to minimize the different factors obscuring accurate appreciation of an older patient's emotional state.*' (Harper et al 1990)

The Signs of Depression Screening Scale (Hammond et al 2000)⁴

In an effort to specifically address the problems involved when patients are unable to communicate, my colleagues and I developed and validated the Signs of Depression Screening Scale (SDSS) in a population of elderly medical in-patients (mean age 81 years). The SDSS consists of six observations of behaviour, rated yes/no, and a score of three or more was found to be 90% sensitive and 72% specific in a sample in which the GMS-AGECAT prevalence of depression was 22%. Further validation, however, is required to establish whether the scale performs as well in a group of patients with whom a diagnostic interview could not be conducted (i.e. the patients with communication problems for whom the scale would be most valuable). This validation could only be established through a prospective treatment trial. In the majority of patients, this scale might still have the advantage of apparent relevance to clinical practice.

Discussion and Summary

Mayou and Hawton (1986) suggested that there is no screening instrument that is ideal, but that routine history should try to clarify any doubtful areas, and that careful observation should help. House et al (1989) strongly suggested that ways of improving the skills of nursing and general medical staff in the detection of affective disorders in their patients should be explored. He found that nurses asked to complete a simple four-point depression scale for stroke patients, rating patients from 'definitely not depressed' to 'definitely depressed,' and which included a single summary sheet of the main features of depression, failed to identify around 50% of those diagnosed as depressed by a psychiatrist; patients with depression who were identified by nurses and GPs were those who were obviously distressed and complained openly. Jackson and Baldwin (1993) commented that '*without appropriate training, nurses and doctors cannot be relied upon to detect or acknowledge clinically relevant depression in this population.*'

The routine use of depression screening instruments has the potential to aid clinicians who may otherwise overlook depression (especially in patients in whom obvious distress is not prominent). However, to be effective, the instrument must be

⁴ See appendix

one which doctors find acceptable and will therefore use. As my own research has suggested (Hammond 2000), feelings concerning a particular scale may vary considerably from person to person. A choice of scales might be one option. Otherwise, a simple reliable algorithm that doctors could incorporate into history-taking (similar to the CAGE screen for the identification of alcohol abuse), based, for example, on the four-item version of the GDS, might be most useful.

Depression screening scales which have been validated for use in geriatric patients already exist, although most cannot be used in the approximately one-third of patients with communication impairments. An observation-based scale (such as is included within the ELDRS) is a logical solution to this difficulty. Furthermore, it would have the advantage that doctors apparently feel that their identification of depression depends on their own observations and would be a validation of doctors' usual practice.

Symptoms and signs which discriminate depressed from non-depressed people are the basis of depression screening. Evaluation of the severity of depression that has already been diagnosed is the purpose of rating scales, which are discussed in the next section.

Depression Rating Scales

Depression rating scales are used clinically and in research to quantify depression severity, to assess change and response to treatment. Whereas the purpose of screening scales is to aid in the identification of depression, using depression rating scales reported as a global score is an attempt to quantify the theoretically derived construct of depression. The items in a scale purporting to measure this construct must be empirically related, and the scale must measure what it is assumed to measure with the minimum of error (Streiner 1993).

Scales must be reliable, valid and sensitive to change. Signs or symptoms included in a scale should occur in a significant proportion of cases, ratings should reflect the possible range, and change estimates should also be accurate and reflect a change in general severity of depressive illness (Montgomery and Asberg 1979, Rodin and Voshart 1986, Silverstone 1991).

Depression scales should have good content validity, contain core symptoms relating to features of depression which contribute to its severity in the relevant population, and a minimum of those relating to other syndromes: *'This condition is crucial if depression scales are to be used to evaluate the antidepressant efficacy of treatments and to discriminate antidepressant drug effects from anxiolytic drug effects.'* (Maier et al 1988b). In younger adults, these core symptoms would include depressed mood, non-reactivity of mood, anhedonia, psychomotor symptoms, feelings of guilt or inadequacy, lack of energy, sleep disturbance, and difficulty with concentration. The lack of consensus over the symptomatology of depression in the elderly person and in physical illness means that the construct of depression in elderly physically ill people is insufficiently well defined; therefore items within scales in common use may not be relevant. If there are differences in the presentation and symptomatology of depressive illness between older and younger adults, or between physically healthy and physically ill people, the scales which were developed in younger or healthy populations may not be suitable, may contain irrelevant items, may fail to contain appropriate items, and may therefore be misleading if used to assess effects of treatment. Clark et al (1983) suggested that hopelessness, guilt, self-blame, irritability, poor body image, work inhibition, and fatigue measure something

other than general depression severity and cannot be used to assess depression severity in the medically ill.

Examples and discussion of depression rating scales that have been used in elderly or ill groups of people are presented below.

The Even Briefer Assessment Scale for Depression (Allen et al 1994)

During the construction and validation of the Even Briefer Assessment Scale for Depression, a scale of 8 items with the highest item-total correlations was derived from the data of over 800 elderly people in variety of settings, including medical and surgical in-patients. Items with correlations below 0.30 included reported headaches, poor appetite, and slowness in physical movement compared with 12 months ago. The item with the lowest correlation was 'obvious self blame present' (0.12). Sleep disturbance correlated at 0.31. The highest item-total correlations included 'sad or depressed mood in last month,' 'felt life not worth living in last month', and 'depression lasts longer than a few hours.' Anhedonia questions correlated at 0.39 and 0.49.

Cronbach's alpha for the 8-item scale was 0.80. There were more questions in total concerning dysphoria than anhedonia, which influenced the item-total correlations, but this analysis suggests that self-blame and somatic symptoms were not part of the construct of depression in this heterogeneous group of elderly people.

Cardiac Depression Scale

Hare and Davies (1996) developed the Cardiac Depression Scale (CDS) to provide a suitable, self-rating, responsive scale to measure depression in cardiac patients. It was derived from 35 items with face validity, and in early validation with 248 ambulatory cardiac patients (mean age 59.3, range 17-88 years) items relating to libido, appetite, guilt and anxiety were removed as they showed low item-total correlations. The resulting 26-item scale had a Cronbach's alpha coefficient of 0.90, and consisted of seven factors: sleep, anhedonia, uncertainty, mood, cognition, hopelessness and inactivity. The strongest correlations with clinical assessment of severity were with the anhedonia factor (0.57), the mood factor (0.52), and the hopelessness factor (0.51). Interestingly, there was a significant correlation with age (-0.20, $p < 0.01$) for the cognition factor, which contained the items 'My memory is as

good as it always was,' 'my mind is as fast and alert as always,' and 'My concentration is as good as it ever was.' It seems possible that the phrasing of the items (which could refer to any time in the past including youth) produced the significance, and that conclusions regarding the appropriateness of questions concerning cognitive function in rating depression in older people cannot be drawn from this. There was no significant correlation with age for the sleep factor.

Depressive Signs in Dementia Scale

Katona and Aldridge (1985) developed a 9-item rating scale based on observation, the Depressive Signs in Dementia Scale (DSS), for use in assessing the effects of treatment of depression in patients with dementia. It is completed after interviewing the patient and also the nurse or relative directly involved in caring for the patient. Each item is rated from 'absent or never present,' to 'always or consistent,' marked on a three point scale. The nine items in the scale are sad appearance, reactivity, agitation, slowness of movement, slow speech, early waking, loss of appetite, diurnal variation, and lack of interest in surroundings. This scale was validated with a depressed, non-demented control group. Reported inter-rater reliability coefficients for the total score were excellent in both demented patients and the depressed control group, confirming the viability of observation as a useful method of identifying depression. The DSS has also been validated as a screening scale in psychogeriatric patients, where a cut-point of 5/6 resulted in 70% sensitivity and 72% specificity (Shah and Gray 1997).

Ravindran et al (1994)

From the 102 depression items in the GMS in elderly people (mean age 72) with DSM-III major depression, Ravindran et al (1994) devised a scale for rating depression severity using the 33 items which were most responsive to change. The authors noted that some symptoms of depression that were sensitive to change with treatment in younger people, were (although present in the older people) not subject to significant change. These symptoms included guilt and pessimism, and peripheral anxiety symptoms such as trembling. Retardation, however, which occurred frequently and was also sensitive to change in the elderly sample, is a symptom which occurs infrequently in younger people (Fleminger 1991, Montgomery and Asberg

1979). Other symptoms, although common in elderly depressed people, did not tend to change with treatment of depression. These were symptoms such as irritability, autonomic symptoms, and phobic symptoms. Comparing patients whose depression improved with those whose depression did not, the most responsive items included questions about sadness, difficulty relaxing, insomnia, indecision, lack of energy, and decreased activity. Other highly significant questions concerned crying, worry about health problems, appetite, recent loss of interest, and concentration loss. These results indicate that somatic symptoms of depression in these elderly people were important to measure.

Summary

The data from these studies suggest that a scale to assess depression severity in an elderly physically ill population might include items concerning dysphoria and anhedonia, suicidal feelings, hopelessness, crying, concentration loss, indecisiveness, retardation and loss of energy. Items relating to guilt, pessimism, self-blame, or irritability. The inclusion of some other symptoms, however, is still in question. Preoccupation with health, loss of appetite, insomnia, anxiety and tension, headaches, and reduced activity may not be part of the construct of depression in physically ill people, but it may nevertheless be important to measure these symptoms in elderly adults regardless of concomitant physical illness.

Two depression rating scales in common use

The Hamilton Depression Rating Scale (HAMD) (Hamilton 1960, 1967) is the most commonly used interview-based rating scale for depression severity in general adult populations (Song et al 1993) and in geriatric patients (Katona 1994). It has been used as a criterion measure to validate other depression scales, such as the GDS, in medically ill elderly populations (Lyons et al 1989); and it continues to be used as the main outcome measure in antidepressant trials (Anstey and Brodaty 1995, De Vanna et al 1990, Dorman 1992, Evans et al 1997a, Halikas 1990, Hutchinson et al 1991, Tiller et al 1990). The internal construct validity of the HAMD has been

criticised, suggesting that it is in any case an inadequate measure of depression severity (Bech et al 1981, Gibbons et al 1993, Maier et al 1988a).

The Montgomery-Asberg Depression Rating Scale (MADRS) (Montgomery and Asberg 1979) has been suggested as a better alternative to the HAMD for quantifying depression severity in the physically ill and in the elderly due to the relatively few somatic items within the scale (Katona 1994, Kearns et al 1982, Bech et al 1993).

Reliability and validity for elderly or physically ill people have not been established for either scale

The Hamilton Depression Rating Scale

The HAMD was designed to measure the severity of symptoms in clinical populations, and covers the topology of depressive symptoms in adults. Originally intended to be rated simultaneously by two clinicians and the scores combined, it is now commonly reported as a single total score by one rater. There are several versions: the 17-item HAMD, with items scored from 0 to 2 and 0 to 4, giving a total possible score of 52, can be used in an extended form, with a further four or seven questions concerning more severe symptoms (diurnal variation, strength of diurnal variation, depersonalisation, paranoid symptoms and compulsive symptoms, helplessness, hopelessness, and worthlessness), which may or may not be scored. [Figure 1]

The early development of the 17-item HAMD involved 49 male psychiatric in- and out-patients (Hamilton 1960). Further data on the HAMD was published in 1967, with both male and female psychiatric in- and out-patients (Hamilton 1967). Hamilton (1967) considered the HAMD to be 'closely related to a ratio scale' in that a score of '0' represents a non-pathological state.

A factor analysis of the HAMD in a sample of depressed community-dwelling elderly people (Kivela and Pakkala 1988) demonstrated a structure different from that found in younger adults (Hamilton 1967), suggesting that the scale 'clearly behaves differently' in elderly subjects. Its utility in elderly and physically ill populations has been questioned mainly due to the numerous somatic symptoms scored in the scale which can account for 58% of the total score (Silverstone 1991, Katona 1994).

Figure 1: Hamilton Depression Rating Scale items

1: depressed mood (sadness, hopeless, helpless, worthless):

- H1.0 absent
- H1.1 indicated only on questioning
- H1.2 spontaneously reported verbally
- H1.3 communicates feelings through facial expression, posture, and tendency to weep
- H1.4 reports virtually only negative feelings both verbally and non-verbally

2: feelings of guilt

- H2.0 absent
- H2.1 self-reproach, feels has let people down
- H2.2 ideas of guilt or rumination over past errors or sinful deeds
- H2.3 delusions of guilt; present illness is a punishment
- H2.4 hears accusatory or denunciatory voices and/or experiences threatening hallucinations

3: suicide

- H3.0 absent
- H3.1 feels life not worth living
- H3.2 wishes were dead or any thoughts of possible death to self
- H3.3 suicide ideas or gesture
- H3.4 serious attempts at suicide

4: early insomnia

- H4.0 no difficulty falling asleep
- H4.1 occasional difficulty falling asleep (i.e. more than 1/2 hour)
- H4.2 nightly difficulty falling asleep

5: middle insomnia

- H5.0 no difficulty
- H5.1 restless and disturbed during the night
- H5.2 waking during the night; any getting out of bed rates '2' (except for purposes of voiding)

6: late insomnia

- H6.0 no difficulty
- H6.1 waking early but goes back to sleep
- H6.2 unable to fall asleep again if gets out of bed

7: Work and interests:

- H7.0 no difficulty
- H7.1 thoughts and feelings of incapacity, fatigue, or weakness related to activities, work or hobbies
- H7.2 loss of interest in activity, work or hobbies—either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels has to push self to work or join in activities)
- H7.3 decrease in actual time spent in activities or decrease in productivity
- H7.4 stopped working because of present illness

8: retardation: Slowness of thought and speech, impaired ability to concentrate, decreased motor activity

- H8.0 normal speech and thought
- H8.1 slight retardation at interview
- H8.2 obvious retardation at interview
- H8.3 interview difficult
- H8.4 complete stupor

9: agitation

- 9.0 none
- 9.1 fidgetiness
- 9.2 'playing with' hands, hair, etc.
- 9.3 moving about, can't sit still
- 9.4 hand wringing, hair pulling, nail biting, biting of lips

10: psychic anxiety

- H10.0 no difficulty
- H10.1 subjective tension and irritability
- H10.2 worrying about minor matters
- H10.3 apprehensive attitude apparent in face or speech
- H10.4 fears expressed without questioning

11: somatic anxiety: Physiological concomitants of anxiety, such as gastrointestinal (dry mouth, wind, indigestion, diarrhoea, cramps, belching; respiratory (hyperventilation, sighing); urinary frequency; sweating.

- H11.0 absent
- H11.1 mild
- H11.2 moderate
- H11.3 severe
- H11.4 incapacitating

12: gastrointestinal symptoms

- H12.0 none
- H12.1 loss of appetite but eating without staff encouragement; heavy feelings in abdomen
- H12.2 difficulty eating without staff urging. Requests or requires laxatives or GI medicine

13: somatic symptoms, general

- H13.0 none
- H13.1 heaviness in limbs, back or head. Backaches, headaches, muscle aches, loss of energy and fatigability
- H13.2 any clear-cut symptoms rate 2

14. genital symptoms: symptoms such as loss of libido, menstrual disturbances

- H14.0 absent
- H14.1 mild
- H14.2 severe

15. hypochondriasis

- H15.0 not present
- H15.1 self-absorption (bodily)
- H15.2 preoccupation with health
- H15.3 frequent complaints, requests for help, etc.
- H15.4 hypochondriacal delusions

16: weight loss: ACTUAL WEIGHT CHANGE (since last visit)

- H16.0 no weight loss/weight loss NOT caused by present illness
- H16.1 weight loss probably caused by present illness
- H16.2 definite weight loss caused by present illness

17: insight

- H17.0 acknowledges being depressed and ill
 - H17.1 acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
 - H17.2 denies being ill at all
-

The Montgomery-Asberg Depression Rating Scale (MADRS)

The MADRS [Figure 2] was derived from the 65 scaled items in the Comprehensive Psychopathological Rating Scale (Asberg et al 1978). Sixty-four patients from a heterogeneous sample of 73 women and 33 men aged 18 to 69 with primary depressive illness (73 were psychiatric in-patients), were rated at baseline and after four weeks of antidepressant treatment. Items occurring in more than 70% of the total sample of patients at baseline were selected and subjected to sensitivity-of-change analyses to derive the 10 items most sensitive to change during treatment.

In the original publication, the authors instruct that 'The rating should be based on a clinical interview moving from broadly phrased questions about symptoms to more detailed ones which allow a precise rating of severity. The rater must decide whether the rating lies on the defined scale steps (0, 2, 4, 6) or between them (1, 3, 5).' (Montgomery and Asberg 1972)

Figure 2: Montgomery-Asberg Depression Rating Scale items

1: Apparent sadness: Representing despondency, gloom and despair (more than just ordinary transient low spirits) reflected in speech, facial expression and posture. Rate by depth and inability to brighten up.

- M1.0 no sadness
- M1.1
- M1.2 looks dispirited but does brighten up without difficulty
- M1.3
- M1.4 appears sad and unhappy most of the time
- M1.5
- M1.6 looks miserable all the time, extremely despondent

2: Reported sadness: Representing reports of depressed mood, regardless of whether it is reflected in appearance or not. Includes low spirits, despondency or the feeling of being beyond help and without hope. Rate according to intensity, duration and the extent to which the mood is reported to be influenced by events.

- M2.0 occasional sadness in keeping with circumstances
- M2.1
- M2.2 sad or low, but brightens up without difficulty
- M2.3
- M2.4 pervasive feelings of sadness or gloominess. The mood is still influenced by external circumstances
- M2.5
- M2.6 continuous or unvarying sadness, misery or despondency.

3: Inner tension: Representing feelings of ill-defined discomfort, edginess, inner turmoil, mental tension mounting to either panic, dread or anguish. Rate according to intensity, frequency, duration and the extent of reassurance called for.

- M3.0 placid, only fleeting inner tension
- M3.1
- M3.2 occasional feelings of edginess and ill-defined discomfort
- M3.3
- M3.4 continuous feelings of inner tension or intermittent panic which the patient can only master with some difficulty
- M3.5
- M3.6 unrelenting dread or anguish, overwhelming panic

4: Reduced sleep: Representing the experience of reduced duration or depth of sleep compared to the subject's own normal pattern when well.

- M4.0 sleeps as usual
- M4.1
- M4.2 slight difficulty dropping off to sleep or slightly reduced, light or fitful sleep
- M4.3
- M4.4 sleep reduced or broken by at least 2 hours
- M4.5
- M4.6 less than 2 or 3 hours sleep

5: Reduced appetite: Representing the feeling of loss of appetite compared with when well. Rate by desire for food or the need to force oneself to eat

- M5.0 normal or increased appetite
- M5.1
- M5.2 slightly reduced appetite
- M5.3
- M5.4 no appetite; food is tasteless
- M5.5
- M5.6 needs persuasion to eat at all

6: Concentration difficulties: Representing difficulties in collecting one's thoughts mounting to incapacitating lack of concentration.

- M6.0 no difficulties in concentrating
- M6.1
- M6.2 occasional difficulties in collecting one's thoughts
- M6.3
- M6.4 difficulties in concentrating and sustaining thought which reduces ability to read or hold a conversation
- M6.5
- M6.6 unable to read or converse without great difficulty

7: Lassitude: Representing a difficulty getting started or slowness initiating and performing everyday activities.

- M7.0 hardly any difficulty in getting started; no sluggishness
- M7.1
- M7.2 difficulties in starting activities
- M7.3
- M7.4 difficulties in starting simple routine activities which are carried out with effort
- M7.5
- M7.6 complete lassitude. Unable to do anything without help.

8: Inability to feel: Representing the subjective experience of reduced interest in the surroundings or activities that normally give pleasure. The ability to react with adequate emotion to circumstances or people is reduced.

- M8.0 normal interest in the surroundings and in other people
- M8.1
- M8.2 reduced ability to enjoy usual interests
- M8.3
- M8.4 loss of interest in the surroundings. Loss of feelings for friends and acquaintances.
- M8.5
- M8.6 the experience of being emotionally paralysed, inability to feel anger, grief or pleasure, and a complete or even painful failure to feel for close relatives and friends

9: Pessimistic thoughts: Representing thoughts of guilt, inferiority, self-reproach, sinfulness, remorse and ruin.

- M9.0 no pessimistic thoughts
- M9.1
- M9.2 fluctuating ideas of failure, self-reproach or self-depreciation
- M9.3
- M9.4 persistent self-accusations, or definite but still rational ideas of guilt or sin. Increasingly pessimistic about the future
- M9.5
- M9.6 delusions of ruin, remorse or unredeemable sin. Self-accusations which are absurd and unshakable

10: Suicidal thoughts: Representing the feeling that life is not worth living, that a natural death would be welcome, suicidal thoughts, and preparations for suicide. Suicide attempts should not in themselves influence the rating.

M10.0 enjoys life or takes it as it comes

M10.1

M10.2 weary of life. Only fleeting suicidal thoughts

M10.3

M10.4 probably better off dead. Suicidal thoughts are common, and suicide is considered as a possible solution, but without specific plans or intention

M10.5

M10.6 Explicit plans for suicide when there is an opportunity. Active preparation for suicide

The MADRS has been used as an outcome measure (Rahman et al 1991, Phanjoo et al 1991) in clinical trials with elderly patients. Kearns et al (1982) and Snaith et al (1986) noted that research on patients with physical illness and/or those patients who may be prone to experience side-effects from treatments (e.g. elderly people) would be better using the MADRS than the HAMD.

Silverstone (1990b) noted that the MADRS scores in seriously ill medical in-patients were significantly affected by the scores on somatic items (defined by him as sleep, appetite, concentration, and lassitude) within the scale.

Analyses of these two scales were undertaken to determine how well each assessed the construct of depression in a sample of elderly physically ill people, and to explore the construct of depression in the sample.

Chapter 3: Methods

The setting

The Royal Liverpool University Hospital; Aintree Hospitals, Liverpool

Participants

Acute medical in-patients, aged 65 and over, from consecutive admissions between July 1992 and December 1993, were eligible. Patients who were too severely ill, unable to communicate, too cognitively impaired to give consent for interview, or who refused to be interviewed, were excluded. Additional patients to complete the age- and sex-matched non-depressed control group were selected from non-depressed patients seen between January and November 1996 during a project developing and validating a screening scale for depression (SDSS), and between January 1996 and January 1997 at Aintree Hospitals during a study identifying depression in stroke patients.

Procedure

Patients were screened for depression using the Evans Liverpool Depression Rating Scale (ELDRS). Patients scoring 5 and over on the ELDRS were interviewed using the GMS, and a diagnosis established using AGECAT;⁵ the HAMD and MADRS

⁵ The GMS was developed from the Present State Examination (PSE) (Wing et al 1974) as a standardised diagnostic instrument for use with elderly people and 'follows broadly existing conventions... [and]...provides a reasonable diagnosis' (Copeland et al 1986). Using AGECAT standardises diagnosis. It is

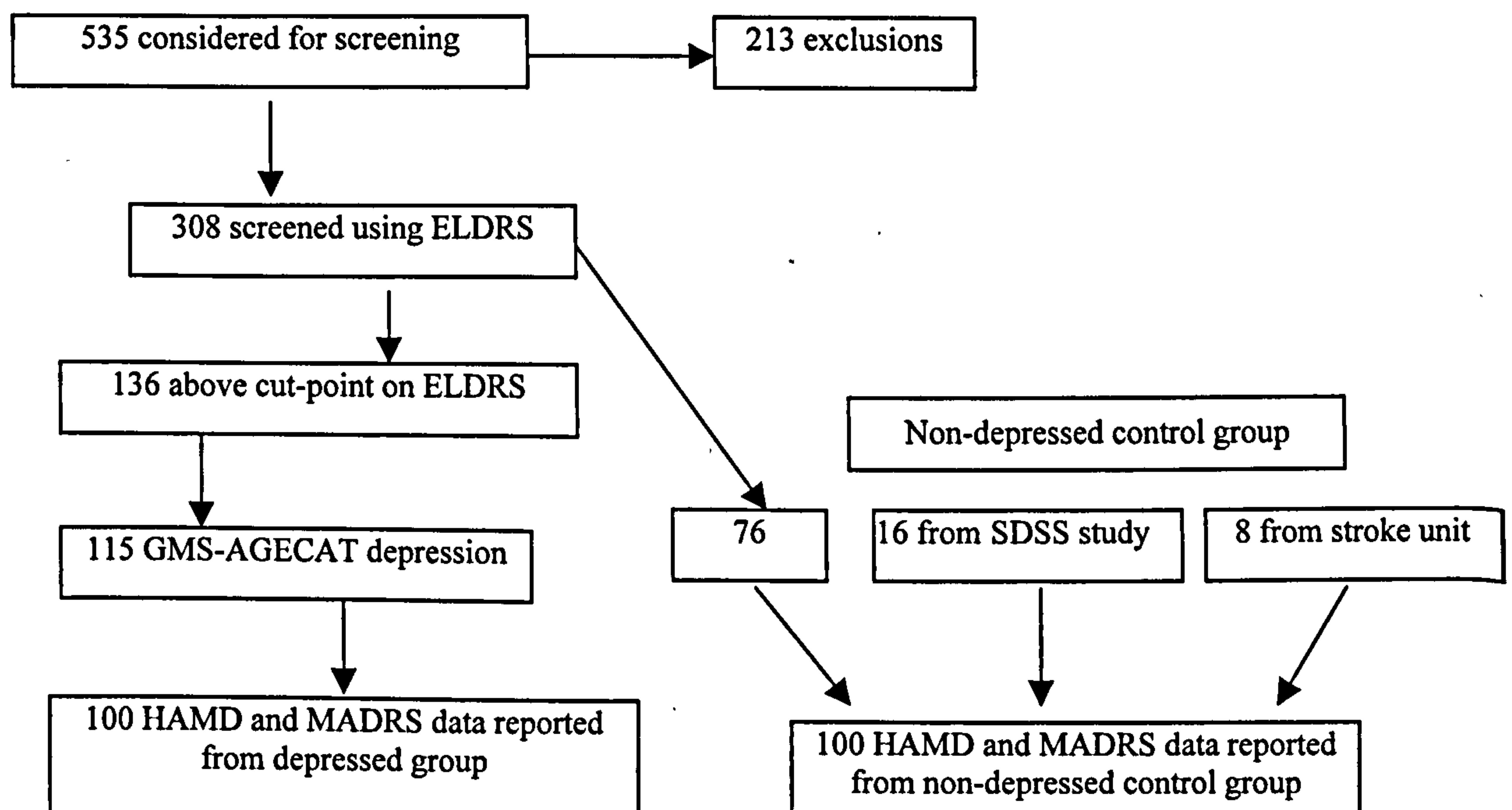
'a set of computer programs that analyse GMS data. Stage I of AGECAT produces levels of confidence on a scale of 0-5 for each of 8 syndrome clusters: organic brain syndrome, schizophrenia, mania, depression, obsessional neurosis, hypochondriacal neurosis, phobic neurosis and anxiety neurosis. Stage II arrives at a final diagnosis by comparing syndrome clusters. Levels of confidence of 3 and above correspond to what psychiatrists would usually recognize as a case requiring intervention (Copeland et al 1986).

GMS differentiates depression at case level and above into depressive psychosis (DP) (which corresponds with major depressive disorder), and depressive neurosis (DN), which does not include the symptoms *'generally associated with the more psychotic forms: worse a.m. retardation, substantial weight and appetite loss [and] frank psychotic symptoms'* (Copeland et al 1986) but nevertheless would benefit from treatment. It is possible for a case of depression to be diagnosed by AGECAT without the subject admitting to depressed mood or the interviewer observing depression if other criteria are fulfilled, thereby allowing for cases of 'masked' depression.

Case levels of DN3: 'must have characteristic symptoms in addition [to symptoms such as loss of concentration, interest, lack of enjoyment, lack of energy], such as depression worse in the evening,

were completed. The data from consecutively numbered non-depressed patients (including those from the depression screening scale validation study and the stroke depression study) were selected for inclusion until an age- and sex-matched sample of non-depressed patients was complete. Figure 3 illustrates the composition of the study population.

Figure 3: illustrating the sampling of the study population and control groups



difficulty getting off to sleep, depersonalisation, feelings of loneliness, etc. in the absence of more psychotic symptoms. DN4 is achieved if more severe symptoms are also prominent, such as, the future appearing bleak, wishing to be dead, feeling worthless, having conceived a suicidal plan or attempted to carry it out. Case levels of DP require symptoms such as depressive mood worse in the morning, being unable to cry, slowness in the morning, early morning wakening, retardation on examination, muddled thinking and combination of appetite and weight loss. Level 4 ...depends on the prominence of group D symptoms and level 5 on the presence of mood congruent delusions and/or hallucinations.' (Copeland et al 1987)

Analyses in brief

The frequency, severity and discriminatory power of depression scale items

The frequency and severity of symptoms were established for depressed and non-depressed patients, and the power of each sign or symptom to discriminate depressed from non-depressed patients was determined. For screening purposes, any item that discriminates well between depressed and non-depressed patients is useful, howsoever related to the construct. However, in a construct scale, items which are endorsed very frequently, or very rarely (e.g. by more than 80% or less than 20% of respondents), are usually removed (Streiner and Norman 1995), although core symptoms should be represented (Montgomery and Asberg 1979). It was predicted that feelings of guilt and suicidal feelings would not be prominent in this medically ill population; insomnia, although frequently endorsed, would be unrelated to severity of depression. These items might, therefore, be less useful in a construct scale.

The correlations of signs and symptoms of depression

The correlation matrices of the responses to all 27 items from the MADRS and HAMD scales from both depressed and non-depressed patients were examined for patterns of association. Pairs of variables were plotted graphically to reveal possible non-monotonic relationships between variables.

The reliability of the HAMD and MADRS rating scales

Reliability analyses (internal consistency, item homogeneity, and factor analyses) were carried out on both scales with the data of the depressed patients to examine the reliability of the scales in physically ill elderly people.

The factor structure of depression

The combined scale items were examined for internal consistency and factor structure in order to explore the construct of depression in this population.

Chapter 4: Results

Results (I): general

Subjects

From 308 patients screened for depression, 136 were above the cut-point for depression on the screening scale and were interviewed using the GMS. One hundred and fifteen had a GMS-AGECAT case level for depression diagnosis.

Eighty-five percent of patients reported no previous episodes of depressive illness. One-third of depressed patients reported that the current episode of depression had been progressive for more than 12 months; 35% percent had experienced persistent depression for three to 12 months, and in the remainder (31%) the current episode had commenced within the last three months.

GMS interview data

The GMS results from 115 patients (median age 80.5 year, range 66-99, 86 female) are reported in this study. Table 6 shows the distribution of AGECAT depression diagnoses among the patients.

Table 6: GMS-AGECAT depression diagnoses

<i>Depression type</i>	<i>Frequency</i>	<i>Percent</i>
DN3	53	46
DN4	14	12
DP3	15	13
DP4	33	29

HAMD and MADRS data

Depressed patients

HAMD and MADRS data from 100 consecutive depressed patients were used in the statistical analyses for reliability and factor structure. There were 74 female and 26 male subjects, median age 79 years (range 66 to 99). Subjects had a median of two (range 1 to 7) acute (e.g., cardiovascular, gastrointestinal, neurological,

respiratory) and a median of three (range 0 to 10) chronic illnesses (e.g., musculoskeletal, gastrointestinal, respiratory, neurological, cardiovascular, metabolic, sensory impairment). They were prescribed a median of six drugs (range 0-11) while in hospital. Over 50% were taking non-opioid analgesics, laxatives, diuretics, or antibiotics.

The median score for the sample on the HAMD was 21 (range 11 to 32). The median score on the MADRS was 26 (range 9-44).

Male/female comparisons

Fisher's Exact Test or Chi squared analyses were carried out as appropriate to compare the frequencies between men and women on individual items. There were no significant differences for any of the items except for the HAMD suicide item (item 3); Chi square (4df) = 8.85, $p = 0.031$. A significantly greater percentage of women than men wished they were dead or had persistent thoughts of death.

Non-depressed group

There were 74 female and 26 male subjects, median age 79 years, (range 65-95). Subjects had a median of one (range 1-4, mean 1.32) acute, and a median of three (mean 2.7, range 0-8) chronic illnesses. They were prescribed median of four (range 0-12) drugs while in hospital. The median HAMD score was seven (range 0-19); the median MADRS score was 8 (range 0-29).

Because the non-depressed group included 8 patients drawn from a different population of elderly in-patients (i.e. patients in a unit for the treatment of stroke), independent t-tests for equality of means were conducted to establish whether there were any statistically significant differences on any of the signs and symptoms measured by the MADRS and HAMD scales between those 8 patients and the 92 patients drawn from the geriatric medical wards. Ninety-five percent confidence intervals revealed no significant differences between groups. (The table of results is in the appendix.)

Results (II): Discriminatory power of signs and symptoms of depression

Frequency of endorsement of scale items

Symptoms of depression are frequently reported as present or absent, without regard for severity. Table 7 presents the percentage of endorsement above '0' for all HAMD and MADRS items.

Table 7: frequency of endorsement above '0' of HAMD and MADRS items

(related items in the two scales are adjacent)

HAMD items	%	%	MADRS items	%	%
	<u>D</u>	<u>ND</u>		<u>D</u>	<u>ND</u>
1. Depressed mood	100	45	1. Apparent sadness	100	65
2. Guilt feelings	31	10	2. Reported sadness	97	42
3. Suicide	71	10	9. Pessimistic thoughts	41	13
4. Early insomnia	76	56	10. Suicidal thoughts	86	20
5. Middle insomnia	78	58			
6. Late insomnia	70	54	4. Reduced sleep	90	64
7. Work and interests	98	69	7. Lassitude	97	44
			8. Inability to feel	97	22
8. Retardation	78	23			
9. Agitation	61	32	3. Inner tension	85	40
10. Psychic anxiety	91	40			
11. Somatic anxiety	65	53	5. Reduced appetite	82	56
12. Gastrointestinal	83	43			
13. General somatic	95	53			
14. Genital	4	1			
15. Hypochondriasis	63	11			
16. Weight loss	52	--			
17. Loss of insight	30	--	6. Concentration loss	67	38

(D = depressed ND = non-depressed)

Some items (depressed mood, apparent sadness, sleep difficulties, lassitude, inability to feel, general somatic symptoms, psychic anxiety, work and activities) are almost universally endorsed in depressed patients; while others (notably genital symptoms but also guilt feelings, and loss of insight) infrequently.

Among the non-depressed patients, H7 (work and interests), reduced sleep (M4) and apparent sadness (M1) were endorsed most frequently by around two-thirds. Individual insomnia items, reduced appetite, general somatic symptoms, and somatic

anxiety were found in approximately one-half. MADRS item 2 (reported sadness) was endorsed by 42% of non-depressed patients, approximately half the percentage noted by Sadavoy et al (1990) in their sample of chronically ill geriatric patients. Less than 25% scored positively on M8 (anhedonia), retardation, or suicidal feelings; and guilt, pessimism and hypochondriasis were rare.

Some items, which initially appear equivalent in the two scales, are shown to elicit different responses:

- suicidal thoughts
- guilt feelings/pessimism
- sleep disturbances/insomnia
- GI symptoms/appetite disturbance
- depressed mood/reported sadness
- psychic anxiety and somatic anxiety/inner tension.

This appears to be due to differences in severity and wording. The wording of some HAMD items in particular is imprecise, and, although for an individual item the wording may relate to a commonly experienced symptom at one level, at the next level it may relate to a pathological symptom. For example, HAMD item 7 (work and interests) includes thoughts and feelings of fatigue and weakness, common symptoms in illness, at one level; and loss of interest, which may be highly discriminatory, at another. HAMD item 8 (retardation) includes both slowness (decreased motor activity), and impaired ability to concentrate and indecisiveness.

Discriminatory power of scale items

Frequency responses were compared between depressed and non-depressed patients to determine the discriminatory power of scale items. Ninety-nine percent confidence intervals were calculated between groups for differences in proportions of patients scored '0' for each item. Chi square analyses were used to determine if groups differed in any respect in their distribution among the levels of the scale items.

Statistically significant items were partitioned for further Chi square analyses to determine the location of significant differences using the method described by

Siegel and Castellan (1990).⁶ The detailed results of frequency analyses, Chi squared and confidence interval analyses are presented below, with discussion.

Responses from GMS interviews with depressed patients, which give more precise and detailed information, were used to clarify symptoms. Valid percentages of responses to GMS questions are reported in the tables. Where additional patients were unable to give a definite reply or where the meaning of their response was unclear, this is noted. Items from the scales are grouped together under symptom headings.

Anhedonia-related items

Anhedonia, or loss of pleasure and interest, is assessed by item M8 [Table 8]; and by H7 [Table 9] which also includes other symptoms.

Most strikingly, over half of depressed patients reported a loss of interest and/or feeling for people or surroundings, compared with only one patient who was not depressed. All partitions except M5.2 were significant at $p < .001$, and the confidence interval is very high, suggesting that any reported feeling of loss of normal interest is an important discriminator, although it is not clear from the responses whether there is any difference between a loss of interest in people and loss of interest in surroundings. There were no observations at the severe end of M8 (8.5 and 8.6). This was possibly due to leniency in scoring, although even among the most severely depressed patients, there were feelings of anticipation for the visits of friends or family or at the thought of seeing a pet again. This could be an effect of hospitalisation, or due to the mainly moderate severity of depression.

⁶ This entails partitioning the initial contingency table into a series of 2 x 2 subtables, collapsing successive subtables and analysing each resulting sub-table using the marginal distributions of the entire sample and not just the individual subtable; subtables are then independent and have one degree of freedom

Table 8: MADRS item 8: anhedonia

Inability to feel: representing the subjective experience of reduced interest in the surroundings or activities that normally give pleasure. The ability to react with adequate emotion to circumstances or people is reduced.

		number of patients	
		depressed	not depressed
M8.0	normal interest in the surroundings and in other people	3	78
M8.1		6	4
M8.2	reduced ability to enjoy usual interests	34	17
M8.3		47	0
M8.4	loss of interest in the surroundings. Loss of feelings for friends and acquaintances	10	1
M8.5		0	0
M8.6	The experience of being emotionally paralysed, inability to feel anger, grief or pleasure, and a complete or even painful failure to feel for close relatives and friends	0	0

Observed difference between proportions of patients scored '0': 0.75, SE diff 0.0448, 99% CI 0.634 to 0.866

Chi squared 129.875 df 4, $p < .001$ ⁷

partition	chi square	probability
2.2	11.284	<.001
3.2	42.143	<.001
4.2	68.656	<.001
5.2	7.792	<.01

⁷ The results of the chi square partitions are reported as follows:

2.2 is the result of the first partition, i.e. between a score of '0' and the next rating of severity.

3.2 is the results of the second partition, i.e. between the sum of the first two categories and the third rating of severity

4.2 is the result of the third partition, i.e. between the sum of the first three categories and the next rating of severity and so on.

For example, the results of the chi square analysis of MADRS item 8 (anhedonia) reports the results from the basic chi square analysis, demonstrating that there is a significant difference between depressed and non-depressed patients. The partitioned chi square analyses demonstrate that as the symptom is rated as more severe, there is a progressively greater difference between groups until the numbers in both groups are small.

H7 [Table 9] includes anhedonia, anergia, and cognitive symptoms. In rating, decrease in time spent in activities (H7.3) depended more upon loss of desire than physical incapacity. This item, therefore, was scored more as a measure of reduced motivation than anergia. At the severe end (H7.4), 'present illness' refers to depressive, not physical, illness. Anhedonia is assessed by H7.2, where again nearly twice as many depressed as non-depressed patients may have reported loss of interest.

Table 9: HAMD item 7: work and interests

		number of patients	
		depressed	not depressed
H7.0	no difficulty	2	31
H7.1	thoughts and feelings of incapacity, fatigue, or weakness related to activities, work or hobbies	15	47
H7.2	loss of interest in activity, work or hobbies--either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels has to push self to work or join in activities)	21	12
H7.3	decrease in actual time spent in activities or decrease in productivity	52	7
H7.4	stopped working because of present illness	10	3

Observed difference between proportions of patients scored '0': 0.29, SE diff 0.0483, 99% CI 0.165 to 0.415

Chi Squared 82.547, df 3, p <.001

partition	chi square	probability
2.2	2.833	NS
3.2	20.498	<.001
4.2	55.185	<.001
5.2	4.031	<.05

H7 discriminates less well than M8, particularly in the differences between a score of '0' and any other level of endorsement. The multiple symptoms assessed by H7 dilute the ability of this item to detect possible differences between groups. The inclusion of indecision with this item may be a particular problem (see Table 26). In addition, M8 assesses loss of interest in people and surroundings, whereas H7.2 enquires about loss of interest in activities and usual interests, which may also be a source of difference between the two scale items. In H7.1, nearly half of the non-depressed reported feelings of incapacity or weakness.

The GMS questions relating to anhedonia [Table 10] are broadly phrased to encompass any loss of interest or enjoyment. Ten percent report severe symptoms

(gms113.1, 114.1), which seems to agree with the most severe ratings on M8 and H7. Gms115.3 appears to support the two most severe levels rated in each scale, and indicates that there is a difference between loss of interest and loss of enjoyment.

Table 10: GMS items relating to anhedonia

	%
gms113.1 has less interest in things in the last month than used to have	54
gms113.1 severe/frequent/persistent decrease in interest (6 respondents uncertain)	4
gms114.1 almost nothing enjoyed recently	53
gms114.1 severe/frequent/persistent loss of enjoyment (6 replies uninterpretable)	6
gms115.1 falling-off of interest/enjoyment gradual over several years (5 respondents uncertain)	10
gms115.2 falling-off of interest/enjoyment has occurred only within the last 3/12 (6 respondents uncertain)	37
gms115.3 loss of interest/enjoyment attributed to depression/anxiety (15 respondents uncertain)	37
gms115.3 severe/frequent loss of interest/enjoyment	10
gms115.3 loss of interest/enjoyment most days for >2/52 in 4/52	61
gms115.3 severe/frequent/persistent loss of interest/enjoyment most days for > 2/52 in last month (5 respondents uncertain)	10

According to DSM criteria, either persistent anhedonia or low mood is required for a diagnosis of depression to be made. In these depressed patients, anhedonia was definitely reported by around one half, and the same percentage of patients felt their loss of interest occurred only recently as were able to attribute anhedonia to depression or anxiety. However, 15 respondents were unable to determine an attribution for their loss of interest or enjoyment.

M8 discriminated extremely well between groups: both the Chi square statistics and the confidence intervals placed this item as the single best discriminator between groups. H7 is much less useful, probably due to the multiple symptoms assessed. In the study by Lawton et al (1996) of intraindividual variation in positive and negative affective states among elderly people (mean age 82.8), the authors stated that '*Stretches of anhedonia were least often broken among depressed people*' and that '*anhedonia as one important marker of depression is elevated in importance*' by the findings of the study. There may be a need to distinguish between loss of interest in friends, family, and loss of interest in surroundings, and activities or usual interests, which could be further explored.

Libido

Under DSM criteria, loss of libido is considered to be a symptom of anhedonia, and is specifically assessed by H14. Some investigators have eliminated this item from scales for use with elderly populations (e.g. Good et al 1987); Hamilton (1967) suggested that when information was not available, in menopausal women, or when a patient was sexually inactive this item should be scored '0'. For elderly people, many of whom have no sexual partner, this question may often be irrelevant. Although of clinical relevance in some individuals, this item appears to have no place in a rating scale for this population; only 4% of the depressed patients, and one percent of the non-depressed, answered positively. The observed difference between proportions of patients scored '0' was 0.03 (SE diff 0.022) and the 99% CI was from -0.0267 to 0.0867. The Chi square statistic was 2.046 (df 2, NS).

Mood and appearance

Two items in the scales (M2, Table 11; and H1, Table 12) concern reported dysphoria; H1 also includes observed depressed mood. M1 [Table 13] rates observed mood only.

Low mood was not uncommon among the non-depressed patients, with over one-quarter reporting definite non-reactive dysphoria. However, a score above '0' for M2 is still a reasonable discriminator, and the significant differences noted at M2.2 and M2.3 appear to relate to the degree of reactivity and relative pervasiveness of the low mood.

All depressed patients were rated positively on H1, and nearly one half of the non-depressed patients also reported sadness or low mood or appeared depressed. Unlike M2, there is no allowance in H1 for occasional appropriate sadness.

There appears to be a great difference between groups as to whether patients volunteered their low mood, with depressed patients more likely to express dysphoria spontaneously (H1.2); however, if dysphoria was not present (which was more likely in the non-depressed group), there would be no actual dysphoria to report. The observed difference may therefore be spurious.

Table 11: MADRS item 2: reported sadness

Representing reports of depressed mood, regardless of whether it is reflected in appearance or not. Includes low spirits, despondency or the feeling of being beyond help and without hope. Rate according to intensity, duration and the extent to which the mood is reported to be influenced by events.

		number of patients	
		depressed	not depressed
M2.0	occasional sadness in keeping with circumstances	3	58
M2.1		1	14
M2.2	sad or low, but brightens up without difficulty	5	16
M2.3		33	6
M2.4	pervasive feelings of sadness or gloominess. The mood is still influenced by external circumstances	44	6
M2.5		14	0
M2.6	continuous or unvarying sadness, misery or despondency.	0	0

Observed difference between proportion of patients scored '0': 0.44, SE diff 0.06, 99% CI 0.284 to 0.596

Chi square 58.123 df 5, $p < 0.001$

partition	chi square	probability
2.2	0.698	NS
3.2	32.191	<.001
4.2	23.868	<.001
5.2	0.352	NS
6.2	1.015	NS

Table 12: HAMD item 1: depressed mood

(sadness, hopeless, helpless, worthless):

		number of patients	
		depressed	not depressed
H1.0	absent	0	55
H1.1	indicated only on questioning	8	26
H1.2	spontaneously reported verbally	17	9
H1.3	communicates feelings through facial expression, posture, and tendency to weep	55	10
H1.4	reports virtually only negative feelings both verbally and non-verbally	20	0

Observed difference between proportions of patients scored '0': 0.55, SE diff 0.0497, 99% CI 0.422 to 0.678

Chi squared 118.145 df 4, $p < .001$

partition	chi square	probability
2.2	4.653	NS
3.2	25.599	<.001
4.2	65.671	<.001
5.2	22.222	<.001

If spontaneously reported dysphoria is rated as more severe, but elderly people tend not to spontaneously report (Georgotas 1983, Goldney and Hugo 1984), no practical distinction can be made between a score of H1.1 and H1.2. It is not possible to determine at this point whether patients reporting dysphoria only when asked were, in fact, less severely depressed, especially as the more severe ratings on H1 refer to observation of mood. That only 8 depressed patients reported low mood only when specifically questioned, however, suggests little reluctance to volunteer or admit to feelings of depression.

H1 is a better discriminator than M2, which may be due to the inclusion of non-verbal communication in H1, as the greatest difference between groups is regarding appearance (H1.3). H1 overlaps at this point with M1 [Table 13], which is exclusively observational.

Table 13: MADRS item 1: apparent sadness

Representing despondency, gloom and despair (more than just ordinary transient low spirits) reflected in speech, facial expression and posture. Rate by depth and inability to brighten up.

	number of patients	
	depressed	not depressed
M1.0 no sadness	0	35
M1.1	1	25
M1.2 looks dispirited but does brighten up without difficulty	31	30
M1.3	34	6
M1.4 appears sad and unhappy most of the time	24	4
M1.5	9	0
M1.6 looks miserable all the time, extremely despondent	1	0

Observed difference between proportions of patients scored '0': 0.35, SE diff 0.0477, 99% CI .227 to .473

Chi squared 100.146 df 6, sig p < 0.001

partition	chi square	probability
2.2	0.088	NS
3.2	29.509	<.001
4.2	40.298	<.001
5.2	19.615	<.001
6.2	10.635	NS

All depressed patients appeared depressed, although not all reported depressed mood, and not all reported anhedonia (M8). More non-depressed patients appeared sad than actually reported feeling sad. Sixty-five percent of the non-depressed group appeared depressed to some degree; the 10 patients rated at M1.3 and M1.4 are

perhaps the same patients rated at H1.3 (several of whom were recently bereaved).

Endorsement above '0' for this item discriminates between groups about as well as M2; as in M2, it is pervasiveness and reactivity which distinguish best between groups (M1.3). The proportion of non-depressed patients with some depressed appearance hints at the difficulties medical and nursing staff may experience when attempting to distinguish depressed from non-depressed patients. However, in the development of an exclusively observation-based screening scale for depression in elderly physically ill patients, the question 'Does the patient sometimes look sad, miserable or depressed?' was found to be 85% sensitive and 80% specific in identifying depressed patients when rated by nurses. The negative predictive value of this question alone was 0.89. The corrected inter-rater agreement for this question was Kappa 0.77, indicating a reasonable consistency in the recognition of depressed appearance. (Hammond et al 2000)

Although the appearance of depression may have raised suspicions about the possibility of the presence of depression, the actual diagnosis did not depend upon appearance. Therefore, patients in this study were not diagnosed as depressed solely because they looked depressed. H1.3 demonstrates that over seven times as many depressed as non-depressed patients communicated depressed mood non-verbally. M1 and H1.3 and H1.4 suggest that a relatively non-reactive depressed appearance was present in only 10% of the non-depressed group.

The behavioural manifestations of anhedonia are readily observable, and are in fact observed by nurses, physiotherapists and doctors, and are commented upon (e.g. unmotivated, not interested in going home, spends most of the day in bed, reluctant to mobilise). The withdrawn patient who shows little interest in surroundings is observable and identifiable by nurses, and this item was the second most sensitive (80%) and the second most specific (83%) for depression examined in geriatric in-patients (Hammond et al 2000).

According to GMS data [Table 14], over ninety percent of depressed patients had either cried recently or felt like crying. Over one-third cried during the interview. Some patients stated that they wished they could cry but were unable to. Oxman et al (1990) reported that 52.8% of elderly primary care patients with depressive disorder, compared with 8.2% of non-depressed, complained of 'crying easily.' Crying was noted by Clark et al (1983) in younger medically ill in-patients to be an important

discriminatory sign. Crying or feeling like crying should probably be included as a screening scale item. It has the certain advantage of being an unambiguous question for the patient. The item 'Does the patient ever cry or seem weepy?' was found to be the most single most specific (87%) observed sign in identifying depression in elderly medical in-patients (Hammond et al 2000).

Table 14: GMS items: dysphoria

	<u>% of depressed</u>
Reported dysphoric mood:	
gms21.1 sad recently	95
gms25.1 fluctuating mood (7 respondents uncertain)	57
gms24.1 persistent low mood (lasts longer than just the occasional few hours) (5 respondents uncertain)	84
gms24.3 persistent low mood present for >2/52 in last 4/52 (4 respondents uncertain)	90
gms21.1 severe/frequent/persistent sadness	23
gms24.2 low mood present most of the time (7 respondents uncertain)	47
gms27.1 nothing relieves the depression (7 respondents uncertain)	15
gms27.2 depression not relieved for several hours at a time (by having visitors, entertainment etc.) (9 respondents uncertain)	25
gms22.2 cried at all recently	66
gms22.2 persistent/frequent crying recently	15
gms23.1 hasn't cried but felt like crying	25
gms23.1 hasn't cried but felt like crying all the time (1 respondent uncertain)	2
<i>Observation</i>	
gms33.1 observed tense/worried/depressed/fearful	95
gms33.3 appeared sad/gloomy/mournful/depressed	94
gms33.1 observed severely tense/worried/depressed/fearful	28
gms33.3 appears severely depressed	18
gms33.5 tearful/crying	37
gms33.5 continuously crying	1

Reported sadness (M2), which is an interpretation by the interviewer of the patients' responses, may (in common with M8) have been scored too leniently, judging from the percentage responses for gms27.2: on detailed questioning, if the patient could think of anything at all they made them feel better, they were not marked at M2.5 or M2.6. One woman, so severely depressed that it was decided she should receive ECT in the medical ward and not await transfer to the psychogeriatric unit, nevertheless felt momentary relief when talking about her pet cat. The

discrepancy might also be due to the different time scale under consideration (72 hours in the case of the MADRS item, and four weeks for the GMS).

Insight

Insight into depression by the patient is assessed by H17. No comparison with the non-depressed group is appropriate for this item. Seventy percent either volunteered or agreed that they were experiencing depression, and the remaining 30% agreed that they were depressed but felt it was secondary to other factors. Not one of these 100 patients denied that they were depressed. Other studies (Oxman et al 1990) have confirmed that elderly people with depression '*when asked about their symptoms...do not deny them.*' As the aetiology of depression is unquestionably complex in this population, this item, which requires a judgment on the part of the patient concerning the genesis of depression, is possibly more a question of opinion than insight, and is therefore not appropriate in patients with significant physical comorbidity.

Suicidal feelings

Suicidal feelings are covered by a single item in each scale: M10 [Table 15] and H3 [Table 16]. As there were no patients in this sample who admitted to active suicidal intent or suicide attempts, there are no endorsements at the severe end of either scale.

Both items discriminated extremely well between groups, even at low levels of severity. M10 discriminates better than H3, with highly significant differences at all levels and a slightly higher confidence interval. H3 has fewer options of endorsement at the less severe levels than M10. Feeling that one is probably better off dead is not rated in H3 and appears in M10 to discriminate very well. Extrapolating from H3.3, it appears that at least 17 out of the 20 people who felt they would probably be better off dead (M10.4) had not considered suicide.

Table 15: MADRS item 10: suicidal thoughts

Representing the feeling that life is not worth living, that a natural death would be welcome, suicidal thoughts, and preparations for suicide. Suicide attempts should not in themselves influence the rating.

		number of patients	
		depressed	not depressed
M10.0	enjoys life or takes it as it comes	14	80
M10.1		23	15
M10.2	wearry of life. Only fleeting suicidal thoughts	24	5
M10.3		19	0
M10.4	probably better off dead. Suicidal thoughts are common, and suicide is considered as a possible solution, but without specific plans or intention	20	0
M10.5		0	0
M10.6	Explicit plans for suicide when there is an opportunity. Active preparation for suicide	0	0

Observed difference between proportions of patients scored '0': 0.660, SE diff 0.053, 99% CI 0.523 to 0.797

Chi squared 99.473 df 4, p <.001

partition	chi square	probability
2.2	22.54	<.001
3.2	28.486	<.001
4.2	26.225	<.001
5.2	22.222	<.001

Table 16: HAMD item 3: suicide

		number of patients	
		depressed	not depressed
H3.0	absent	29	90
H3.1	feels life not worth living	29	8
H3.2	wishes were dead or any thoughts of possible death to self	39	2
H3.3	suicide ideas or gesture	3	0
H3.4	serious attempts at suicide	0	0

Observed difference between proportions of patients scored '0': 0.61, SE diff 0.544, 99% CI 0.47 to 0.75

Chi squared 79.578, df 3, p < 0.001

partition	chi square	probability
2.2	32.931	<.001
3.2	43.601	<.001
4.2	3.046	NS

The discrepancy seen between the GMS data [Table 17] (in which 55% of the GMS respondents indicated that they felt that life was not worth living) and the

HAMD scores (where 71% of the sample could be presumed to feel that life was not worth living) may relate to the differences in length of time under consideration (four weeks for the GMS, 72 hours for the HAMD). It could also be that feeling life is not worth living is not in this population less serious than wishing to be dead. Also, feeling life is not worth living, and feeling one is probably better off dead are apparently not the same, as 55% of depressed patients felt life was not worth living, but only 29% felt they would be better dead.

Table 17: GMS items: suicidal feelings

	<u>% of depressed</u>
gms28.1 has felt life not worth living	55
gms28.1 frequently/severely/persistently has felt life is not worth living (3 respondents ambiguous)	10
gms29.1 empty expectations/lives from day to day (4 respondents ambiguous)	50
gms29.2 pessimistic/future seems bleak or unbearable/can see no future (7 respondents ambiguous)	30
gms29.3 general feeling of hopelessness and despair (8 respondents ambiguous)	16
gms29.4 pessimism obviously warranted by circumstance (10 patients were unratable on this question)	1
gms30.1 has ever felt suicidal or wished to be dead (4 respondents ambiguous)	43
gms31.1 in last month (4 respondents ambiguous)	39
gms31.2 in last year (8 respondents ambiguous)	14
gms31.3 has felt a wish to be dead for >2/52 in the last month	29
gms31.3 has frequently/persistently/severely felt a wish to be dead in the last month (3 respondents ambiguous)	3
gms32.1 has done something or planned to do something about killing self (3 respondents were ambiguous and one patient was not asked)	0
gms32.2 has rejected suicide but wished to be dead because life is a burden (rejected suicide usually because of the potential effect on family or because it was against their religious beliefs) (3 respondents were uninterpretable)	37

Around a third of patients actively wished they were dead, or thought they were probably better off dead, or had considered but rejected suicide as an option; and it appears that no non-depressed patients felt this way. These questions are relatively unambiguous for the patient, especially compared with questions regarding the future and feelings of hopelessness and despair.

Wishing to be dead, or thinking of suicide without actual intent, is obviously discriminating. In their study of primary care patients, Oxman et al (1990) found that

only 5.3% of the elderly depressed patients (and none of those without depression) reported 'suicidal thoughts.' This reinforces the qualitative difference between actual suicidal thoughts and wishing to be dead without intent of action.

Although nearly one-third of depressed patients did not report any 'suicidal' feelings, the majority experienced latent or active feelings that life itself was a burden. In this population of elderly and physically ill people, the option of death may appear very genuine, more so than in a younger group. These questions have important and subtle qualitative differences that should be examined.

Anergia

M7 [Table 18] assesses lassitude. In scoring this item, it was necessary to differentiate, where possible, actual physical inability to perform actions from real lassitude: the 'effort' required was more mental than physical. H7 [Table 9] assesses feelings of loss of energy, fatigue, weakness and incapacity, in addition to loss of interest. Loss of energy is also included in H13 [Table 19].

At H7.1, nearly one half of non-depressed patients reported subjective fatigue, weakness or incapacity. At H7.2, which includes the symptoms of listlessness, as well as loss of interest, indecision and vacillation, it becomes discriminatory, and at the level of behaviour rating (H7.3) there was a marked increase in the differences between groups, with over six times as many depressed as non-depressed patients reporting a decrease in activity.

M7 discriminates very well between groups, particularly when patients are aware of difficulty in initiating and carrying out simple everyday tasks (M7.4, 5). Depression, therefore, seems to have been associated with both a difficulty in starting activities and a reduction in the amount of time spent in normal activity (with no assumptions regarding causality).

Table 18: MADRS Item 7: lassitude

Representing a difficulty getting started or slowness initiating and performing everyday activities.

		number of patients	
		depressed	not depressed
M7.0	hardly any difficulty in getting started; no sluggishness	3	57
M7.1		3	13
M7.2	difficulties in starting activities	22	19
M7.3		17	6
M7.4	difficulties in starting simple routine activities which are carried out with effort	42	5
M7.5		12	0
M7.6	complete lassitude. Unable to do anything without help.	1	0

Observed difference between proportions of patients scored '0': 0.530, SE diff 0.0525.

99% CI 0.395 to 0.665

Chi squared 102.552 df 6, p <.001

partition	chi square	probability
2.2	0.941	NS
3.2	29.337	<.001
4.2	16.831	<.001
5.2	42.352	<.001
6.2	13.091	<.001

H13 [Table 19] assesses general somatic symptoms including loss of energy. The majority of depressed patients reported either clear-cut loss of energy and fatigability, and/or backaches, headaches and/or muscular aches. That there are somatic symptoms associated with depression is undoubted: only five depressed patients complained of none, compared with nearly one half of the non-depressed group, although apparently similar numbers complained of vague and/or mild symptoms (H13.1).

Table 19: HAMD item 13: general somatic symptoms

		number of patients	
		depressed	not depressed
H13.0	none	5	47
H13.1	heaviness in limbs, back or head. Backaches, headaches, muscle aches, loss of energy and fatigability	20	23
H13.2	any clear-cut symptoms rate '2'	75	30

Observed difference between proportions of patients scored '0': 0.42, SE diff 0.0545, 99% CI 0.279 to 0.561

Chi squared 53.42 df 2, p <0.001

partition	chi square	probability
2.2		<.001
3.2		<.001

One half of non-depressed patients were rated positively on H13, but clear-cut symptoms (H13.2) were present in twice as many depressed as non-depressed patients. Of the 95 depressed patients rated above H13.0, GMS data [Table 20] suggest that the majority may be accounted for by symptoms of loss of energy. Headaches, reported by a probable 35% of the depressed patients according to H13, were subsumed by loss of energy overall; less than half of these patients could have been complaining of headaches [Table 21]. Patients appeared to have been in no doubt as to whether or not they had been having headaches, but whether or not a headache met the description of a tension headache was less certain. As 58% of depressed patients reported that the feeling of loss of energy lifted when engaged in pleasant activities (gms76.1), this further supports loss of energy as related to depression; unfortunately, this question seems to have proved difficult for patients, as 13% were unable to either decide or remember if engaging in pleasant activities resulted in lifting of depression. The subjective feeling of loss of energy and/or listlessness (gms72.1), however, seemed more clear-cut to patients.

H13 is not useful because of the multiple symptoms assessed; relevant information might have been obtained if this item were split into one item assessing loss of energy and another assessing the remaining somatic symptoms.

Table 20: GMS items: loss of energy

GMS question	% of depressed
gms71.1 subjectively slowed in movements	71
gms71.1 severe/frequent/persistent subjective slowing in movements (5 respondents uncertain)	5
gms72.1 listlessness or subjective restriction of energy	85
gms72.1 severe/frequent/persistent listlessness or subjective restriction of energy (6 respondents uncertain)	28
gms72.2 present most days >2/52	78
gms72.2 severe/frequent/persistent most days >2/52 (6 respondents uncertain)	22
gms73.1 doing less than usual	56
gms73.1 persistently doing less than usual (4 respondents uncertain)	10
gms74.1 slowing/loss of energy/reduced activity started/became worse in last 3/12 (5 respondents uncertain)	72
gms75.3 slowness is present most days >2/52	76
gms75.3 severe/frequent/persistent slowness most days >2/52 (6 respondents uncertain)	6
gms76.1 does not lift with usually pleasant activities	18
gms76.1 lifts when engaged in pleasant activities (15 respondents uncertain)	54
gms77.1 sits/lies around because of lack of energy	60
gms77.1 severe/frequent/persistent sitting/lying around because of lack of energy (6 respondents uncertain)	9

Table 21: GMS items: tension

GMS question	% of depressed
gms48.1 gets worn out/exhausted during daytime/evening	71
gms48.1 gets severely/persistently worn out/exhausted (2 patients uncertain)	17
gms49.1 difficulty in relaxing	55
gms49.1 severe/persistent/frequent difficulty in relaxing (2 patients uncertain)	4
gms50.1 describes headaches	35
gms50.1 describes frequent/severe/persistent headaches	7
gms50.2 describes tension headaches (bands round the head, 'pressure,' 'tension in the back of the neck' or 'tightness')	16
gms50.2 describes severe/frequent/persistent tension headaches (5 patients uncertain)	4

Oxman et al (1990) found that feeling 'slowed down and/or low in energy' was reported by 79% of elderly primary care patients with minor depressive disorder, but also by 79.7% of those not depressed; 68.4% of depressed patients, compared with

48.7% of those not depressed, reported 'everything is an effort.' It was suggested that the high proportion reporting loss of energy could be a true age effect and '*consistent with the rate for patients consulting a physician for medical illness,*' but as their results considered only the presence or absence of a symptom, and not the degree of severity or persistence, this may account for the significant difference seen in results for the hospitalised patients in the present study. In addition, there is likely to be a qualitative difference between feeling 'slowed down' and feeling 'low in energy.' Ravindran et al (1994) found that energy loss discriminated between depressed and recovered patients, while feeling subjectively slowed did not. Downes et al (1988) noted that 27% of their sample of elderly people in the community reported listlessness or subjective restriction of energy, and 37% felt subjectively slowed down, and both of these contributed significantly to a scale comprising clinically significant somatic symptoms. There are possibly important differences among loss of energy, or anergia, where there is no energy even when doing nothing; fatigue (tiredness resulting from activity), lethargy (mental torpor), weakness, feelings of incapacity, and lassitude (disinclination to exert oneself).

The correlations with M1, M2, M8 and H10 should help to demonstrate whether loss of energy is motivational or physical, and whether it is related to tension and anxiety separately from depression. Loss of energy, reduction in activity level and difficulty starting activities do appear to discriminate depressed from non-depressed elderly patients, even in the presence of physical illness.

Nurses and physiotherapists particularly comment upon patients who are 'lethargic or reluctant to mobilise,' and as a screening question for depression in geriatric in-patients this observation has been found to be 70% sensitive and 73% specific, with a negative predictive value of 86% (Hammond et al 2000).

Retardation

Psychomotor retardation is assessed by H8 [Table 22], an observational item relying on the interviewer to determine slowness, including slowness of thought. H8 makes no provision (and in fact nowhere in the HAMD is there provision) to score the patients' own perceptions of their cognitive functioning or subjective feelings of slowness.

Table 22: HAMD item 8: retardation Slowness of thought and speech, impaired ability to concentrate, decreased motor activity

		number of patients	
		depressed	not depressed
8.0	normal speech and thought	22	77
8.1	slight retardation at interview	43	22
8.2	obvious retardation at interview	32	1
8.3	interview difficult	3	0
8.4	complete stupor	0	0

Observed difference between proportions of patients scored '0': 0.550, SE diff 0.059, 99% CI 0.398 to 0.702

Chi squared 68.923 df 3, p < 0.001

partition	chi square	probability
2.2	30.291	<.001
3.2	36.124	<.001
4.2	3.046	NS

Approximately one quarter of depressed patients were not retarded, but whether this represents an absence of retardation, or a combination of agitation and retardation, or agitated patients without retardation, is not ascertainable. The confidence interval suggests that any observable retardation may be associated with depression.

GMS data [Table 23] recorded that about one third of depressed patients were observed to be very retarded, and that nearly half complained of slow thinking, suggesting that the subjective feeling of slow thinking is not necessarily observable. This has also been noted in younger psychiatric patients (Colbert and Harrow 1968).

Table 23: GMS items: retardation

GMS question	% of depressed
gms78.1 observed very slow in movements	34
gms78.1 observed severely slow in movements	2
gms62.1 subjective slowing in thinking recently	48
gms62.1 severe/frequent/persistent subjective slowing in thinking (6 respondents unsure)	1

Concentration

Self-reported difficulty in concentrating is assessed by M6 [Table 24]. In addition, H8 includes observed impaired ability to concentrate. GMS items assess concentration [Table 25] and related cognitive complaints [Table 26]. Indecision is included in H7 [Table 9].

Table 24: MADRS item 6: concentration difficulties

Representing difficulties in collecting one's thoughts mounting to incapacitating lack of concentration.

		number of patients	
		depressed	not depressed
M6.0	no difficulties in concentrating	33	62
M6.1		7	8
M6.2	occasional difficulties in collecting one's thoughts	15	21
M6.3		18	8
M6.4	difficulties in concentrating and sustaining thought which reduces ability to read or hold a conversation	27	1
M6.5		0	0
M6.6	unable to read or converse without great difficulty	0	0

Observed difference in proportions of patients scored '0': 0.29, SE diff 0.0676, 99% CI 0.12 to 0.46.

Chi squared 39.91 df 4, p < 0.001

partition	chi square	probability
2.2	0.737	NS
3.2	0.305	NS
4.2	8.793	<.01
5.2	27.074	<.001

Although similar numbers of patients in both groups complained of occasional difficulties in collecting their thoughts, M6 discriminates very well between groups at the level at which difficulty in concentration interferes with reading or holding a conversation.

GMS data [Table 25] confirm that around one-third of depressed patients experienced persistent difficulty in concentrating, although only 7% were observed during interview to have difficulty maintaining concentration. (This 7% may be the same group in whom there was obvious retardation [H8.2, H8.3].) Complaints of difficulty concentrating which are more than occasional appear important in discriminating between depressed and non-depressed patients, and this is not necessarily observable.

Table 25: GMS items: concentration

GMS questions	% of depressed
gms117.1 difficulty concentrating on TV	29
gms117.1 severe/persistent difficulty concentrating on TV (1 patient uncertain)	2
gms118.1 difficulty concentrating on reading	29
gms118.1 severe difficulty concentrating on reading (3 patients uncertain)	1
gms118.2 difficulty concentrating most days >2/52 in last month (4 patients uncertain)	29
gms119.1 observed difficulty in concentrating	7
gms62.1 subjectively slowed down in thinking recently	48
gms62.1 severely slowed down in thinking recently (6 patients uncertain)	1
gms63.1 feels muddled (6 patients uncertain)	28

Nearly one half of depressed patients felt slowed down in their thinking recently; there may therefore be a strong positive correlation between M6 and H8, which includes assessment of retarded thought. Alternatively, M6 may show a positive association with lassitude (M7), or anhedonia (M8), which would suggest lack of motivation. According to GMS data [table 26], one third of patients reported relatively recent difficulty with memory, which suggests this may be related to the onset of depression and might also be associated with loss of concentration.

Silverstone (1990b) suggested that, in younger medical patients, loss of concentration was likely to be associated with physical illness rather than depression. Berkman et al (1986) noted that trouble with concentration was one of the few depression symptoms on the CES-D scale (as well as feeling life was a failure and feeling lonely) which was significantly associated with age when the contribution of functional disability was controlled in the analysis. In elderly primary care patients, 42.1% of depressed and 34.3% of non-depressed reported trouble concentrating (Oxman et al 1990) (as did 38% of this study's sample of non-depressed patients), but it may be only at a severe degree that difficulty with concentration becomes discriminatory.

My colleagues and I found that depressed elderly physically ill patients who were classified as having responded after antidepressant or placebo treatment showed significant improvement on their Mini Mental State Examination scores after 8 weeks compared with patients who remained depressed (Hammond et al 1997⁸). This measured improvement in cognitive function may have been related to improved ability to concentrate.

Table 26: GMS items: cognitive complaints

<u>GMS question</u>	<u>% of depressed</u>
gms64.1 feels indecisive	25
severe	1
(6 patients uncertain)	
gms65.2 observed to be indecisive	7
gms64.2 felt indecisive/muddled most days > 2/52 in last month	37
severe/frequent/persistent	1
(4 patients uncertain)	
gms65.1 observed to be muddled	3
gms36.1 has to make more effort to remember things than previously	47
(3 patients uncertain)	
last 1-2 years	31
last 3-4 years	3
last 5-10 years	6
> 10 years	1
(4 patients uncertain)	
gms34.1 difficulty with memory that represents a problem	40
gms34.1 difficulty with memory that represents a severe problem	3
(2 patients uncertain)	
gms40 observable problem with memory	19

H7.2 [Table 9] enquires about feelings of indecisiveness. It is possible that twice as many depressed as non-depressed patients (21 compared with 12) experienced feeling indecisive. Gms64.1 supports H7.2, with a quarter of patients reporting feeling indecisive. A further 12% appear to complain of feeling muddled (gms62.2). Ravindran et al (1994) found that feeling muddled and feeling indecisive both discriminated depressed from recovered patients. If cognitive changes are particularly strongly associated with depression in elderly people, and as loss of concentration has been found to discriminate between depressed and non-depressed medical in-patients, the inclusion of more cognitive items, particularly subjective items, might be recommended in a screening scale.

⁸ See appendix

Anxiety

Symptoms of anxiety assessed by the scales include tension, irritability, worrying, edginess, apprehension, fear, and panic; and somatic symptoms of anxiety such as headaches, palpitations and tremulousness.

M3 [Table27] describes inner tension, from mild to severe.

Table 27: MADRS item 3: inner tension

Representing feelings of ill-defined discomfort, edginess, inner turmoil, mental tension mounting to either panic, dread or anguish. Rate according to intensity, frequency, duration and the extent of reassurance called for.

		number of patients	
		depressed	not depressed
M3.0	placid, only fleeting inner tension	15	60
M3.1		6	9
M3.2	occasional feelings of edginess and ill defined discomfort	38	28
M3.3		32	3
M3.4	continuous feelings of inner tension or intermittent panic which the patient can only master with some difficulty	8	0
M3.5		1	0
M3.6	unrelenting dread or anguish, overwhelming panic	0	0

Observed difference between proportions of patients scored '0': 0.46, SE diff 0.060, 99% CI 0.30 to 0.62

Chi squared 63.74 df 5, p < 0.01

partition	chi square	probability
2.2	2.217	NS
3.2	18.68	<.001
4.2	33.316	<.001
5.2	8.506	<.01
6.2	1.015	NS

M3 discriminates well between groups. Sixty percent of non-depressed patients are shown to have no complaints of inner tension, and minor levels of edginess occur among approximately one third. The greatest discrimination appears when feelings of tension become more than just occasional; as in the affect items, pervasiveness is important.

H10 [Table 28] covers five symptoms of anxiety, both self-reported and observed, including tension.

Table 28: HAMD item 10: psychic anxiety

		number of patients	
		depressed	not depressed
H10.0	no difficulty	9	60
H10.1	subjective tension and irritability	24	16
H10.2	worrying about minor matters	29	19
H10.3	apprehensive attitude apparent in face or speech	28	4
H10.4	fears expressed without questioning	10	1

Observed difference between proportions of patients scored '0': 0.51, SE diff 0.0567, 99% CI 0.36 to 0.66

Chi squared 66.74, df 4, $p < 0.001$

partition	chi square	probability
2.2	22.332	<.001
3.2	12.11	<.001
4.2	24.508	<.001
5.2	7.792	<.01

H10 discriminates between depressed and non-depressed patients at all levels, although reported subjective tension and irritability, and worrying about minor matters, were not uncommon among the non-depressed group with over one-third reporting these symptoms. The largest differences appear where the patient was observed to be apprehensive, or spontaneously expressed fears.

GMS observational questions 33.1 and 33.2 (dysphoria) recorded 49% of depressed patients to be tense or worried, which is 11% more than the depressed and 45% more than the non-depressed patients rated on H10.3 and H10.4. Observed tension or worry therefore appears to discriminate especially well between groups. A nurse-rated item concerning agitation, anxiety or restlessness was found to be 70% sensitive and 73% specific in identifying depressed geriatric patients, and the inter-rater agreement was 83% (Kappa 0.66) (Hammond et al 2000).

In H10.1, 24% of depressed and 16% of non-depressed patients were rated as more irritable or subjectively tense. It appears from the GMS data [Table 29] that patients had little difficulty recognising irritability and/or anger in themselves. The prevalence of irritability among depressed patients is apparently higher than measured by H10, where irritability became subsumed by more severe symptoms of anxiety, although patients rated H10.2 and above were probably not all irritable. In non-depressed patients, this could mean a possible 40% with irritability, suggesting that

irritability on its own may be common and may not discriminate. Irritability may be an entirely separate symptom, not in fact associated with anxiety.

Table 29: GMS items: irritability

<u>GMS question</u>	<u>% of depressed</u>
gms105.1 admits to irritability (anger)	47
gms105.1 severe/frequent/persistent irritability/anger	5
gms105.2 irritable for most days > 2/52 in last month	40
gms105.2 severe/frequent/persistent irritability/anger most days >2/52 in last month (4 respondents uncertain)	3

Anecdotally, nurses have associated irritability with depression in elderly patients (Proffitt et al 1996), but the observation of irritability in patients may be unreliable (Kappa = 0.15) (perhaps due to nurse-patient interaction), although this item also included demanding behaviour which may have confounded the result (Hammond et al 2000).

Complaints of feeling exhausted, included in the GMS as a symptom of tension [Table 21], were reported by over 70% of the respondents, similar to the proportion noted to complain of clear-cut general somatic symptoms on H13. Patients seemed to have had little difficulty in deciding whether or not they felt exhausted. Examination of the correlation matrix will show if this symptom is associated with anxiety (as measured by H10 and M3), or with retardation and lassitude, or depressed mood and/or anhedonia.

H10.2 specifies 'worries a lot'; increased severity would be marked as 10.3 or 10.4. Worrying, differentiated from free-floating subjective fear or anxiety, focuses on specific issues and is assessed by GMS items [Table 30].

Table 30: GMS items: worry

GMS question	% of depressed
gms12 mentions worries	83
gms14.1 worries a lot (5 responses were uninterpretable)	48
gms14.2 'a worrier'/worries about everything (3 patients uncertain)	27
gms15.1 worrying unpleasant/ couldn't be stopped (5 patients uncertain)	52
gms16.1 worries re: own health	49
gms16.2 others' health	16
gms16.3 finances	10
gms16.4 family problems	23

According to H10, if all patients at H10.2 and above were worrying about minor matters, only 19% of depressed patients would not have complained of worrying. However, the actual percentage of patients *not* complaining of worrying is around 50%, according to the GMS data. Unpleasant persistent worrying (gms15.1) was probably at least twice as common in depressed as non-depressed patients. As all worried depressed patients appear to be worried about their own health, this item may correlate with hypochondriasis, HAMD item 13.

Oxman et al (1990) noted that 84.2% of elderly primary care patients with minor depressive disorder and 63.9% of the non-depressed complained of 'worrying too much'. In a community sample of elderly people, Downes et al (1988) noted 'admits to worrying' in half and 'worries a lot' endorsed in over a quarter of respondents. In elderly psychiatric patients, however, this GMS item (14.1) was noted to discriminate well between depressed and recovered patients (Ravindran et al 1994). Worrying may not necessarily be considered to be a negative state by these elderly people, but a trait.

Fear and anxiety

GMS items [Table 31] address anxiety as covered by H10 and M3.

Table 31: GMS items: fear and anxiety

GMS question	% of depressed
Gms19.1 subjective fear or anxiety out of proportion to the event, if any, that provoked the feeling	48
Gms19.1 severe/frequent subjective fear or anxiety out of proportion to the event, if any, that provoked the feeling (5 patients uncertain)	6
Gms20.1 episode of anxiety which the subject tries to terminate e.g. by running out of the room (2 patients uncertain)	8
Gms33.4 severe apprehension/fearfulness	3

GMS19.1 appears to fall around M3.3, where there is the largest difference in the Chi square partitioning. Almost one half of the depressed patients experienced excessive subjective fear or anxiety, which may be more than ten times greater than the non-depressed. Inner tension (which need not be continuous) as rated in M3, also appears to be an important discriminator. Severe fear and/or anxiety and/or panic attacks appear to occur in around six to 9% of depressed patients and in none of the non-depressed, and spontaneously reported fears are ten times more common among the depressed.

Somatic symptoms of anxiety

H11 [Table 32] enquires exclusively about patients' experiences of somatic symptoms which may be attributable to anxiety. Symptoms of somatic anxiety were equally common in both groups, except at the severe level, where the only significant difference appears. The confidence interval also shows that this item in its present form does not discriminate between groups.

Table 32: HAMD item 11: somatic anxiety

Physiological concomitants of anxiety, such as gastrointestinal (dry mouth, wind, indigestion, diarrhoea, cramps, belching; respiratory (hyperventilation, sighing); urinary frequency; sweating.

		number of patients	
		depressed	not depressed
H11.0	absent	35	47
H11.1	mild	17	23
H11.2	moderate	37	30
H11.3	severe	11	0
H11.4	incapacitating	0	0

Observed difference between proportions of patients scored '0': 0.12, SE diff 0.069
99% CI -0.058 to 0.298

Chi squared 14.387 df 3, p <0.01

partition	chi square	probability
2.2	0.0	NS
3.2	2.747	NS
4.2	11.64	<.001

The GMS data [Table 33] records that palpitations and feelings of tremulousness were experienced to a mild or moderate degree by around one third of depressed patients. Although five percent of depressed patients experienced severe or frequent palpitations, the same number again were experiencing other unspecified severe symptoms of anxiety (e.g. hyperventilation). These may therefore be symptoms of illness; or possibly iatrogenic, as bronchodilators were commonly prescribed and associated side effects include tremor, tension, tachycardia, and palpitations (Mehta 1997). There should be a strong correlation between H11, H10 and M3 if somatic symptoms were actually symptoms of anxiety.

Table 33: GMS items: somatic anxiety

GMS question	% of depressed
Gms61.1 palpitations (patient is conscious of heartbeat which is not due to exercise but usually accompanied by anxiety)	32
Gms61.1 severe/frequent/persistent palpitations (2 patients uncertain)	5
gms61.2 trembling/tremulous feeling due to anxiety (2 patients uncertain)	28
gms61.3 other bodily features of anxiety (2 patients uncertain)	23

Summary

Although significantly more depressed than non-depressed patients experienced some symptoms of anxiety, it is unclear whether these are symptoms of depression or of concomitant anxiety disorders. Having a major depressive disorder is associated with a greatly increased risk of panic disorder or agoraphobia (Regier et al 1984) and there is no doubt that there is some overlap of symptoms in both disorders. These symptoms do appear helpful in discriminating depressed from non-depressed patients.

Hypochondriasis

Hypochondriasis, assessed by H15 [Table 34], appears to discriminate well between groups, especially at the level of preoccupation with health (H15.2). Only 11% of non-depressed patients were rated positively on H15, suggesting that this is not necessarily a symptom of age, illness and/or hospitalisation. Data from GMS14.1 (worries a lot) and gms16.1 (worries about own health) appear to agree with numbers of depressed patients rated in H15.

Table 34: HAMD item 13: hypochondriasis

		number of patients	
		depressed	not depressed
H15.0	not present	37	89
H15.1	self-absorption (bodily)	15	9
H15.2	preoccupation with health	34	2
H15.3	frequent complaints, requests for help	14	0
H15.4	hypochondriacal delusions	0	0

Observed difference between proportions of patients scored '0': 0.52, 99% CI 0.37 to 0.67

Chi squared 65.4 df 3, $p < 0.001$

partition	chi square	probability
2.2	8.854	<.01
3.2	41.497	<.001
4.2	15.054	<.001

There is little evidence from GMS responses of the depressed patients [Table 35] of actual hypochondriasis, '*...in which the individual experiences and manifests a degree of concern over his state of health, which is out of proportion to the amount considered appropriate to the degree of objective evidence for the presence of disease.*' (Pilowsky 1978) Nearly two-thirds of this group of depressed patients

reported that physical problems were causing worry, which is more than the number of patients who said that they were worried about their health. Worrying about physical health might be considered a reasonable reaction considering the hospital setting. However, a substantial minority was not preoccupied by health; and in the non-depressed group, despite the fact that they also were in-patients, preoccupation with health problems was noticeably absent, and very few seemed absorbed with bodily complaints. This finding may be associated with the lower prevalence of anxiety among the non-depressed. Additionally, the depressed patients may have had more worrying or perhaps more painful health problems. A comparison of analgesic prescription rates may not necessarily help to clarify, and correlations may show hypochondriasis to be associated with somatic complaints, affect, or anxiety.

Table 35: GMS items: hypochondriasis

<u>GMS item</u>	<u>% of depressed</u>
gms41.1 has physical problems causing upset or worry	63
gms41.1 physical problems causing severe upset or worry	13
gms43.2 undue preoccupation with physical symptoms (2 uninterpretable)	5
gms42.1 complains doctor not helpful	10
gms42.1 complains strongly that doctors are not helpful (1 patient uncertain)	1
gms42.2 complains treatment has effected no improvement (1 patient uncertain)	15
gms43.1 has been to more than three doctors for the same complaint	0
gms43.2 severe preoccupation with physical symptoms (2 patients unratable)	1
gms44.1 hypochondriacal delusion	1

Only one patient was considered to have a hypochondriacal delusion. Many patients experienced worry concerning their health, but in most cases this seemed either appropriate or not excessive. Some of the literature suggests that elderly depressed people are more likely than younger people to experience hypochondriasis (Gelder et al 1994, Gurland 1976). Alarcon (1964), in a study of 152 psychiatric in-patients aged at least 60 years, noted that hypochondriacal symptoms were present in over 60%, were the presenting symptoms in nearly one-quarter, and that these patients were at significantly greater risk of suicide. In the majority there was no previous history of hypochondriacal personality traits. Hypochondriacal delusions are symptoms of severe disorder.

Costa and McCrae (1985), defining hypochondriasis as the '*discrepancy between subjective and objective health*,' suggest that, in general, exaggerated health complaints are long-term personality traits, and any apparent increase hypochondriasis in elderly people results from an increase in actual physical illness, or is pathological. In a study of data from 321 community-living elderly people, Downes et al (1988) found the prevalence of people worried about their health to be 16.51%, and the percent of people unduly preoccupied by physical complaints to be 1.25%. The depressed medically ill sample in the present study exhibited approximately four times these levels of symptoms [Table 35], but in the non-depressed only 2% seemed preoccupied by their health [Table 34]. These differences could be due to more severe, painful or disabling physical illness in the depressed group; and, without a valid quantification of physical illness, it is not possible to draw conclusions regarding the aetiology of the symptom. However, it is clear from this sample that an apparently inappropriate preoccupation with physical complaints, regardless of source, discriminates depressed from non-depressed patients.

Appetite

MADRS item 5 [Table 36] and HAMD item 12 [Table 37] assess loss of appetite; H16 [Table 39] enquires about actual weight loss. Loss of appetite was determined to be present if the patient expressed no interest in eating, could think of nothing that they would like to eat, or stated that they forced themselves to eat as they knew they must, although they had no real desire to do so.

M5 discriminates between depressed and non-depressed patients when appetite loss is more than slight, or when patients complain of no appetite; twice as many depressed compared with non-depressed patients complained of more than a slight loss of appetite.

Table 36: MADRS item 5: reduced appetite

Representing the feeling of loss of appetite compared with when well. Rate by desire for food or the need to force oneself to eat

		number of patients	
		<u>depressed</u>	<u>not depressed</u>
M5.0	normal or increased appetite	18	44
M5.1		5	10
M5.2	slightly reduced appetite	17	22
M5.3		26	13
M5.4	no appetite; food is tasteless	27	7
M5.5		6	4
M5.6	needs persuasion to eat at all	1	0

Observed difference between proportions of patients scored '0': 0.26, SE diff 0.0628, 99% CI 0.098 to 0.422

Chi squared 26.879 df 6, p <.001

<u>partition</u>	<u>chi square</u>	<u>probability</u>
2.2	0.089	NS
3.2	1.949	NS
4.2	12.093	<.001
5.2	14.268	<.001
6.2	0.898	NS

Table 37: HAMD item 12: gastrointestinal symptoms

		number of patients	
		<u>depressed</u>	<u>not depressed</u>
H12.0	none	17	57
H12.1	loss of appetite but eating without staff encouragement; heavy feelings in abdomen	50	27
H12.2	difficulty eating without staff urging. Requests or requires laxatives or GI medicine	33	16

Observed difference between proportions of patients scored '0': 0.40, SE diff 0.0621, 99% CI 0.24 to 0.56

Chi squared 34.39 df 2, p < 0.001

<u>partition</u>	<u>chi square</u>	<u>probability</u>
2.2	26.578	<.001
3.2	7.812	<.01

H12 combines anorexia with use of laxatives and gastrointestinal medication (such as aluminium hydroxide); and differentiation is impossible. Over one-half of this sample was prescribed laxatives and/or GI medication. Comparison with M5 suggests that around one-fifth to one-quarter of positive scores for both depressed and non-depressed patients on H12 were actually accounted for by medications.

The hospital setting of the interviews complicated assessment of appetite as some people did not care for the hospital food, which is part of the difficulty in determining the importance of appetite as a depressive symptom in this population.

Table 38: GMS items: appetite

<u>GMS items</u>	<u>% of depressed</u>
gms51.2 increase in desire for food	2
gms51.1 decrease in desire for food severe (1 patient uncertain)	63 13
gms52.2 most days > 2/52 in last month (2 patients uncertain)	60
gms52.1 no nausea (no medical explanation) (3 patients unratable)	53

In the GMS data [Table 38], the percentage of depressed patients that declared a persistent decrease in appetite tends to confirm the excess due to medication seen in H12. Patients had no difficulty in assessing their appetites. A probable medical explanation for appetite loss was considered to be present in seven to 10% of the depressed patients. Although a figure is not available for the control group, it is reasonable to assume that the figure might be similar; therefore, loss of appetite that is more than slight appears to be associated with depression.

Weight loss

Comparison with a non-depressed group is not appropriate as the question specifies actual weight loss due to depression. This item combines judgment and objective measurement. If previous weights were not recorded in hospital records, then patients' self-report or judgment about clothes was used. Patients' opinions may have been inaccurate and influenced by depressed cognitive set. Concomitant illnesses were then considered in order to make a decision about the cause of any weight loss.

Table 39: HAMD item 16: weight loss

ACTUAL WEIGHT CHANGE (since last visit)		number of depressed patients
H16.0	no weight loss/weight loss NOT caused by present illness	46
H16.1	weight loss probably caused by present illness	48
H16.2	definite weight loss caused by present illness	6

Few patients were definitely considered to have lost weight due to depression alone, although in over half there may have been loss of weight due to depression. Remaining patients either had not lost weight or had an illness that was considered to be responsible for their loss of weight (e.g. carcinoma of the lung).

The GMS items related to weight change [Table 40] show that one-quarter of the depressed sample reported loss of at least 10 lb. at some time recently, with no judgment regarding aetiology. The differences between the GMS and the HAMD responses are probably because the GMS specifies the amount of weight lost: many patients were uncertain as to whether they had lost 10 lbs. or more. H16 also requires some subjective judgment to be made on the part of the clinician regarding the source of any weight loss. It seems that half the patients reporting weight loss in H16 lost less than 10 lbs.; but 10 lbs. is a substantial weight loss for a frail elderly person, and a smaller weight loss may be clinically significant.

Table 40: GMS items: weight change

GMS question	% of depressed
gms53.1 has lost 10 lb. or more	24
has lost 10 lb. or more in last month (23 patients uncertain)	4
gms53.3 weight gain of ten pounds or more in last month	0

Patients found estimating weight loss difficult; therefore, only measured weight loss should be used. There are, however, practical difficulties involved in measuring weight, and determining aetiology is problematic. If H16 correlates very well with another item (for example M5) it may be best to eliminate weight loss from a scale for use in this population.

If anorexia is associated with depression, then M5 should correlate with reported sadness and/or inability to feel. A psychobiological explanation for appetite

loss would predict a positive correlation between appetite and retardation; appetite loss might also correlate with anxiety symptoms.

In a sample of adult medical in-patients, appetite loss was found not to discriminate between depressed and non-depressed patients (Clark et al 1983). Koenig et al (1995) noted that 42% of his sample of 38 (8 of whom were diagnosed with major depression) had persistent loss of appetite; 52% were rated greater than '0' on the HAMD (a probable overestimate of at least 10% by the HAMD, according to the data in the current study). Koenig reported good inter-rater agreement concerning aetiology of loss of appetite. However, as loss of appetite was also reported by just under one-half of the non-depressed people, there were apparently numbers of patients whose appetite loss could have been accounted for by illness and/or hospitalisation, a proportion similar to that seen in the present study. The significant differences between depressed and non-depressed people are found when loss of appetite is complete and persistent, and a screening item that enquired at that level might therefore be sensitive and specific.

Insomnia

MADRS item 4 [Table 41] enquires about reduced sleep in general, compared with the patient's normal pattern. H4 [Table 42], H5 [Table 4] and H6 [Table 44] separately assess early, middle and late insomnia. Sleeplessness that did not represent a problem or difficulty for the patient was not scored as insomnia.

Many non-depressed patients complained of reduced sleep; however, significant differences between groups appear when sleep is broken by two hours or more. Although this item stipulates that sleep should be compared to the 'subject's normal pattern,' it also specifies 'less than 2 or 3 hours sleep' (M4.6), which, in the few cases noted in both groups, could be their normal sleep; this reduces the reliability of this item.

Table 41: MADRS item 4: reduced sleep

representing the experience of reduced duration or depth of sleep compared to the subject's own normal pattern when well.

		number of patients	
		depressed	not depressed
M4.0	sleeps as usual	10	36
M4.1		2	5
M4.2	slight difficulty dropping off to sleep or slightly reduced, light or fitful sleep	7	20
M4.3		13	11
M4.4	sleep reduced or broken by at least 2 hours	34	14
M4.5		29	8
M4.6	less than 2 or 3 hours sleep	5	6

Observed difference between proportions of patients scored '0': 0.26, SE difference 0.057, 99% CI 0.114 to 0.406

Chi squared 42.09 df 6, $p < 0.001$

partition	chi square	probability
2.2	0.077	NS
3.2	6.832	<.01
4.2	20.145	<.001
5.2	14.84	<.001
6.2	0.086	NS

Early insomnia

Table 42: HAMD item 4: early insomnia

		number of patients	
		depressed	not depressed
H4.0	no difficulty falling asleep	24	44
H4.1	occ. diff. falling asleep i.e. more than 1/2 hour	22	30
H4.2	nightly difficulty falling asleep	54	26

Observed difference between proportions of patients scored '0': 0.22, SE diff 0.0655, 99% CI 0.0311 to 0.369

Chi squared 16.913, df 2, $p < 0.001$

partition	chi square	probability
2.2	0.58	NS
3.2	16.333	<.001

Included under H4.2 are patients who took hypnotics nightly because of their conviction that they would not be able to get off to sleep without them. If patients were prescribed hypnotics but did not take them or felt that they could manage without them, they were not scored H4.2. It might be expected that most patients would have difficulty falling asleep if ill, uncomfortable, or in hospital, but early

insomnia was not universal, whether because of age, chronic illness, or depression. For some patients, their difficulty initiating sleep was extreme: one woman did not find it possible to sleep until four or five in the morning when at home.

Although not highly discriminating, significance did appear in this item when patients reported nightly difficulty getting to sleep. Early insomnia was reported by around two-thirds of non-depressed and three-quarters of depressed patients, but one-half of the depressed group experienced nightly difficulty getting to sleep, twice the number of non-depressed patients. A strong positive correlation with anxiety might be expected for early insomnia.

Middle insomnia

An attempt was made in the scoring of H5 to differentiate between restlessness due to discomfort of arthritis or dyspnoea, for example, and restlessness and waking accompanied by dysphoric mood, but many patients had difficulty making a distinction between waking for urination and primary restlessness.

Table 43: HAMD item 5: middle insomnia

		number of patients	
		depressed	not depressed
H5.0	no difficulty	22	42
H5.1	restless and disturbed during the night	46	41
H5.2	waking during the night, any getting out of bed rates '2' (except for purposes of voiding)	32	17

Observed difference between proportions of patients scored '0': 0.20, SE diff 0.644, 99% CI 0.0338 to 0.366

Chi squared 11.129 df 2, p < 0.01

partition	chi square	probability
2.2	5.047	<.05
3.2	6.082	<.02

Middle insomnia was the most common sleep complaint among the depressed patients, but approximately one half of non-depressed patients also reported restless and disturbed sleep. Less than a quarter of depressed patients reported no middle insomnia (a similar proportion to those who reported no difficulty in falling asleep), and around one third of depressed patients reported getting up and spending time awake during the night, twice the number of non-depressed patients. This item did not, however, discriminate very well between groups.

Late insomnia

Patients had some difficulty differentiating between early morning waking and middle insomnia. Early morning waking was rated as at least two hours before usual time, as in the GMS.

Table 44: HAMD item 6: late insomnia

		number of patients	
		depressed	not depressed
H6.0	no difficulty	30	46
H6.1	waking early but goes back to sleep	31	43
H6.2	unable to fall asleep again if gets out of bed	39	11

Observed difference between proportions of patients scored '0': 0.16, SE difference 0.0677, 99% CI -0.0147 to 0.335

Chi squared 20.994, df 2, p < 0.001

partition	chi square	probability
2.2	0.088	NS
3.2	20.907	<.001

Late insomnia was also experienced by half of the non-depressed patients; however, nearly four times as many depressed patients reported that they were unable to fall asleep again after early morning waking. Again, a third of depressed patients reported no early morning waking. Significance between groups appears at H6.2, with three times as many depressed patients reporting late insomnia, although early morning waking was reported by over half of the non-depressed.

GMS data [Table 45] suggest that persistent or severe sleep problems, recorded for one-quarter to one-third of depressed patients, may be accompanied by dysphoric mood. Although patients generally had no difficulty in deciding whether or

not they experienced sleep problems, determining the cause did present problems for many.

Table 45: GMS items: sleep

GMS question	% of depressed
gms54.1 trouble sleeping or recent change in pattern	84
gms54.2 trouble falling/staying asleep/uses medication/alcohol for sleep	78
gms54.2 severe/frequent/persistent trouble falling/staying asleep	26
gms54.2 insomnia most of the night and sleeps mainly during the daytime	3
gms54.4 marked insomnia most nights >2/52 in last month	62
gms54.4 severe/frequent/persistent insomnia in last month (2 patients uncertain)	18
gms54.5 marked excessive sleep for most nights >2/52 in the last month	3
gms55.1 difficulty falling asleep	63
gms56.1 sleep interrupted during the night, including waking up after initial catnap and not being able to sleep again for some lengthy time	73
gms56.1 severe middle insomnia	10
gms57.1 wakes 2 hours or more before normal time, cannot get back to sleep, most nights >2/52 in last month (3 patients uncertain)	39
gms58.1 difficulty due to altered moods or thoughts, or tension (lies awake with depressed or anxious feelings or thoughts) severe (10 patients uncertain)	47 10
gms58.2 waking due to physical factors (6 patients uncertain)	31

In a group of younger (mean age 57.1, SD = 17.2) medically ill patients, sleep disturbance as measured by the BDI did not discriminate well between low and high total scores (Clark et al 1983), but in the present study persistent late insomnia and persistent early insomnia appear to discriminate reasonably well between groups

Summary

These items confirm that sleep problems are common, although not universal, in elderly ill people; but also suggest that the persistence and pervasiveness when depression is present are important in discriminating between the depressed and non-depressed. The significance of insomnia may be better approached in screening by examining qualitative differences in sleep disturbance, not necessarily as in GMS item 58.1, which asks for a determination of causation, but to ascertain the presence or absence of associated dysphoric mood.

Agitation

HAMD item 9, which assessed agitation [Table 46], showed that mild fidgeting was apparent in around a third of both depressed and non-depressed patients. However, one quarter of depressed patients exhibited agitated behaviour, eight times more than that observed among the non-depressed.

Table 46: HAMD item 9: agitation

		number of patients	
		depressed	not depressed
9.0	none	39	68
9.1	fidgetiness	37	29
9.2	'playing with' hands, hair, etc.	19	3
9.3	moving about, can't sit still	5	0
9.4	hand wringing, hair pulling, nail biting, biting of lips	0	0

Observed difference in proportions of patients scored '0': 0.29, SE diff 0.0675, 99% CI 0.116 to 0.464

Chi squared 25.466 df 3, $p < 0.001$

partition	chi square	probability
2.2	6.28	<.02
3.2	14.057	<.001
4.2	5.128	<.05

Agitation greater than mere 'fidgeting' was rare among the non-depressed, and it is at this level that H9 discriminates. H9 may be expected to correlate with H10 and M3 as the behavioural manifestation of anxiety.

Guilt

Feelings related to guilt and pessimism (including self-reproach, regret, remorse, sinfulness, and inferiority) are assessed by MADRS item 9 [Table 47] and HAMD item 2 [Table 48]. These symptoms were relatively uncommon, even among the depressed patients, and absent at the more severe levels assessed. No patient experienced psychotic delusions.

Table 47: MADRS item 9: pessimistic thoughts

Representing thoughts of guilt, inferiority, self-reproach, sinfulness, remorse and ruin.

		number of patients	
		depressed	not depressed
M9.0	no pessimistic thoughts	59	87
M9.1		8	6
M9.2	fluctuating ideas of failure, self-reproach or self-depreciation	23	7
M9.3		8	0
M9.4	persistent self-accusations, or definite but still rational ideas of guilt or sin.		
	Increasingly pessimistic about the future	2	0
M9.5		0	0
M9.6		0	0

Observed difference between proportions of patients scored '0': 0.28, SE diff 0.0596, 99% CI 0.126 to 0.434

Chi squared 24.189 df 4, p <.001

partition	chi square	probability
2.2	1.431	NS
3.2	12.232	<.001
4.2	8.506	<.01
5.2	2.02	NS

Few non-depressed patients reported feelings of self-reproach or failure (M9.1, M9.2, H2.1); three times as many depressed patients were rated positively on these items. Guilt and rumination over past deeds were entirely absent among the non-depressed (M9.3, M9.4, H2.2).

Table 48: HAMD item 2: feelings of guilt

		number of patients	
		depressed	not depressed
H2.0	absent	69	90
H2.1	self-reproach, feels has let people down	15	10
H2.2	ideas of guilt or rumination over past errors or sinful deeds	16	0
H2.3	delusions of guilt; present illness is a punishment	0	0
H2.4	hears accusatory or denunciatory voices and/or experiences threatening hallucinations	0	0

Observed difference between proportions of patients scored '0': 0.21, SE diff 0.055, 99% CI 0.0678 to 0.352

Chi squared 19.774, df 2, p < .001

partition	chi square	probability
2.2	2.382	NS
3.2	17.391	<.001

Neither of these items discriminated very well between groups, although there were definite differences between groups at particular levels of enquiry. The variety of words used to describe the feelings makes it difficult to identify the source of the differences. Significant differences may relate to guilt, feelings of failure, self-reproach, rumination, or self-depreciation.

GMS items relating to feelings of guilt [Table 49] confirm that around 10% of depressed patients reported guilt feelings, and 13% reported feelings of regret, but only 5% experienced these feelings persistently. Half of the depressed patients reported that they lived only from day to day, but less than half felt pessimistic about the future [GMS items, suicidal feelings], despite their poor physical health, and relatively few (16%) reported hopelessness and despair. The 10 patients with obvious excessive guilt (gms104.1) may be those rated at M9.3 and M9.4. Feelings of failure and self-reproach, noted in M9.2, are more common and discriminate between groups.

Table 49: GMS items: guilt

<u>GMS question</u>	<u>% of depressed</u>
gms104.1 obvious excessive guilt (2 patients unratable)	10
gms104.1 persistent/severe/excessive guilt	1
gms104.2 mentions regrets	13
gms104.2 persistent/severe regrets (1 patient ambiguous)	1
gms104.3 feels guilt/regrets most days >2/52 in last month (1 patient unratable)	5
gms104.4 delusional guilt	0

Guilt in the physically ill depressed younger adult has been noted by some researchers to be unusual (Clark et al 1983, Moffic and Paykel 1975). Clark et al (1983) found, among their sample of medically ill depressed patients, that a sense of failure and feeling of being punished discriminated well between high and low levels of depression, whereas feelings of guilt did not. 'Feelings of guilt' did not discriminate between depressed and non-depressed medically ill patients. Oxman et al (1990), however, found a high percentage (79%) of their small sample of primary care patients with minor depression reported 'blaming self,' compared with 34.3% of those with no psychiatric disorder. Again, qualitative differences in definition may be responsible for this apparent discrepancy, and it may be important to specify persistence and pervasiveness.

Neither the HAMD nor MADRS has a pure question concerning feelings of failure or punishment; the lack of a single-symptom item affects the reliability of the assessments. M9 may rate milder symptoms than H2. Only M9 mentions feelings of failure, which may be an important discriminator. An additional six patients are rated on H2, which may be due to rumination.

Frequency of endorsement of MADRS items compared with younger depressed psychiatric patients

Davidson et al (1986) examined the validity of the MADRS in a sample (N = 44) of depressed psychiatric in-patients (mean age 42.9 years). The observed frequencies of ratings of 2 or above on the MADRS items, as recorded by two raters, were in three cases (apparent and reported sadness, and reduced appetite) similar to those seen in the elderly people in the present sample. These elderly ill patients scored more highly for lassitude; and lower for inner tension, reduced sleep, inability

to feel, and suicidal feelings; and substantially less (33% compared with 90 to 95%) for pessimism, and concentration difficulties (60% compared with 84 to 90%). These comparisons suggest that there are considerable differences in the profile of symptoms between these two populations, which will be further addressed in the factor analysis of the measurement scales.

Frequency of endorsement of items at levels of significant discrimination

For screening purposes, it appears that it is important to be specific concerning the degree of severity necessary before a sign or symptom can reliably discriminate depression. A comparison of the responses of depressed and non-depressed patients at the level of severity at which discrimination occurs, arranged according to the power of the item (as demonstrated by the Chi square analyses) to discriminate depressed from non-depressed patients, is shown in Table 50.

Table 50: percentage of patients recorded at the level of severity at which maximum discrimination occurs for the HAMD and MADRS items

<u>scale item</u>	<u>depressed</u>	<u>non-depressed</u>
M8.3 inability to feel	57	1
M1.3 reported sadness	68	10
M2.3 apparent sadness	91	12
H1.3 depressed mood	75	10
H3.2 suicide	42	2
M10.2 suicidal feelings	63	5
H7.3 work and interest	62	10
M7.3 lassitude	72	11
H13.2 general somatic	75	30
H8.2 retardation	35	1
M6.3 concentration	45	9
M3.3 inner tension	41	3
H10.3 psychic anxiety	38	5
H11.3 somatic anxiety	11	0
H9.2 agitation	24	3
H15.2 hypochondriasis	48	2
H2.2 guilt	16	0
M9.2 pessimism	33	7
M5.4 reduced appetite	34	11
H12.2 gastrointestinal	33	16
M4.5 reduced sleep	34	14
H4.2 early insomnia	54	26
H5.2 middle insomnia	32	17
H6.2 late insomnia	39	11

Some symptoms or signs were present at particular levels of severity in only around 10% or fewer of the non-depressed patients. Among these symptoms, at the level of maximum discrimination, there were five that were markedly more common among the depressed patients:

- Observed sadness which is relatively non-reactive
- Reported sadness which is relatively pervasive and non-reactive
- Anhedonia, the marked reduction in the ability to enjoy usual interests
- Lassitude, the marked difficulty in starting activities
- Having suicidal thoughts or wishing to be dead.

Some other symptoms and signs, while present in a smaller percentage of depressed patients, were so uncommon in the non-depressed that their presence should raise the suspicion of depressed. These were:

- Obvious retardation
- Obvious agitation
- Complaints of inner tension or observable apprehension and anxiety
- Preoccupation with health and physical symptoms
- Severe somatic anxiety
- Complaints of loss of concentration which affects the ability to read, hold a conversation or watch television
- Pessimism, rumination or guilt feelings, ideas of failure or self-reproach, absent in the non-depressed

The remaining symptoms were less useful as discriminating items:

- Clear-cut somatic symptoms, especially loss of energy, were twice as common among the depressed, although present in around one third of the non-depressed.
- The loss of more than two hours of sleep, or persistent and severe early middle or, particularly, late insomnia discriminated depressed patients.
- Complaints of having no appetite or that food was tasteless were three times as prevalent among the depressed patients, although noted in 11% of the non-depressed.

Summary

The usefulness of some particular signs and symptoms in discriminating between depressed and non-depressed patients is clear. Other items are less useful, either because of ambiguities within the scale items which have been used to assess them, or because severity is an important discriminator; or because they are also commonly present in the non-depressed, or present only rarely among the depressed.

Some of the observed differences between depressed and non-depressed groups may be due to the presence of greater illness severity, greater functional disability, or more painful disorders in the depressed group. The depressed group was rated as having more chronic and acute disorders, as well as taking more prescription drugs. A statistical comparison might demonstrate significant differences between groups, but without an adequate data assessing qualitative differences between, for example, hypertension and chronic obstructive airways disease, or non-opiate analgesics and diuretics, any observed differences might be spurious. However, the question addressed here is not whether there are other differences between group than depression, but which signs and symptoms are nevertheless associated with depression.

Comments and suggestions for further research are addressed below.

Anhedonia

Anhedonia may be observed as withdrawal from the environment and lack of engagement with the people within it. Anhedonia discriminated well between groups, but it may be important to differentiate between interest in people and interest in surroundings; and between getting pleasure from, and having interest in, people and/or activities. Actually spending less time in activities may be a sign of depression, or it may be the result of purely physical constraints. The scale items concerning loss of interest in surroundings were non-specific, and it should be determined what loss of interest actually includes.

Dysphoria

Feeling sad or low, but able to cheer up without difficulty did not discriminate. Persistence, pervasiveness and non-reactivity were important. A depressed appearance that was relatively non-reactive, whether or not the patient reported a depressed mood, was also discriminating

Suicidal feelings and wishing to be dead

This subject bears further investigation with a wide range of elderly people, perhaps using paired-comparison techniques, and the elicitation of comments concerning feelings about the desire to live. The subtle differences between, for example, feeling weary of life, feeling one would be better off dead, feeling life isn't worth living, and wishing to be dead, could be examined.

Anergia and lassitude

Clear-cut general somatic symptoms as assessed by HAMD item 13 discriminated between depressed and non-depressed groups. However, due to the inclusion of several symptoms within this item, it should be confirmed through further data whether loss of energy is the discriminating symptom. Lassitude (the disinclination to make any effort) also discriminated between groups. It should be clarified whether these two items refer to mental or physical effort.

Retardation

Obvious retardation discriminated well between groups, and was virtually absent among the non-depressed. Questions concerning psychomotor retardation should be included in screening and include both observation and subjective perception of slowing in thought and action by the patient.

Concentration

Difficulty with concentration beyond occasional problems in collecting ones' thoughts was also a rare complaint among the non-depressed. Indecisiveness may also be indicative of depression.

Anxiety

More than occasional worry or anxiety discriminated well, as did observable apprehension and agitation. These signs and symptoms should be included in screening for depression.

Hypochondriasis

Although discriminating at levels of preoccupation with somatic symptoms, it's difficult to phrase a question appropriately for people with multiple and serious

physical illnesses. One possibility would be an observational item concerning the patient's level of preoccupation with somatic symptoms.

Appetite

Loss of appetite only discriminated between groups when severe. Screening questions would, therefore, need to specify the degree of severity:

Insomnia

Persistence and severity influence the discriminatory power of insomnia items, and screening items assessing sleep should ask about these. The qualitative differences in sleep disturbance as experienced by a range of elderly people could also be further examined.

Whether or not a sign or symptom discriminates depressed patients from non-depressed and can be useful in a screening tool is not necessarily influenced by the inclusion of that sign or symptom within the construct of depression. A degree of association would, however, be expected, and is examined in the following section.

Results (III): The correlations of symptoms and signs of depression

The correlation matrix, constructed by SPSS using Pearson's correlation coefficient (a measure of linear association between variables, the absolute value of which indicates the strength of the relationship), of the responses to all 27 items from the MADRS and HAMD scales [Table 51] from the depressed patients was examined for patterns of association. Correlations between items for the non-depressed patients [Table 52] were also calculated and are discussed, although the variability in response was minor and conclusions are tentative at best and offered as illustration. Pairs of variables were also plotted graphically to reveal possible non-monotonic relationships between variables, but none was noted.

For ease of comparison, Table 53 shows the correlations between variables that were at least moderately strong (.40 or greater) along with their equivalents in the comparator group; columns or rows for which none of the correlations was at least moderate have been deleted. Because the items in the scales are intended to measure a pathological state, there is a floor effect in the non-depressed group for many of the items, and this lack of variability limits the usefulness of the comparison.

However, for some items, the correlations for both groups are similar. H8, measuring observed retardation, correlates strongly for both groups with apparent sadness, representing a reduction in reactivity common to both signs. M7, assessing reported lassitude, also correlates strongly for both groups with H7 (work and interests), as lassitude is incorporated within the 'work and interests' question. H12 and M5 (both assessing reduced appetite) also show similar strong correlations.

There are also similarities among the more moderate correlations, and these are more interesting. For examples, H7 (work and interests) correlates with reduced appetite in both groups, suggesting that loss of interest in this population of elderly ill people may also include loss of interest in food. Reported inner tension (M3) correlates moderately with agitation (H9) for both depressed and non-depressed patients. Agitation, which is observable (and was present to a mild degree in less than a third of the non-depressed), was associated to some extent with subjective feelings of edginess and discomfort. The correlation suggests, however, that there is a considerable degree of independence between these two symptoms.

The overall pattern among the anxiety items, however, demonstrates distinct

differences between the groups. With the exception of H9 and M3 already noted, the correlations are mainly stronger among the depressed group. Psychic anxiety (H10) and somatic anxiety (H11) both correlate strongly with agitation among the depressed, but very weakly for the non-depressed. Hypochondriasis (H15), not present at all in 89% of the non-depressed, correlates moderately with somatic anxiety; and among the depressed patients this correlation is still weaker (only .31). This indicates that among both depressed and non-depressed, symptoms of somatic anxiety are associated with preoccupation with awareness of bodily symptoms, but also that there are other factors (possibly related to physical illness) that are involved in hypochondriasis.

Among the sleep items (H4, H5, H6 and M5) (which are unassociated in either group with any other signs or symptoms measured by the scale items), it is notable that the correlations between each sleep item with other sleep items are stronger in the non-depressed than in the depressed group. This may be partly explained by the greater endorsement of moderately severe sleep difficulties among the depressed; and also by the contribution of other possibly unmeasured factors associated with depression that contribute to their insomnia.

There is a conspicuous absence of correlation of both inner tension (M3) and reduced sleep (M4) with apparent sadness (M1), depressed mood (H1) among the depressed group, although there is a moderate correlation of both in the non-depressed. Ninety percent of the non-depressed had only mild signs of sadness, which must be taken into account, but this points to the independence of sleep and anxiety from observable depressed mood in people in whom the syndrome of depression is diagnosed.

These correlations suggest the presence of a syndrome of anxiety among the depressed that is not present in the non-depressed, relating to the co-morbidity of anxiety and depression.

The correlation of pessimism with apparent and reported sadness in the non-depressed group is moderate, but minimal among the depressed group. Pessimism, as assessed by M9, included feelings of guilt, remorse and sinfulness, and was rare among the depressed with any degree of severity.

Loss of interest correlates weakly with reported sadness and depressed mood in the depressed, but moderately in the non-depressed. However, the opposite pattern

is seen in the correlations with general somatic symptoms, concentration loss, work and interests, and retardation. These items are all associated in the depressed, much less so in the non-depressed.

If any conclusions can be drawn from these comparisons of correlations (and caution must be exercised due to the floor effects in the non-depressed), they are that many symptoms and signs of depression can be present to a mild degree in the non-depressed, representing a generalised state of 'unwellness', but this is unlike the pattern of associations among the depressed, which is particular in its discrete separation of anxiety, sleep, dysphoric and anhedonic symptoms and signs.

Table 52: correlation matrix for all HAMD and MADRS items, non-depressed group

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H15	H16	H17	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
H2	.24																									
H3	.35	.24															.69									
H4	.19	-0.05	.00														.43									
H5	.19	.02	.07	.62													.34									
H6	.26	.08	.12	.56	.70												.27									
H7	.14	.05	.12	.27	.20	.13											.07									
H8	.32	-0.03	.06	.12	.12	.11	.09										.43									
H9	.10	.28	-0.06	.05	.02	.06	-0.14	.15									.18	.15								
H10	.21	-0.07	-0.06	.17	.04	.01	.18	.28	.16								-0.02	.14								
H11	.23	.008	-0.02	.21	.09	.19	-0.02	.22	.14	.32							.20	.14								
H12	.03	-0.04	.07	.27	.26	.11	.24	.08	-0.14	.05	.12						.43	.08								
H13	.07	-0.05	.00	.17	.03	.07	.43	.08	-0.09	.19	.27	.34					.06	.27								
H15	.06	-0.11	-0.04	.10	-0.06	-0.02	.06	.11	-0.07	.21	.38	.22	.27				.11	.47								
H16	.04	-0.04	-0.04	.14	-0.08	-0.06	.36	-0.07	-0.09	.27	-0.06	-0.05	-0.08	-0.04			-0.04	.51						.30		
H17	.03	-0.03	-0.03	-0.1	.04	.05	-0.00	.17	.12	-0.07	-0.04	-0.08	-0.1	-0.03	-0.01		-0.03	.32						.35		
M1	.64	.26	.14	.24	.25	.27	.28	.41	.26	.25	.11	-0.02	.01	.10	.18	.08	.69									
M2	.69	.30	.27	.10	.19	.20	.17	.38	.12	.13	-0.01	-0.1	-0.08	-0.07	.12	.09	.40									
M3	.45	.30	.08	.25	.26	.20	.20	.17	.37	.43	.38	-0.01	.08	.09	.08	-0.08	.27	.40								
M4	.27	.07	.12	.69	.71	.76	.30	.19	.05	.06	.14	.21	.10	-0.03	.06	-0.00	.05	.27	.36							
M5	.05	-0.09	.04	.29	.24	.21	.32	.14	-0.00	.01	.18	.63	.34	.13	-0.04	-0.09	.07	.05	.36	.30						
M6	.43	.13	.06	.21	.22	.29	.25	.27	.05	.06	-0.02	.16	.06	.02	.15	.11	.43	.44	.19	.30	.21	.17				
M7	.21	.17	.11	.14	.16	.16	.69	.33	-0.02	.11	.02	.26	.40	.11	-0.1	.00	.31	.20	.04	.21	.31	.40				
M8	.40	.07	.25	.14	.29	.23	.32	.37	.07	.17	.03	.05	.00	-0.04	-0.07	.19	.47	.47	.18	.28	.14	.35	.40			
M9	.34	.61	.36	-0.16	-0.05	.00	.10	.13	.17	-0.11	-0.08	-0.09	-0.18	-0.12	-0.05	.15	.34	.51	.17	.04	.01	.17	.20	.30		
M10	.33	.22	.68	.15	.16	.08	.19	.08	.15	.05	-0.07	.08	.05	-0.06	-0.06	-0.05	.21	.32	.14	.12	.12	.06	.23	.35	.34	
H1		H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H15	H16	H17	M1	M2	M3	M4	M5	M6	M7	M8	M9	

N.B. correlations that are at least moderate (i.e. 0.30) are in bold

Table 53 comparing selected correlations of depressed and non-depressed groups [non-depressed are shown in brackets]

	H1 depressed mood	H2 guilt	H3 Suicide	H4 Early insomnia	H5 middle insomnia	H6 late insomnia	H7 work/ interests	H8 Retard- ation	H9 agitation	H10 psychic anxiety	H11 Somatic Anxiety	H12 gastro- intestinal	H13 general somatic	M1 Apparent Sadness	M2 reported sadness	M3 Inner tension	M4 reduced sleep	M5 Reduced appetite	M6 Concen- tration loss	M7 lassitude	M9 pessimism		
H5 middle insomnia				.25 [.62]																			
H6 late insomnia				.32 [.56]	.52 [.70]																		
H8 retardation	.46 [.32]			.40 [.09]																			
H10 psychic anxiety								.42 [.16]															
H11 somatic anxiety								.35 [.14]	.42 [.32]														
H13 general somatic							.38 [.43]				.05 [.34]												
H15 hypocho- ndriasis											.31 [.38]												
M1 apparent sadness	.63 [.64]			.43 [.28]				.60 [.41]						.42 [.69]									
M2 reported sadness	.48 [.69]		.40 [.27]					.20 [.38]						-.03 [.43]	.31 [.40]								
M3 Inner tension	.02 [.45]								.38 [.37]	.57 [.43]	.46 [.38]			-.07 [.34]		.05 [.31]							
M4 reduced sleep				.63 [.69]	.63 [.71]	.64 [.76]	-.03 [.30]					.66 [.63]	.14 [.34]				.30 [.36]						
M5 Reduced appetite							.35 [.32]																
M6 concentra- tion loss	.39 [.43]			.42 [.25]				.41 [.27]						.38 [.43]	.38 [.44]								
M7 lassitude	.36 [.21]			.72 [.69]				.59 [.33]					.45 [.40]	.32 [.20]				.20 [.31]	.43 [.17]				
M8 Loss of interest	.27 [.40]			.64 [.32]				.47 [.37]					.30 [.002]	.44 [.47]	.27 [.47]				.42 [.35]	.69 [.40]			
M9 pessimism	.15 [.34]													.18 [.34]	.14 [.51]								
M10 suicidal feelings	.24 [.33]		.86 [.68]												.42 [.32]								.11 [.34]
H1		H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	M1	M2	M3	M4	M5	M6	M7	M9		

Insomnia (M4, H4, H5 and H6)

Depressed group

Early, middle and late insomnia all correlate strongly with reduced sleep (M4). As item M4 assessed any insomnia, this association is expected. There is a strong correlation between middle and late insomnia, which is understandable in part because there was some difficulty distinguishing between them. There is a weak association between early and middle insomnia, and a somewhat stronger relationship between early and late insomnia.

There are no correlations between any insomnia item and any mood item, except for a weak negative correlation (-0.25) between middle insomnia and inability to feel (M8). Middle insomnia also has weak negative correlations with retardation, guilt feelings, and lassitude. There are no notable correlations with any anxiety item. Early insomnia, which might have been expected to correlate positively with H10 (psychic anxiety, which includes worrying about minor matters), shows only a very weak negative correlation with this item. Late insomnia correlates negatively (-0.20) with retardation.

Non-depressed group

There are strong positive correlations among all the insomnia items (M4, H4, H5, H6). Middle insomnia correlates with no other items. Early insomnia shows a weak association with reduced appetite, and late insomnia a weak association with concentration loss (M6). Reduced sleep, however, which shows the strongest association with late insomnia, also has moderate positive correlations with reduced appetite (0.36), apparent sadness (0.34), inner tension (0.30), concentration loss (0.30), and work and interests (0.30). There are weak associations with depressed mood (0.27), reported sadness (0.27) and inability to feel (0.28). These correlations are not present among the depressed group.

Insomnia among these depressed physically ill patients bore no systematic relationship to their other symptoms. Forsell et al (1993) noted a similar lack of association: although a high rate of sleep disturbance was noted for all subjects, the item-total correlation between sleep disturbance and the eight other DSM-III-R symptoms of major depression, in over 600 people aged 75 years and over, was 0.09. A factor analysis of the CES-D scale, in a large study (N = 2,806) of elderly

community-living people, found that the item assessing restless sleep loaded only marginally on the second factor (somatic or retarded activity); this was one of the few ways in which the factor structure of the CES-D differed from that observed in middle-aged samples (Berkman et al 1986). In the present depressed sample, the lack of association with H15 suggests that insomnia was not related to the awareness of physical symptoms.

Although persistent and/or severe sleep disturbance may discriminate between depressed and non-depressed patients, and as a depressive symptom it is associated in the non-depressed with other depressive symptoms, in the depressed patients it appears unrelated to depression or anxiety. The factor analyses may reveal some particular clustering of symptoms.

It is also entirely possible that insomnia may be subject to change with improvement of depression, a question not addressed by this study.

Anorexia (H12 and M5)

Depressed group

These two items have a strong but imperfect association (0.66); although both assess appetite, the lack of a stronger correlation is probably due to the inclusion of medications in H12. Both correlate moderately with loss of weight, suggesting that either appetite actually was reduced sufficiently to cause weight loss, or that the cognitive set of the patient or interviewer created the association, as the question was rated positively only if weight loss was attributed to depression.

Reduced appetite correlates positively with reduced sleep (0.295) and with lassitude (0.29), and still more weakly with loss of concentration, apparent sadness, retardation, hypochondriasis and late insomnia. M5 also correlates moderately with work and activities (0.35), apparently relating to both loss of interest and decrease in activity. There are no notable negative correlations.

Non-depressed group

As in the depressed patients, there is a strong positive correlation between reduced appetite and gastrointestinal disturbances. Both items correlate positively with general somatic symptoms; and reduced appetite (M5) also correlates with reduced sleep, lassitude, and work and interests, suggesting a somatic relationship rather than motivational (which would require a correlation with inability to feel) or mood, as there are no associations with affect items.

The correlations here are unconvincing in supporting appetite loss as a symptom of depression in this population, even though persistent severe loss of appetite discriminated between depressed and non-depressed patients. The factor analysis may help to determine the relationship, which may be associated with the severity or type of physical illness. The weak correlation with MADRS item 8 (anhedonia) suggests that appetite loss is not determined by loss of interest. The study by Forsell et al (1993) of DSM-III-R criteria symptoms of major depression found an item-total correlation of appetite disturbance of only 0.20.

The relationships among symptoms of sleep and appetite disturbance are illustrated graphically in Figure 4 and Figure 5 below.

Figure 4: illustrating the associations among sleep items

[N.B. arrows indicate correlations of 0.30 and above; correlations of 0.60 and above are shown in bold.]

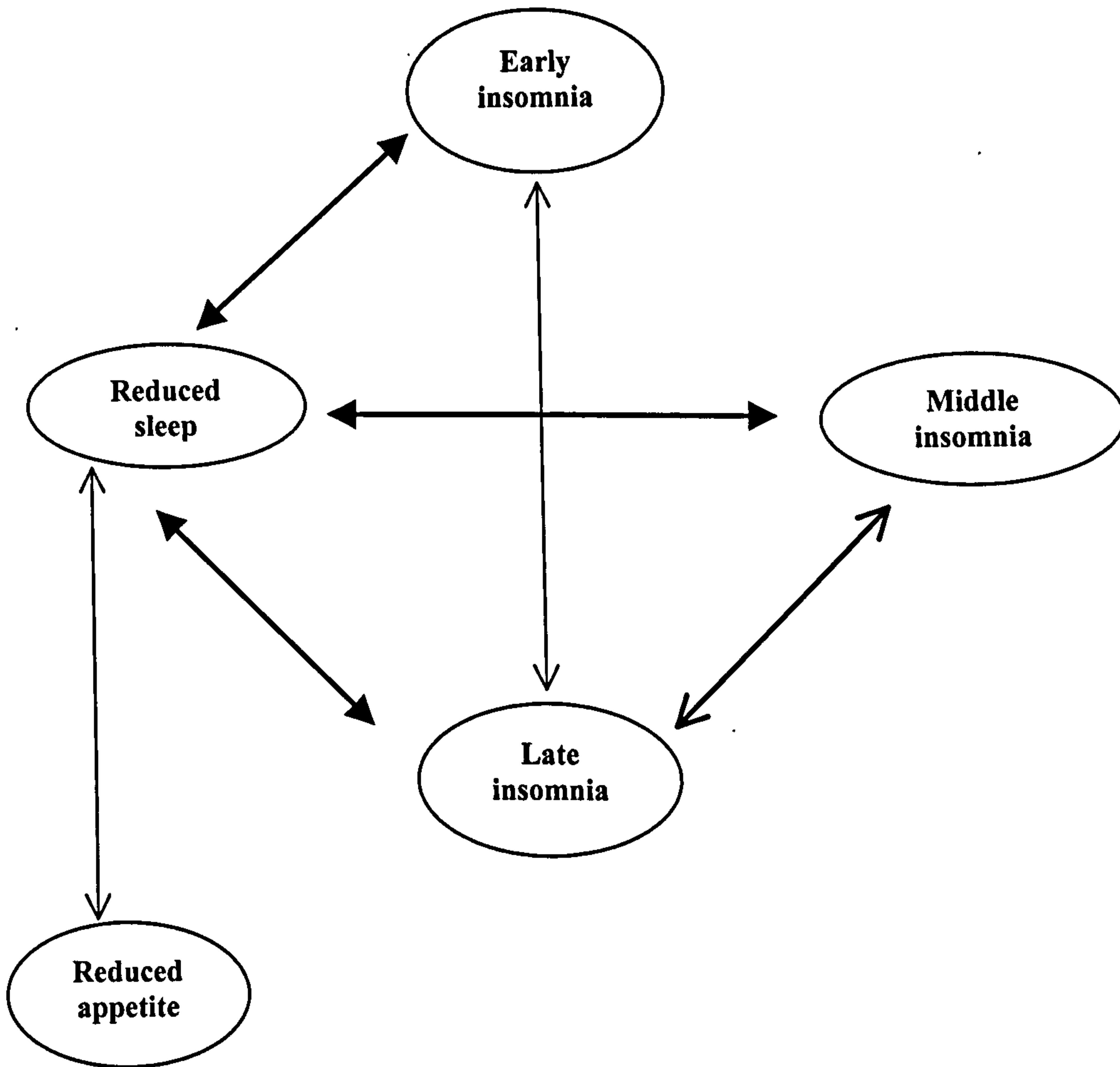
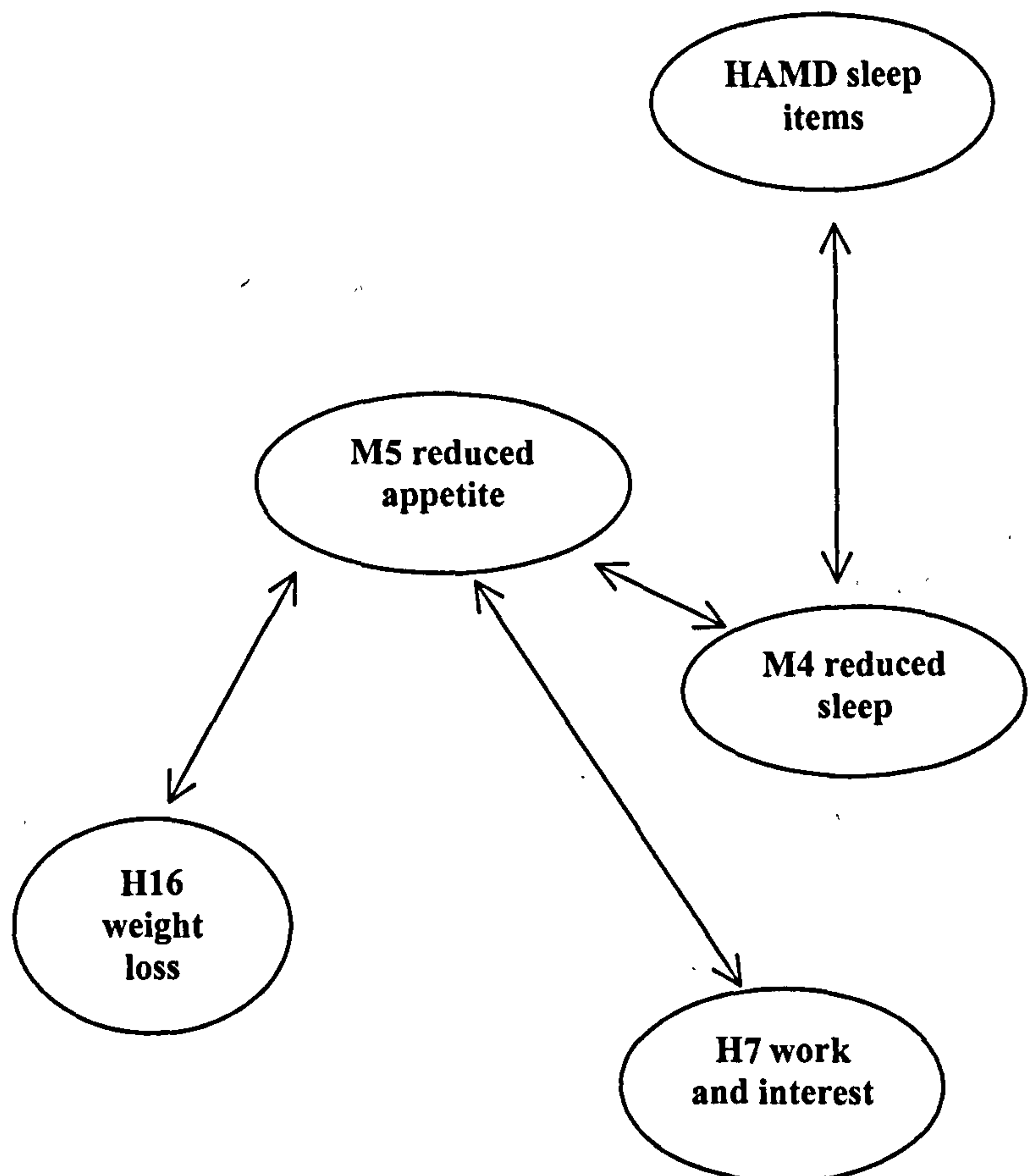


Figure 5: illustrating the relationship of reduced appetite to other symptoms and signs of depression in this sample of elderly depressed patients.

Reduced appetite was associated with weight loss, reduced sleep in general (but not any specific type of sleep disturbance), and HAMD item 7 work and interests (but not more specific symptoms such as lassitude, anhedonia or lack of energy).



Guilt feelings (H2 and M9)

Depressed group

The two items assessing guilt feelings correlate very strongly with each other at 0.82, suggesting little difference between them. The only other correlations noted are a weak negative association of H2 with middle insomnia, and a weak positive association between M9 and psychic anxiety. As psychic anxiety includes worrying, inner tension, apprehension and fear, the association between these items may be dysphoric feelings in general rather than depression or, more discretely, worrying.

There are no notable associations at all with depressed mood, inability to feel or lassitude; and the positive correlations with reported and apparent sadness are very weak, although intuitively it would be expected that there would be an association with reported sadness.

Non-depressed group

Guilt and pessimism correlate strongly, although to a lesser degree than in the depressed patients. Pessimism (M9) also correlates moderately strongly with reported sadness, and moderately with depressed mood, apparent sadness, both suicide items, and inability to feel. H2 correlates moderately with depressed mood, reported sadness, and inner tension, and weakly with agitation. The number of patients endorsing M9 and H2 was very low, however, and at a low level of severity (self-reproach, feeling has let people down, fluctuating ideas of failure or self-depreciation), and the correlations are with other items also endorsed by a minority of patients at a low level of severity.

Factor analysis, eliminating H2 in favour of M9 and undertaken in the following section, may help determine whether this symptom should be eliminated altogether from rating depression severity in this population due to its low endorsement frequency (Streiner and Norman 1995).

Suicide

Depressed group

The two suicide items (M10 and M3) correlate very strongly with each other at 0.86, suggesting that the differences between them are minor. Both correlate moderately strongly with reported sadness, and both correlate weakly with depressed mood and apparent sadness.

The more discriminating item of the two (according to the Chi square analysis), M10, also shows some weak positive correlations with inability to feel, and early insomnia. The association with early insomnia is interesting, as this item does not correlate with any of the depressed mood items, and there is no apparent explanation for this association. The correlation of M10 with M8 (whereas H3 fails to show a correlation with inability to feel) may be related to the inclusion of feeling that one is weary of life or would probably be better off dead included in M10, which may be more closely associated with anhedonia than the more overtly suicidal H3.

Non-depressed group

Twenty percent of the non-depressed group were rated as 'weary of life' to some extent on the MADRS item, whereas 8% were rated 'life not worth living' and only 2% as wishing they were dead on the HAMD item. As with the guilt items, there is a strong positive correlation between the two suicide items, but again less strong than that seen in the depressed group, probably due to the greater severity of suicidal ideas measured by H3 which were unendorsed by the non-depressed. Both items correlate moderately with pessimism and depressed mood, and M10 with reported sadness and inability to feel; H2 has a weak association with inner tension and a weak association with agitation and apparent reported sadness. M8,

Suicidal feelings seem, therefore, to be associated primarily with what the patient says; suicidal feelings are undoubtedly related to depressed mood, especially for those patients who articulate their feelings. Ratings on the suicide items may have been affected by a gestalt in which reported suicidal thoughts were necessarily associated with more severe depressed mood.

Suicidal feelings are unrelated to anxiety, and are not associated with guilt feelings. The more discriminating of the two (M10) will be retained in further analyses.

Hypochondriasis (H15)

Depressed group

'Hypochondriasis' was generally mild, mainly a preoccupation with physical symptoms, although ratings at a more severe level include frequent complaints and requests for help. The only significant correlation for this item is with somatic anxiety, which assesses the presence of somatic symptoms such as palpitations and tremulousness, and is unassociated with depressed mood or anxiety. The lack of correlations with other anxiety symptoms tends to point to physical symptoms being associated with a preoccupation with, rather than actual worry about, the somatic symptoms, which would have led to a positive correlation with H10.

Non-depressed group

Hypochondriasis in the non-depressed also correlated moderately with somatic anxiety, and weakly with general somatic symptoms. This tends to confirm the hypothesis that H15 assessed a preoccupation with actual symptoms, without attendant anxiety or worrying. Symptoms of somatic anxiety were common among the non-depressed, except at a severe level, and may be related to actual symptoms of illness or possibly to medication; the presence of somatic symptoms was associated with preoccupation about possibly those same symptoms.

This result may confirm the conclusions of Fava et al (1984) that the demanding patient preoccupied with health may be depressed, and that depressed elderly patients are more likely to focus on somatic symptoms. Although 'hypochondriasis' was definitely more common among the depressed patients and differentiated well between groups, there does not appear to be an obvious relationship between what is being measured by this item, and either anxiety or depressed mood or anhedonia.

There may also be some difference between preoccupation with somatic symptoms (H15.2), and frequent complaints/requests for help (H15.3); that is, H15 may be assessing two separate symptoms. This item may not have a place in a rating scale for this population, for although it discriminated well between depressed and non-depressed groups, the meaning of the item may not be as clear-cut as it would be in a psychiatric population. Analysis of the factor structure may reveal to which dimension hypochondriasis belongs.

Anxiety and agitation (H9, H10, H11, M3)

Depressed group

The strongest association, a correlation of 0.57, is between psychic anxiety (H10) and inner tension (M3). The lack of a stronger correlation demonstrates that these two items assess somewhat separate symptoms, with H10 concentrating on fear and worry, and M3 assessing anxiety and panic. These items both assess subjective feelings of tension, with H10 discriminating well when apprehension is observable, and M3 discriminating well when complaints of inner tension are more than occasional. This correlation suggests a patient reporting persistent feelings of tension or panic may also be observed to be apprehensive.

Other correlations among these items are all moderately strong. The only other notable correlations of any anxiety item with any other scale item are the one previously noted between somatic anxiety (H11) and hypochondriasis; and a moderate correlation between M3 inner tension and M2 reported sadness.

Non-depressed group

Inner tension, endorsed by 40% of non-depressed patients at mild to moderate levels of severity, correlates 0.43 with psychic anxiety (less than the depressed group), but also with depressed mood and apparent sadness (0.45 and 0.43). There are also moderate associations with agitation and somatic anxiety and also with guilt and reduced sleep.

Somatic anxiety correlates with psychic anxiety and inner tension, as well as hypochondriasis. There are also weak positive correlations with general somatic symptoms, retardation, loss of weight, and suicide (H3). The relatively low levels of anxiety in seen in this group, on items that discriminated very well between depressed and non-depressed, suggest the presence of a generalised uncomfortable feeling in the non-depressed, different from that in the depressed. Because there is no GMS data for the non-depressed, it is not clear whether responses to H13 describe loss of energy or other symptoms such as headaches. In this group, tension may be associated with loss of energy or other general somatic complaints.

The correlations in the depressed group between these anxiety items and any mood item (including inability to feel), and lassitude and general somatic symptoms, are mainly weak, both positive and negative, suggesting that anxiety, while dysphoric,

was essentially independent from depression in this sample, and that tension was unassociated with loss of energy. The factor structure may help to clarify.

The possibility of eliminating all anxiety items from a construct scale will be explored in the factor analyses. Agitation and somatic anxiety will be dropped initially, and M3 kept in favour of H10, although there may ultimately be a case for including a new question in a measurement scale based on H10, which observes tension and apprehension rather than agitation.

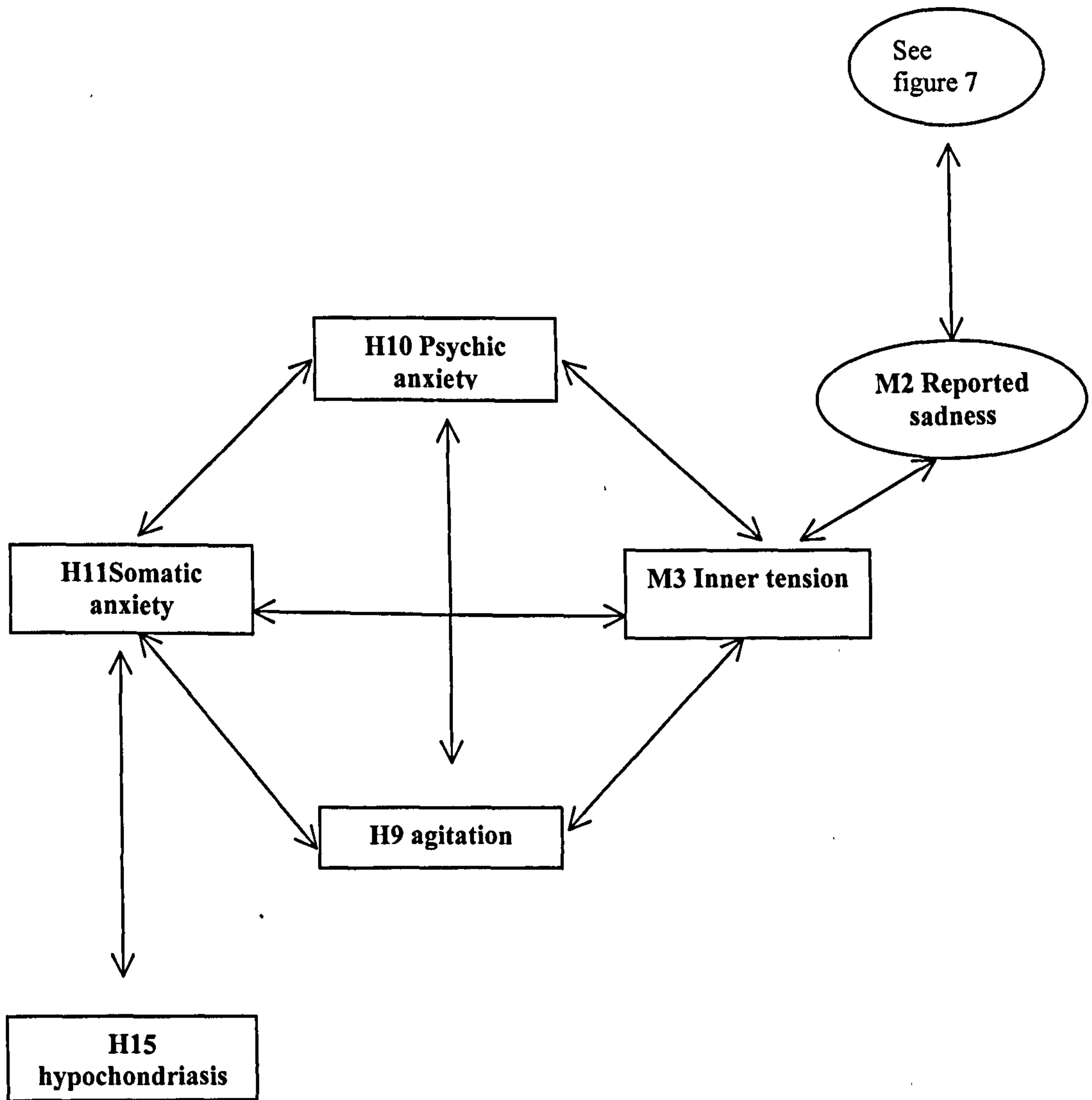
Figure 6 illustrates the relationship among anxiety symptoms and other symptoms measured in the scales.

Figure 6: showing the correlations of anxiety items.

Psychic anxiety, somatic anxiety, agitation and inner tension are associated with each other. hypochondriasis is correlated with somatic anxiety only.

Inner tension is associated with reported sadness

N. B. correlations greater than 0.3 are shown



General somatic symptoms (H13)

Depressed group

This item, which seems to mainly assess the subjective feeling of loss of energy, correlates positively with lassitude, work and interest, and inability to feel. The association with the first two is entirely logical, as a person reporting lack of energy would be likely to report lower levels of activity and lethargy. There is a weak relationship (0.24) with retardation, suggesting that the feeling of low energy is not observable as slowness.

Non-depressed group

The associations are moderately strong with work and interest and lassitude, moderate with reduced appetite and gastrointestinal symptoms, and weak with somatic anxiety and hypochondriasis. The non-depressed were, then, showing perhaps to some extent a similar picture of loss of energy as in the depressed patients, but without anhedonia and with the addition of loss of appetite, suggesting a more somatic explanation.

This pattern of association is seen in Forsell et al (1993), where the item-total correlation between loss of energy and the rest of the DSM-III-R criteria symptoms of major depression was 0.43, similar to the item-total correlations for dysphoria (0.41) and loss of interest (0.48), although in the present study the correlation with reported sadness among the depressed was very weak (0.14).

However, the relationship with inability to feel, which assesses anhedonia, is less straightforward, and strengthens the argument for the inclusion of an item assessing loss of energy in a depression severity measure.

Difficulty with concentration (M6)

Depressed group

This unique item, which assesses subjective loss of concentration, and which discriminated very well between groups at the level at which depressed patients reported difficulty concentrating on television or conversation, correlated positively with inability to feel, with lassitude, work and interest, and retardation; and with depressed mood, apparent and reported sadness. This symptom, then, is associated with both low mood and anhedonia, and with psychomotor retardation.

Non-depressed group

In this group also, loss of concentration showed a positive association with mood, correlating with apparent and reported sadness and depressed mood, as well as inability to feel. There are also weak correlations with retardation, work and interests, reduced sleep and early and late insomnia. This suggests that loss of concentration at mild levels is associated with low mood.

The correlations strongly support the subjective experience of inability to concentrate as an important symptom of depression. Forsell et al (1993) also noted a significant positive correlation, finding disturbance of thinking and concentration to have an item-total correlation coefficient of 0.37 with the remaining DSM-III-R criteria symptoms of major depression.

Retardation (H8)

Depressed group

Retardation correlates with apparent sadness and with depressed mood. Although a depressed appearance might certainly include observable retardation, which would dictate a strong correlation between these items, the association is only moderately high, and much of the rating for apparent sadness also included a tendency to weep.

In addition, observed retardation correlates with reported lassitude (M7) and reported reduction in activity (H7), suggesting that lethargy and lassitude are evident on observation. Retardation correlates positively with inability to feel and with concentration difficulties, which were not observed but reported by the patient, confirming the correlations' independence from observer bias. In younger depressed psychiatric patients, retardation has been noted to correlate best with anhedonia (Fleminger 1991).

Both anorexia questions correlate positively with retardation, suggesting that anorexia relates to physiological slowing; or that loss of interest includes loss of interest in food, and can be observed as retardation.

Non-depressed group

The strongest correlations are with apparent sadness (0.41), inability to feel (0.37), and reported sadness (0.38), and there are moderate associations with

depressed mood and lassitude. As retardation (present in less than a quarter of individuals) was minor, these associations again suggest that not only is retardation an observable physical manifestation of a person's reported feelings of interest in the surroundings, but also that a retarded appearance may be interpreted (correctly or incorrectly) by the observer as depression. There are weak positive associations with psychic anxiety and with concentration difficulty.

Observable retardation is not only a useful discriminating sign of depression, but also appears to be associated with core symptoms of depression. This will be further examined in the factor analyses.

Anhedonia: inability to feel (M8)

Depressed group

This item, the most discriminating between groups, correlates most strongly with lassitude (0.72) and work and interests (0.64). Work and interests includes reported loss of interest in activities as well as reported decrease in activities, so a strong correlation should be expected between the two items. However, lassitude records reported difficulty in starting activities and the effort involved in performing them, so the association here is indirect. There is also a positive correlation of 0.30 with loss of energy (as recorded by H13).

Observed retardation (H8) and apparent sadness correlate moderately strongly (0.47, 0.44) with M8. The associations of M8 with reported sadness and with depressed mood are much weaker (0.27). Reported loss of interest was therefore observable during interview, as a depressed appearance, but not necessarily reported as sadness or dysphoria. Anhedonia appears separate from dysphoria, as previous research (Lawton et al 1996) has suggested.

In addition, there is a notable correlation with concentration difficulty of 0.42; not high enough to establish diminished interest as synonymous with lack of concentration, but rather as associated with it.

Non-depressed group

Only one non-depressed individual reported a loss of interest; responses to this item were mainly a reduction in the ability to enjoy usual interests. The strongest correlations are with apparent and reported sadness (0.47) and with depressed mood

and lassitude (0.40). There are also moderate correlations with concentration loss (0.35), retardation, work and interests (0.31), M10 suicide (0.34), and with pessimism (0.30).

The pattern in the non-depressed differs from that of the depressed group. In those patients without depression, a diminished ability to enjoy life and maintain interests is associated with low levels of dysphoria and with observed and reported slowing. The absence of any correlation with H13 (general somatic symptoms, which in the depressed represented loss of energy) suggests that loss of energy may be reported as a symptom of depression in the physically ill as part of anhedonia.

Libido

The skewed distribution of the responses to this item makes correlational analysis inappropriate.

Mood and appearance (M1, M2 and H1)

Depressed group

H1 and M1 (apparent sadness) correlate strongly with each other (0.63); the non-verbal communication of depressed mood rated on H1 is probably responsible for the association. H1 and M2 (reported sadness) correlate moderately strongly (0.48), as do M1 and M2 (0.42). There is, then, some independence between the mood the patient reports and the observed mood of the patient.

As already noted, M1 shows a strong correlation with retardation (0.60); retardation correlates moderately with H1 (0.46) but only weakly with M2 (0.20), suggesting a despondent appearance included observed slowness but that slowing was not necessarily observed in patients reporting dysphoric feelings. Moderately strong correlations between M1 and work and interests and lassitude suggest a manifestation of the retardation associated with M1. Inability to feel also correlates moderately strongly with M1, as noted. There are moderate correlations between both M1 and M2 with concentration loss (0.38).

Reported sadness (M2), but not apparent sadness, correlates moderately with suicidal feelings (0.42, 0.40), and inner tension (0.31), and less strongly with psychic anxiety (0.25). There is a weak positive association with inability to feel (0.27). The

correlation with suicidal feelings may be a measure of the willingness of patients to discuss their feelings of misery and despondency, including a wish to be dead. The correlation with inner tension is interesting and may relate to dysphoric feelings other than low spirits, sadness and hopelessness.

Non-depressed group

Apparent and reported sadness, and depressed mood, all correlate strongly with one another; the levels of depressed appearance and mood which were assessed did not, of course, include extremes of depressed mood or appearance, and this lack of variability inflates the correlation coefficients.

Inability to feel, as previously noted, correlated moderately strongly with these items. Lassitude, reduced sleep, and agitation correlated with apparent sadness, but not with reported sadness. Agitation was minor among the non-depressed group, with less than one third recorded as fidgeting, and at this level did not discriminate between groups. Reduced sleep, as reported by the patient, does show a linear association with apparent sadness.

Reported sadness also correlated with pessimism (0.51), concentration loss (0.44), inner tension (0.40), retardation (0.38), MADRS suicide (0.32), and guilt (0.30). The estimation of depressed mood could include elements of reported guilt, feelings of life not being worth living, and tension, but observed retardation should not have influenced reported sadness.

These data indicate the importance of assessing reported mood and observed mood separately.

Work and interests (H7)

Depressed group

H7 correlates strongly with both M7 lassitude (0.72) and M8 inability to feel (0.64); as already noted, H7 assesses both loss of interest and decrease in activity. There are moderate associations between H7 and apparent sadness and retardation; the subjective feeling of loss of interest is observable as slowness and a depressed appearance.

H7 also correlates moderately with general somatic symptoms and loss of appetite. General somatic symptoms, which mainly appear to represent loss of

energy, quite reasonably manifest in difficulty starting activities and a decrease in time spent in activities; but the association with inability to feel describes a person experiencing both lack of energy and loss of interest.

Non-depressed group

Around one half of non-depressed patients were scored at H7.1 (thoughts and feelings of incapacity, weakness, fatigue), and relatively few at the greater severity which includes loss of interest; the strong association of H7 with lassitude may be explained in this sample as describing more physical than mental symptoms. There are moderate associations with general somatic symptoms, loss of weight, inability to feel, reduced appetite, and reduced sleep.

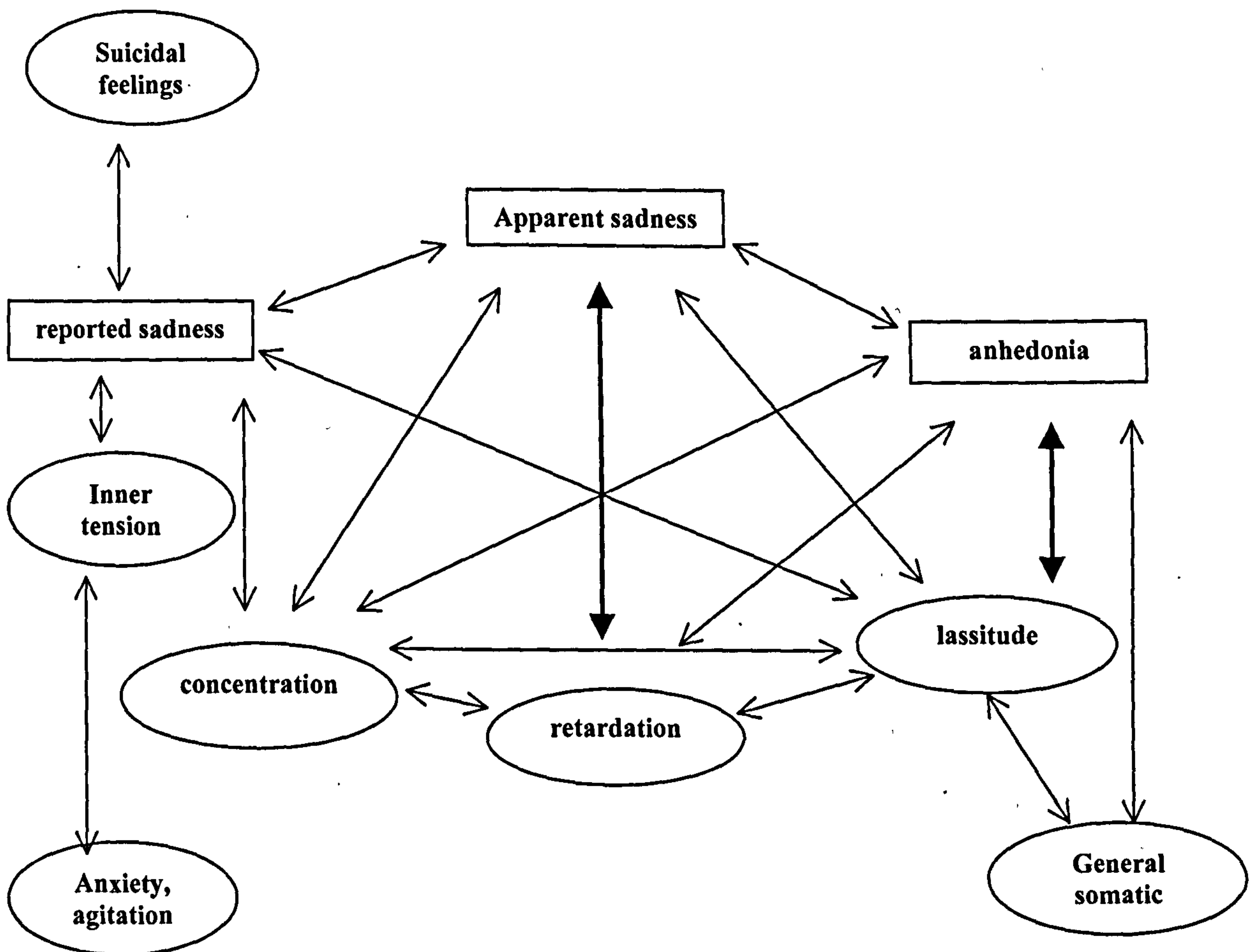
The complex relationships among the symptoms and signs of depression are illustrated graphically in Figure 7. (The HAMD items assessing depressed mood (H1) and work and interests (H7) have not been included in order to add clarity to the illustration.)

Whether or not these signs and symptoms are useful as part of a rating of severity can be better determined with an assessment of construct validity in the following section.

Figure 7: illustrating the relationships among mood items and other signs and symptoms of depression in this elderly physically ill depressed population.

Observed sadness was related to both anhedonia and reported sadness. Observed sadness was strongly correlated with retardation, and also associated with reported loss of concentration, and lassitude. Suicidal feelings and reported sadness were related, as were reported sadness and inner tension (which was only associated otherwise with other anxiety items).

N.B. correlations which are at least moderate (i.e. 0.30) are shown; correlations of 0.60 and above are shown in bold.



Results (IV): Reliability of the Hamilton and Montgomery-Asberg Depression Rating Scales

Introduction

Scales should demonstrate evidence of validity and reliability for the specific population in which they are used. This section will describe the estimation of reliability and validity in an elderly physically ill sample for the Hamilton and the Montgomery-Asberg scales, the two most commonly used scales for rating depression severity in clinical and research work. The internal consistency and factor structure of both scales were examined.

Detailed explanation of analyses

Internal consistency

For global depression scores to be meaningful, a high level of internal consistency is necessary. Cronbach's alpha (Cronbach 1951) is a commonly used reliability coefficient based on the average correlation of items within a scale, and describes how well the items in a scale relate to each other by estimating *'the proportion of the test variance due to all common factors among the items [and]...reports how much the [global] test score depends upon general and group, rather than item specific, factors.'* (Cronbach 1951).

Item homogeneity is the most important consideration in construct-measurement scales (Nunnally 1978). If a depression scale is to be used as a measure of a single construct and reported as a global score, then the items should be measuring the same construct, i.e., they should be homogeneous; and the alpha coefficient should be high (Streiner 1993). Coefficient alpha can range from 0 to 1, and the currently accepted levels are at least 0.70 for a short scale, and up to 0.90 for a longer scale (Nunnally 1978, Streiner and Norman 1995), although levels greater than 0.50 have been considered sufficient (Cronbach 1951). The calculation of alpha depends upon both the correlations of the scale items and the number of items within

the scale; a scale with a large number of items (e.g., thirty or forty) will achieve a higher alpha, given the same inter-item correlations, as a shorter scale.

In the development and validation of a construct scale, items which have a low correlation with the total score are successively deleted until the alpha coefficient (and therefore the internal consistency) has been maximised (Nunnally 1978). How each individual item affects the scale can be determined by examining the alpha after each deletion.

In addition to the alpha coefficient, the corrected item-total correlations were calculated. When the Pearson correlation coefficient between each individual item and the sum of the scores on the remaining items is calculated, a low correlation coefficient demonstrates that there is little relationship between a particular item and the sum of the others in a scale. The Pearson correlation is robust enough to produce relatively accurate results even if the data are not normally distributed (Norusis 1988).

Factor analysis

Factor analysis simplifies a set of data into a smaller number of factors consisting of items that correlate strongly with each other. Applied to a homogeneous scale (one with high internal consistency), it will aid in determining the underlying dimensions that make up the construct (Nunnally 1978). When a scale without homogeneity is subjected to factor analysis, each factor may be demonstrating the presence of separate constructs within the scale; misleading conclusions could be drawn concerning a presumed construct unless it is understood that what is being examined is separate constructs. Low internal consistency in a depression rating scale would indicate that the scale was assessing separate constructs, one of which might for example consist of somatic symptoms unassociated with other symptoms of depression. In this study, with a sample of depressed physically ill elderly people, factor analysis will help to demonstrate whether the HAMD and MADRS scales measure depression in this population in the same way that they measure depression in others. It may also assist in determining the relative value of the somatic symptoms.

The construct of depression comprises affective, cognitive, somatic and motivational symptoms and signs; and depression rating scales reflect this in their constituent items. The HAMD and the MADRS differ in the main components that

are assessed. There is less emphasis in the HAMD on the patient's subjective state' than on behavioural manifestations and somatic symptoms (Carroll et al 1973); the MADRS was developed in order to assess those symptoms most prone to change with treatment, and there are items for all core symptoms except psychomotor retardation. As Davidson et al (1986) point out, ...'*the Hamilton and the MADRS are not interchangeable scales for measuring severity of depression, ...they have different properties and somewhat different uses.*'

Principal components analysis (PCA) is the most common method of factor analysis for the types of scale used in this study. Using a computer procedure (e.g. SPSS 'factor'), a matrix correlating all items with each other is produced, and successive weighted multiple regressions are performed on the data to produce factors each explaining decreasing amounts of variance in the data, maximising the amount of variance explained by the variables.

To produce reliable correlations, a sample of at least 100 subjects, homogeneous with respect to the core criterion, is required; the minimum ratio of variables to subjects is 2:1 (Kline 1994) with larger ratios preferable. The scale items should be multipoint (Comfrey 1978), and measured on an interval scale or one in which the distances between measured points have substantive meaning.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is computed, and determines whether it is possible to explain correlations between pairs of variables by other variables. Figures in the seventies are very satisfactory for factor analysis, but smaller numbers may be acceptable (Norusis 1990).

Measures of sampling adequacy for individual items (MSA) allow for the elimination of items with low endorsement frequency or inadequate spread of responses; and examination of the correlation matrix may reveal items which fail to correlate adequately with any others, which may be removed prior to factor analysis (Kline 1994, Norusis 1988).

Number of factors

The number of factors extracted for rotation is not determined solely by any straightforward objective test, and may, in fact, be decided only after pursuing several solutions. Factors have associated eigenvalues, which represent the variance explained by each factor (eigenvalue divided by number of items equals percentage of

variance), and the default computer method will select all factors with eigenvalues greater than 1.0. This arbitrary method usually results in the retention of too many factors for rotation (Cattell 1978), producing factors that are uninterpretable or contain less than three variables. A factor with only one or two items may represent a separate construct, or consist of 'bloated specifics:' two items that are essentially duplicates of each other. An alternative or adjunctive method of determining the number of factors to rotate, which was used in this study, is to apply the scree test by plotting the eigenvalues against the number of factors and visually assessing the slope of the plot for the change which indicates a break in the distribution. The variance accounted for by the number of factors chosen should account for at least 50% of the total variance (Streiner 1993), and the variance should be largely attributable to one factor. A satisfactory solution uses as few factors as possible to meaningfully explain the observed correlations.

Rotation of factors

After extraction, factors are rotated with the intention of achieving a simple structure, in which each factor contains items that correlate only with that factor. In a scale in which there is a large amount of error, it may not be possible to explain the resulting factor structure in a meaningful way. Rotation is by either an oblique or an orthogonal method, and the method of rotation depends to some extent upon the type of construct under study. Both methods of rotation may be used before deciding on the most appropriate method for a particular analysis. The most commonly used rotation is orthogonal (e.g., Varimax), in which items are grouped on the factors on which they load the most highly, and each factor achieves the maximum independence from the others. Oblique methods (e.g., Direct Oblimin) allow the factors to overlap, and when a construct is assumed to be made up of factors which are likely to be interdependent, this type of rotation may be best (Cattell 1978). The main disadvantage of oblique rotation is that the proportion of variance explained by the factors is not made clear. When both methods of rotation are employed and result in similar factor structures, and the correlation matrix produced with oblique rotation suggests that factors are uncorrelated, then the orthogonal rotation is most easily interpretable.

Factor loadings

The meaning of a factor has to be deduced from its loadings, which are the correlations of a variable (in this case, the scale item) with a factor. Loadings are high if they are >0.6 , and moderate if >0.3 . Lower correlations are insignificant. Items may load more than one factor. If an item loads fairly equally on more than one factor, it may be of little use in discriminating differences between factors. Items which load high on one factor and low on another are generally attributed to the factor on which they load highest. An item is identified as a 'marker' for a factor if its loading is at least 0.30, and for which factor it loads most highly. Once factors have been obtained and identified, they should be validated against external criteria (Streiner and Norman 1995).

Factor structure of the Hamilton Depression Rating Scale in elderly people

Three published studies describe the factor structure of the HAMD in elderly people. None of the reports includes a measure of internal consistency

Kivela and Pahkala (1988)

Using a sample of 290 depressed, relatively healthy people aged over 60 years living in the community, Kivela and Pahkala (1988) found a structure different from that noted in younger adults (Hamilton 1967), suggesting that the scale '*clearly behaves differently*' in elderly subjects. Four factors, accounting for only 39.7% of the total variance in the scores, were identified using the 21-item HAMD. [Table 54]

The main loadings on Factor 1 include 'work and interests,' measuring either anhedonia, loss of motivation, or physical debility. In the general adult and elderly populations, the positive association between depressed mood and physical disability is well-known. Therefore, this correlation could represent depressed mood associated with physical illness, the symptoms of psychic anxiety, loss of libido and general somatic symptoms due to physical pathology.

In the second factor, somatic anxiety and hypochondriasis load almost equally, and early insomnia is moderately associated with this factor, suggesting both the presence of somatic symptoms and concern about physical health. Factor 2 could represent a sub-population with physical complaints that prevent them from getting to sleep at night, and reasonable 'hypochondriasis.'

Table 54: factor structure of the HAMD (Kivela and Pahkala 1988)

Factor	%variance	HAMD item	loading
1	18.7	work and interests	.70
		loss of libido	.68
		depressed mood	.65
		psychic anxiety	.59
		general somatic symptoms	.53
2	7.9	somatic anxiety	.74
		hypochondriasis	.73
		early insomnia	.43
3	6.7	guilt	.64
		middle insomnia	.56
		loss of insight	-.54
		late insomnia	.50
4	6.1	loss of weight	.83
		gastrointestinal	.72
		suicidal feelings	.44

The inclusion of suicide on the fourth factor, with loss of appetite and weight loss, does not appear clinically meaningful, although the loading for suicidal feelings is relatively low. (The suicide item is reported to have correlated weakly, for women only, with work and interests, psychic anxiety and gastrointestinal symptoms.)

Items were included on a factor only if they loaded at 0.40 or greater, and items that loaded on more than one factor were reported only on the factor on which they loaded highest. It is likely that too many factors were retained for rotation, as the criterion for retention was those factors with eigenvalues greater than 1.0. After rotation, any factor with less than three items was eliminated. It is not stated how many factors were initially extracted, and multiple loadings of items on factors were not reported. Secondary (or even tertiary) loadings may therefore have been of similar magnitude, which might helpfully have been reported. Data were not reanalysed using fewer factors when simple structure was not obtained. The low variance, however, suggests an inadequate representation of the data. Retardation, agitation, and the five extra items included in the 21 item HAMD do not figure in the factor structure. Kivela and Pahkala (1988) draw no conclusions from their study regarding the utility of the HAMD in elderly people, although they note that the factor structure differs between men and women, and that all factors beyond the first differ from Hamilton's (1967) report.

In a study with younger adults, the factor structure of the 17-item HAMD in 60 depressed French psychiatric in-patients (77% female, mean age 47 years) was determined by Fleck et al (1995) using principal components analysis with Varimax rotation. Although the sample was small, the similarities in the techniques used for factor analysis allow for comparisons. Applying Lebart's criteria to determine the number of factors to retain for rotation (i.e. keeping factors with eigenvalues significantly greater than those obtained by simulation with random numbers), and including items in a factor if the loading was greater than 0.50, three factors explaining a total variance of 47% were obtained [Table 55]

Table 55: factor structure of HAMD (Fleck et al 1995)

Item	Factor number (percent of variance)		
	1 (25%)	2 (13%)	3 (9%)
7 Work & interests	0.76		
1 Depressed mood	0.75		
13 General somatic	0.70		
8 Retardation	0.70		
2 Guilt feelings	0.56		
15 Hypochondriasis		0.75	(-0.35)
10 Psychic anxiety		0.73	(0.25)
11 Somatic anxiety		0.71	
9 Agitation		0.69	
16 Weight loss		0.53	
6 Late insomnia			0.75
5 Middle insomnia			0.74
4 Early insomnia			0.73
3 Suicide	0.29		
14 Libido	0.48		
12 GI symptoms		0.44	
17 Insight			

This factor structure also explains an insufficient proportion of the variance, and the size of the sample was unacceptably small; but the result yields three clearly interpretable factors. The first is apparently depression, with both anhedonia and depressed mood loading strongly here. The inclusions of general somatic symptoms may or may not be due to loss of energy as was seen in the elderly depressed patients in the current study. The second factor appears to represent anxiety, with the strong loading from hypochondriasis possibly indicating worries over physical symptoms or worrying physical symptoms caused by anxiety. The third factor is clearly insomnia;

psychic anxiety loads weakly here; hypochondriasis is negatively associated with this factor.

This structure bears some resemblance to that of Kivela and Pahkala (1988). but different methods were used for the selection of number of factors to rotate and the inclusion of items; if Kivela and Pahkala (1988) had used a three-factor solution, the interpretation of factors might have been more meaningful. However, Kivela and Pahkala's first factor contains psychic anxiety; and there is no clear insomnia factor as in the younger adults. In addition, the loss of retardation and agitation from the final results is unfortunate. It could be very tentatively concluded from the comparison of these two studies that there might be differences in the suitability of the HAMD to measure depression in elderly compared with younger adults.

Good et al (1987)

In a factor analysis of the HAMD in an elderly population, Good et al (1987) performed a PCA on the scores for the 21- item HAMD of a stratified sample of two hundred community dwelling elderly people. Twelve and a half percent of their sample had a HAMD score of 14 or more, which the authors classified as depressed.

Items which produced unique factors ('depersonalisation,' 'ideas of reference and persecution,' and 'obsessional ideas and behaviour') were excluded from the analysis. 'Libido' had not been included in the data collection. Four factors with an eigenvalue greater than one, accounting for 60.7% of the variance, were extracted and subjected to Varimax rotation. [Table 56]

Table 56: factor structure of the HAMD (Good et al 1987)

Item	Factors (variance)			
	1 (29.6%)	2 (13.1%)	3 (10.7%)	4 (7.3%)
5 Mid insomnia	.60			
9 Agitation	.58	(.38)		
10 Psychic anxiety	.55	(.37)		(.26)
4 Early insomnia	.54			
11 Som anxiety	.52			
6 Late insomnia	.52			
2 Guilt feelings		.76		
3 Suicide		.75		
1 Dep mood	(.40)	.57		
7 Work/interests		.48	(.46)	
17 Loss of insight			.77	(.37)
8 Retardation			.70	
12 Gastrointestinal				.68
15 Hypochondria	(.31)	(.41)	(.33)	.59
13 General	(.35)		(.36)	.51
16 Weight loss				.41

In this general sample, insomnia was associated with anxiety in Factor 1. The second factor, with less than half the variance of factor 1, comprised depressed mood and work and interests (which seems to represent anhedonia), as well as the generally less common symptom of guilt. Suicide is included here. Good et al (1987) called the third factor 'cognitive impairment' but it is difficult to understand why. Although retardation does include loss of concentration, it mainly assesses observed slowness of movement and responsiveness, and to combine it with loss of insight and call it cognitive impairment may be explained by a cluster of 8 subjects with severe depression, physical disability, and moderate dementia in their sample. Using the criteria of Kivela and Pahkala (1988), this factor would have been discarded. Factor 4 includes somatic symptoms and hypochondriasis, but not somatic anxiety. The loadings for hypochondriasis on all four factors, and of general somatic symptoms on three factors, suggest that these two items are measuring some poorly defined and possibly complex concept.

There are few similarities between this solution and that of Kivela and Pahkala (1988). It appears that the association of depressed mood and work and interests is important; but beyond that, if factor solutions using these criteria can tell us anything, then it is that there is a different factor structure in the depressed group. However, the

criterion for inclusion of subjects in the study by Good et al (1987) was age alone, and the heterogeneity of the sample weakens the validity of the analysis and its generalisability to a depressed sample.

Onega and Abraham (1997)

The purpose of this study was to demonstrate the usefulness of the 17-item HAMD, not as a global measure of severity, but as a tool for the assessment of depressive symptomatology in an elderly population. Data from 206 adults aged 60 to 92 years (mean age 76.7; 70.3% female) were analysed. This was a community population, some of whom were psychiatric out-patients; others were participants in an Elder Outreach Program who may also have been psychiatric patients (although it is unclear from the publication). All the subjects in the study had a least one stable, chronic health problem. The HAMD scores ranged from 0 to 36 (mean score 13.3, SD 7.8). An orthogonal rotation was employed. Four factors, explaining 57.7% of the variance, were retained using the scree test and eigenvalues greater than 1. [Table 57]

This solution explains sufficient variance, although it might be argued that the fourth factor is unacceptably small. Factor 1 emphasises the importance of the symptoms of retardation and loss of energy in relation to depressed mood. (It is interesting that Onega and Abraham chose to label item 13 as 'anergia' even though this item includes other somatic symptoms, which suggests that loss of energy was the predominant symptom measured.) Factor 2 includes all insomnia items, along with gastrointestinal symptoms (which has also been re-labeled, minimising the contribution of GI medications and constipation). Somatic and psychic anxiety are associated in Factor 3 with hypochondriasis. It is suggested that Factor 4 represents the severity of depression, in that increased agitation may include '*decreased ability to concentrate, focus attention and problem-solve... thereby decreasing insight.*'

This solution, although explaining a similar variance using four factors, is strikingly different from that of Good et al, although the population appears superficially similar. In particular, the association of loss of insight with agitation on the fourth factor contrasts with the third factor in the Good et al solution (which loads loss of insight with retardation). Although all information to enable a comparison of samples is not available, differences in male to female ratio, physical health, and

psychiatric status may be responsible for the differences. The population in this study may also be more homogeneous; although the depression scores represent a range, the sample appears to have been drawn from a psychiatric population including a contribution from moderately to severely depressed people.

Table 57: factor structure of the HAMD (Onega and Abraham 1997)

Item	Factor 1 Depressed Affect (30.9%)	Factor 2 Vegetative symptoms (10.7%)	Factor 3 Anxiety (8.3%)	Factor 4 Agitation/ Insight (7.8%)
8 Retardation	0.78			
13 Anergia	0.73			
[general somatic symptoms]				
7 Work and interests	0.72			
1 Depressed mood	0.65			
3 Suicide	0.63			
14 Libido	0.54			
2 Guilt	0.52			
5 Middle insomnia		0.76		
4 Early insomnia		0.74		
6 Late insomnia		0.62		
16 Weight loss		0.62		
12 Loss of appetite		0.56		
[gastrointestinal symptoms]				
11 Somatic anxiety			0.82	
10 Psychic anxiety			0.76	
15 Hypochondriasis			0.68	
17 Loss of insight				0.84
9 Agitation				0.61

The authors point out that the factor structure *'shows little similarity with the factor solutions proposed by Hamilton'* in his younger adult psychiatric patients. There are, however, similarities with the depressed younger adult sample of Fleck et al, including the loading of retardation in a strong first factor containing general somatic symptoms, work and interests and depressed mood; the clustering of

hypochondriasis with psychic and somatic anxiety; and the loading of all three insomnia items in the same factor.

Onega and Abraham conclude that the HAMD is useful as a tool for assessing the main dimensions of the symptomatology of depression in 'community dwelling older adults' by using the separate factor scores to grade the severity of each cluster of symptoms.

The different approaches to factor analysis used by these authors make comparisons among them speculative. Insufficient explained variance in the analyses (particularly in that by Kivela and Pakkala) points to inadequate homogeneity. The sample used for the analysis by Good et al, coming from a population mainly without pathology, probably contained little variability and was not homogeneous in any respect other than age. The solution described by Onega and Abraham did not achieve simple structure, and the authors do not suggest that the HAMD used as a global measure is necessarily a reliable and valid method of assessing severity. The above factor studies should allow some comparisons to be made between depressed elderly people who are in relatively good health, and those with active physical problems seen in the present study. The structure described by Onega and Abraham, in particular, and the population studied, should enable some useful comparisons.

Medline and other searches produced no information concerning the factor structure of the MADRS in elderly people.

Summary of methods

A heterogeneous study population of 100 medical in-patients, aged at least 65 years, fulfilling the main criterion of GMS-AGECAT syndrome case level depressive illness, was determined to meet the minimum ratios necessary for reliable factor analyses. The MADRS and HAMD scale results from these patients were analysed for homogeneity using Cronbach's alpha, and the alpha coefficient was subsequently maximised through item deletion using SPSS procedure 'reliability'. Exploratory principal components analysis (PCA) was initially performed on the complete scales, using SPSS procedure 'Factor,' using Varimax orthogonal rotations, for comparison with other reports. Further analyses were undertaken after eliminating any items within the scales which failed to correlate at least 0.30 with any other item within the

scale (Kline 1994, Streiner and Norman 1995), and oblique rotations, using Direct Oblimin, were performed to determine relative independence of factors. Several iterations were attempted in order to achieve the best approximation to simple structure. Number of factors to rotate was decided using the scree test on factors with eigenvalues greater than one.

Separate analyses of the HAMD and MADRS scales will be discussed first to assess the validity of these commonly used scales in the measurement of depression severity in depressed elderly physically ill people. Analyses of all items from the two scales combined, which together contain a more complete range of symptoms and should help in identifying the underlying structure of the construct of depression in this population, will then be discussed.

Results: The Hamilton Depression Rating Scale

Internal consistency

The KMO measure of sampling adequacy was 0.55, which although low (scores in the 0.70's would be very satisfactory), is nevertheless still adequate (Norusis 1990).

The highest item-total correlation was for item 15 (hypochondriasis) at 0.40. Very low item-total correlations (0.07 or less) were calculated for guilt feelings, early and middle insomnia, work and interests, retardation, general somatic symptoms, libido, and insight [Table 58]. Cronbach's alpha for the 17-item HAMD was 0.46. Successive elimination of items to improve alpha [Table 59] resulted in a six-item scale with an alpha coefficient of 0.60. This maximum alpha coefficient was obtained by deleting all items except

- Middle insomnia
- Late insomnia
- Agitation
- Psychic anxiety
- Somatic anxiety
- Hypochondriasis.

A factor analysis of the items remaining after maximising alpha produced two factors, the second containing insomnia items only.

Table 58: corrected item-total correlations for HAMD scale items

<u>item</u>	<u>corrected item-total correlation coefficient</u>
1 depressed mood	.24
2 guilt	.07
3 suicide	.12
4 early insomnia	.07
5 middle insomnia	.02
6 late insomnia	.16
7 work and interests	.06
8 retardation	.05
9 agitation	.22
10 psychic anxiety	.19
11 somatic anxiety	.24
12 gastrointestinal	.23
13 general somatic	.05
14 libido	.04
15 hypochondriasis	.40
16 weight loss	.29
17 insight	-.05

Table 59: HAMD items deleted and associated alpha coefficients

<u>HAMD item</u>	<u>alpha</u>
17 loss of insight	0.48
7 work and interest	0.49
8 retardation	0.52
13 general somatic symptom	0.54
1 depressed mood	0.55
3 suicidal feelings	0.56
2 guilt feelings	0.57
14 loss of libido	0.58
12 gastrointestinal symptoms	0.59
4 early insomnia	0.60
16 loss of weight	0.60

Discussion

The alpha coefficient for the HAMD scale is unacceptably low: coefficient alpha should be at least 0.70 for a short scale if it is used as a measure of a single construct and reported as a global score (Streiner 1993). By comparison, in an out-patient volunteer sample of middle-aged women (N = 141), the alpha coefficient for the HAMD was 0.76 (Rehm and O'Hara 1985); although the self-selected sample would undoubtedly have inflated the alpha coefficient, in that sample the alpha was acceptable without being unreasonably high.

The items of the HAMD comprising the most homogeneous scale appear to be measuring anxiety. Alternatively, they may represent a so-called 'masked depression' where the main clinical features are somatic preoccupation with psychological and physical anxiety symptoms. However, it seems unlikely that the best scale for measuring depression in a physically ill elderly population would be one that primarily assessed agitated masked depression. Retardation appeared to be an important symptom among these depressed patients. In this sample, there was little evidence of 'hypochondriasis,' and depression did not seem to be 'masked' in any way. Seventy percent of patients acknowledged their depression, and the remaining patients admitted to depressed mood but attributed it to physical illness or external factors. A mild degree of hypochondriasis (scored 1 or 2) was present in 48% of patients, and absent in 37%. Although delusional hypochondriasis is an important symptom in severe depression in the elderly, and somatic presentations of depression are considered to be common, among this group hypochondriasis is more likely to represent the degree of physical illness present (Costa and McCrae 1985).

The item-total correlations suggest that preoccupation with bodily symptoms was influencing the scores to a greater degree than any other symptom. Although hypochondriasis has been noted to be more prevalent as a feature of depression in the elderly by some workers (Brown et al 1984, Gurland 1976, Steuer et al 1980), Costa and McCrae (1985) suggest that this may be solely due to the higher prevalence of actual somatic illness in this group. In young middle-aged women, the item-total correlation for hypochondriasis was 0.33 (Rehm and O'Hara 1985). In psychiatric in- and out-patients, Mobray (1972) found item-total correlations of 0.49 for women, and 0.31 for men. This result for men was the lowest reported item-total correlation.

These results do not appear strikingly different until other items are compared. In the younger samples, the item correlating highest with the total scores was in all cases HAMD 1 (depressed mood), with an item-total correlation of 0.63 (Rehm and O'Hara 1985) for young middle-aged women, and 0.79 for women and 0.76 for men (Mobray 1972).

Factor analyses

Using all items in the HAMD, and extracting factors with eigenvalues greater than 1, in order to make the analysis comparable with that of Kivela and Pakkala (1988) and their depressed elderly sample, Varimax rotation produced a six-factor structure which explains 63% of the variance in the scores. [Table 60] Four of the factors are interpretable.

Table 60: six-factor structure of the HAMD using all items

Item	Factor (variance)					
	1(15.9%) depressio n	2 (11.8%) insomnia	3 (11%) anxiety	4 (9.4%)	5 (7.9%)	6 (6.9%) hypochondriasis
1 Depressed mood	.82					
8 Retardation	.74					
7 Work and interests	.60		(-.32)			
12 Gastrointestinal	.43			(.39)		
6 Late insomnia		.75				
5 Middle insomnia		.75				
4 Early insomnia		.69				
9 Agitation			.82			
10 Psychic anxiety			.76			
3 Suicide				-.68		(.40)
17 Loss of insight				.67		
16 Weight loss	(.39)			.52		
14 Loss of libido					.82	
13 General somatic					-.66	(.33)
2 Guilt feelings		(-.31)			.50	
15 Hypochondriasis						.78
12 Somatic anxiety	(-.32)		(.45)			.55

Editing the solution according to Kivela and Pakkala results in the following four-factor structure [Table 61], accounting for 45% of the total variance in the scores:

Table 61: four-factor structure of the HAMD using all items, edited according to the criteria of Kivela and Pahkala (1988)

Factor	% variance	HAMD item	loading
1	15.9	depressed mood	.82
		retardation	.74
		work and interest	.60
		gastrointestinal	.43
2	11.8	late insomnia	.75
		middle insomnia	.75
		early insomnia	.69
3	9.4	suicidal feelings	-.68
		loss of insight	.67
		loss of weight	.52
4	7.9	loss of libido	.82
		general somatic	-.66
		guilt feelings	.50

As it has been established from the alpha coefficient that this scale failed to achieve homogeneity, this analysis is likely to be assessing separate constructs.

The initial solution [Table 60] is unsatisfactory due to the small number of items in the factors, and the multiple loadings. In editing this PCA to compare with that of Kivela and Pahkala, factors with only two items (3 and 6, together accounting for around 18% of the variance) would be eliminated, thereby losing agitation and psychic anxiety and reducing the explained variance of the factor solution to an unacceptable 45%. These small factors may represent separate constructs of anxiety and somatic preoccupation. (It is of course not clear how many factors Kivela and Pahkala originally extracted.)

Comparing the edited structure [Table 61] with that of Kivela and Pahkala (1988), the main differences observed between the depressed physically ill and the depressed well are as follows:

1. The first factor, grouping mood with anhedonia and retardation, is a representation of depression severity. In its loadings of depressed mood and work and interests, it bears a resemblance to the analysis of Kivela and Pahkala, and the amount of variance it explains is similar. It differs with the inclusion of retardation and gastrointestinal symptoms and the exclusion of psychic anxiety. Libido and general somatic symptoms are relegated from the first to the fourth factor.

2. Factor 2 is insomnia alone; no insomnia item loads even weakly on any other factor. Kivela and Pakkala (1988) found early insomnia to load on the second factor where it was associated with anxiety and hypochondriasis, and the other insomnia items loaded on the third factor where they were associated with guilt.

In the unedited factor structure, there is a negative secondary loading from guilt feelings on the second factor; whereas guilt, and middle and late insomnia, are positively correlated on the third factor in Kivela and Pakkala. This suggests that insomnia in this depressed physically ill population may not be arising from the same origins as in the depressed physically well.

3. Factor 3 negatively correlates suicidal feelings with weight loss and loss of insight. The failure of weight loss to load with gastrointestinal symptoms raises serious doubts about the validity of this structure. Kivela and Pakkala (1988) found weight loss to be positively correlated with loss of appetite and suicidal feelings (on factor 4), whereas in this analysis the negative association suggests a possible physical explanation for weight loss. Loss of weight also loads on factor one in the unedited structure, and suicide loads on factor 6. The correlation matrix showed weight loss to be moderately correlated with GI symptoms (0.30) and work and interests (0.29).

4. Loss of libido was rare in the present sample, with only 4% of depressed patients indicating that they experienced this symptom. Factor 4 may therefore be describing a very small group of patients who, in addition to complaining of loss of libido, did not report any general somatic symptoms. This bears no resemblance to the structure of the HAMD in the physically well elderly.

In the unedited factor structure, Factor 3 consists of agitation and psychic anxiety, a two-item factor that would be eliminated in the Kivela and Pakkala analysis. Indeed, agitation was also lost from their factor structure, but psychic anxiety appears in their Factor 1, associating anxiety with dysphoria. The loss of hypochondriasis and all anxiety items, which figured prominently in the item-total correlations, suggests serious weaknesses in the HAMD for use in this population.

The first two factors in the edited structure seem to have clinical relevance, but beyond those the structure is not easily interpretable. It can be tentatively concluded, however, that there are important differences in the symptom profiles of

physically well and physically ill depressed elderly adults. Kivela and Pahkala (1988) noted that, when analysed separately according to sex, there were some similarities and some clear differences in the correlations of items between men and women. The ratio of men to women in their total sample was 1:1.9; the ratio in the present study was 1: 3.2, which may be responsible in part for the observed differences.

These unsatisfactory solutions suggest that the data should be reanalysed, extracting a smaller number of factors. Inspection of the scree plot suggested that a five-factor solution, explaining 56% of the total variance, might be preferable and allow for the possibility of the elimination of small factors. However, to control some of the distortion, a more refined method would be to eliminate any items which have low item-total correlations, or for which there was inadequate sampling, or are identified from the matrix as having no significant correlation with any other items in the scale (Kline 1994, Norusis 1988) before proceeding to factor extraction. For clarity, this latter method was chosen.

Examination of the correlation matrix of HAMD items identified items that failed to correlate at 0.30 or greater with any other item. Three items (feelings of guilt, suicide, and loss of insight) each did not correlate with any other. MSA computed for individual items identified one item (libido) with an MSA of less than 0.4. These four items were excluded from the analysis (Kline 1994). The MSAs for remaining items were all above 0.50. The KMO for this matrix was a mediocre 0.62, somewhat better than the previous KMO for the full 17 items.

Initially, five factors were extracted with eigenvalues greater than 1, which together explained 65.3% of the variance. Oblique rotation demonstrated that the factors were uncorrelated [Table 62], and Varimax rotation was performed. [Table 63]

Table 62: factor correlation matrix, 13 HAMD items

Factor number	1	2	3	4
1				
2	-.035			
3	-.077	.079		
4	.123	.065	-.187	
5	.012	.159	-.171	.135

Table 63: five factor solution, 13 HAMD items, Varimax rotation

Item	Factors(variance)				
	1 (20.4%)	2 (15%)	3 (12.9%)	4 (8.8%)	5 (8.1%)
9 Agitation	.81				
10 psychic anxiety	.77				
11 somatic anxiety	.62		(-.48)		
5 middle insomnia		.85			
6 late insomnia		.84			
4 early insomnia		.46	(.44)		
1 depressed mood			.84		
8 retardation			.64		
12 gastrointestinal				.74	
16 weight loss				.64	
13 general somatic					.90
15 hypochondriasis	(.40)				.46
7 work and interests			(.42)		.42

Factor 1 loads all three anxiety items, with a moderately strong secondary loading for hypochondriasis. Factor 2 is insomnia: middle and late insomnia are highly correlated with this factor and early insomnia moderately so. Factor 3 is a two-item factor of depressed mood and retardation, with a secondary loading for work and interests. There is also a moderately strong negative loading for somatic anxiety, which indicates the independence of somatic anxiety symptoms from depressed mood. Factor 4 is another 2-item factor comprising gastrointestinal symptoms and loss of weight, with moderately strong secondary loadings for work and interests, and early insomnia. Factor 5 is a physical symptoms factor of three items: general somatic symptoms, which from the GMS data was presumed to be measuring loss of energy, loads very highly here; hypochondriasis, and work and interests load moderately. The loading for work and interests is probably related to the rating having included reduced activity.

This solution yielded five easily interpretable factors, but of necessity, with only 13 items, the factors are small; two factors, each containing only two variables, may represent independent constructs of retarded depressed mood, and gastrointestinal symptoms (mainly anorexia). The similarly-weighted loadings on two factors of hypochondriasis, work and interests, and early insomnia, suggest these items are partially related to various factors.

In pursuit of simple structure, a further analysis specifying a four-factor solution accounting for 57.1% of the total variance in the scores was carried out.

[Table 65] An oblique rotation produced a nearly identical structure, and the factor correlation matrix showed that the factors were uncorrelated [Table 64]

Table 64: factor correlation matrix, four-factor solution, 13 HAMD items

Factor number	1	2	3
2	.023		
3	-.139	.016	
4	.128	.164	-.074

Table 65: four-factor solution, 13 HAMD items

Item	Factor number (variance)			
	1 (20.4%)	2 (15%)	3 (12.9%)	4 (8.8%)
9 Agitation	.81			
10 psychic anxiety	.77			
11 somatic anxiety	.66			(-.43)
6 late insomnia		.80		
5 middle insomnia		.73		
4 early insomnia		.67		
7 work and interests	(-.30)		.60	(.34)
15 Hypochondriasis			.59	
12 Gastrointestinal			.59	
13 General somatic			.54	
16 Weight loss			.51	
1 Depressed mood				.84
8 Retardation			(.36)	.59

In this analysis, the first factor, accounting for the major variance, remains the anxiety factor, with negative secondary loading for work and interests, and a moderately strong secondary loading for hypochondriasis. This suggests an association between anxiety and physical illness or preoccupation with physical symptoms, and a negative correlation between loss of interest or reduced activity. Anxiety has featured strongly in these factor structures, comprising an independent homogeneous scale. The alpha coefficient suggests that what is measured is a separate construct, rather than a strong dimension of depression, in these patients.

The least ambiguous factor is Factor 2, which loads all insomnia items with no loadings (primary or secondary) from any other items. This separates sleep problems from physical symptoms, anxiety and depressed mood.

Factor 3 combines five variables: work and interests, hypochondriasis, loss of appetite, general somatic symptoms (loss of energy), and loss of weight. Retardation has

a moderate secondary loading on this factor. Factor 3 is most parsimoniously explained as a cluster representing symptoms of actual physical illness. Work and interests, which is the main item in this factor, could be considered a measure of anhedonia; an alternative explanation of this factor could be that depression in this sample is characterised by anhedonia (represented by H7: loss of interest in activities) which correlates with loss of appetite (i.e., disinterest in food) and manifests as loss of weight, and loss of energy (general somatic symptoms). General somatic symptoms, although discriminating between depressed and non-depressed groups, were common among the non-depressed patients; however, it is not possible to determine which somatic symptoms (e.g., energy loss, headache, muscle ache, etc.) were endorsed in the non-depressed group.

Factor 4 remains the same as in the previous extractions: depressed mood and retardation. This factor has a bipolar element, with a secondary negative loading of somatic symptoms of anxiety.

This analysis clearly separates depressed mood from anxiety symptoms and insomnia, and tends to support the exclusion of insomnia and anxiety items from the measurement of depression severity, given the very low homogeneity of the scale as demonstrated by the alpha coefficient. Depressed mood appears associated only with retardation (slowness of thought and speech, and decreased motor activity), and this factor is responsible for only 8.8% of the variance. Physical symptoms, which may represent clinical symptoms and signs of medical rather than psychological illness, or may represent anhedonia, appear to correlate only with each other, and retardation also correlates with these symptoms on Factor 3. Further ambiguity results from the inclusion of hypochondriasis on both the anxiety factor (with a secondary loading of 0.41) and on Factor 3 (with a loading of 0.59). The value of the hypochondriasis item, as demonstrated by its discriminatory power, is offset by its correlation solely with somatic anxiety, the endorsement of which was not significantly different between groups. Work and interests, loading on three of the four factors, is further source of confusion as it assesses a multitude of symptoms including cognitions and behavioural manifestations of incapacity, fatigue, weakness, listlessness, indecision, reduced activity and loss of interest. External validation of Factor 3 would be desirable, possibly through a measure of association with number of drugs or illnesses, or type of illness. Unfortunately, there is insufficient detail in the collected data to enable this type of analysis.

A comparison with the study by Onega and Abraham (1997) with a sample of similar age and male: female ratio (although the distribution of scores covered a greater range, which included many lower scores) demonstrates a fundamental divergence in the factor structure. Their first factor, with nearly 31% of the variance, included retardation, general somatic symptoms, work and interests, and depressed mood. The anxiety items and agitation appear in their Factors 3 and 4. There seems, therefore, to be a major influence from the physical illnesses of the medical in-patients on the variance distribution.

Factor scores

To illustrate the effect these factors have on the individual scores, all eleven subjects with the median HAMD total score of 21 were given unweighted factor scores for the 13 items retained in the analysis. (Total possible score of 40 on 13 items) [Table 65]

Table 66: factor scores for depressed subjects with HAMD median score of 21

subject	Factor			
	1 (anxiety)	2 (insomnia)	3 (physical)	4 (depression)
1	6	3	9	4
2	6	4	7	4
3	8	6	3	3
4	3	5	8	3
5	2	6	8	4
6	5	3	9	2
7	1	3	11	5
8	1	3	7	6
9	7	2	7	2
10	4	4	8	2
11	3	3	8	4

factor 1: range 1-8, median 4

factor 2: range 2-6, median 3

factor 3: range 3-11, median 8

factor 4: range 2-6, median 4

As can be seen from this table, the total score of 21 could have been made up of from 4.8% to 38% anxiety items; from 9.5% to 28.5% insomnia; and from 14% to 55% physical symptoms. Therefore, relief from anxiety and insomnia, combined with a small improvement in the physical symptoms (e.g., a reduction in worry about health, or improvement in general somatic symptoms) could lead to a reduction of at least 50% in the total score in over half these patients, without any influence from the core symptoms of depressed mood and retardation.

Confirmation of anxiety factor through validation with GMS-AGECAT anxiety scores

Validation of the anxiety factor from this analysis was undertaken by correlating the total scores on the three main items loading the factor from 50 randomly selected subjects in the sample with their GMS-AGECAT anxiety scores, 14 of which were case-level and 32 sub-case level. The median HAMD anxiety factor score was four (maximum possible score 12, range 0 - 9). Spearman's correlation coefficient between HAMD anxiety factor and AGECAT score was $r = 0.43$, $p = 0.002$ (95% confidence interval 0.17 to 0.63).

Conclusions

The HAMD total score should not be used as a global measure of depression severity in elderly, physically ill people due to its very low internal reliability, the major contribution of the anxiety and the insomnia variables, and the negligible correlations of four items with the other items in the scale. The HAMD does not contain sufficient clear measures of anhedonia, nor does it adequately assess dysphoria in this population. If a good outcome measure of depression severity in this population is required, it appears that items other than those used in the HAMD are necessary. This does not mean that sleep, appetite, symptoms of pain and weakness, and anxiety should be disregarded in a clinical assessment.

Results: The Montgomery-Asberg Depression Rating Scale

Internal consistency

The alpha coefficient for the 10 items of the MADRS in the depressed study population was 0.61. The most homogeneous scale was obtained by removing five items [Table 66].

Table 67: successive deletion of MADRS items to maximise alpha coefficient

<u>Item</u>	<u>alpha if item deleted</u>
reduced sleep	.66
inner tension	.68
pessimistic thoughts	.72
reduced appetite	.75
suicidal feelings	.77

The alpha coefficient for the remaining five items (apparent and reported sadness, difficulty with concentration, lassitude, and inability to feel) is 0.77. Although the initial MADRS alpha coefficient is insufficient to represent a single construct, the removal of five items leaves a short scale with a very good alpha coefficient and face validity as a measure of depression severity, although all core symptoms are probably not represented.

The five items retained in the scale after alpha was maximised, which had a good KMO of 0.77, were subjected to factor analysis. The result was a single factor which explained 54.4% of the total variance in the scores [Table 67].

Table 68: factor structure of five MADRS items with maximised alpha

<u>items</u>	<u>loading</u>
lassitude	.82
inability to feel	.79
apparent sadness	.74
inability to concentrate	.70
reported sadness	.61

The main diagnostic symptoms of reported dysphoria and anhedonia are associated with observed sadness, lassitude and concentration difficulties, consistent core symptoms of depression severity. Lassitude loads most strongly here, and could represent loss of energy, lack of motivation, or loss of interest. A different loading from 'inability to feel'

suggests that the two items are not assessing the same thing. 'Concentration difficulties' remains as an important item.

The corrected item-total correlations are shown in Table 68:

Table 69: corrected item-total correlations for MADRS items

<u>Item</u>	<u>Corrected item-total correlation coefficient</u>
1 apparent sadness	.50
2 reported sadness	.54
3 inner tension	.09
4 reduced sleep	.03
5 reduced appetite	.24
6 concentration loss	.39
7 lassitude	.48
8 inability to feel	.51
9 pessimism	.04
10 suicidal feelings	.32

The corrected item-total correlations were very low for pessimistic thoughts, inner tension and reduced sleep. The highest item-total correlations were apparent sadness, reported sadness, inability to feel and lassitude.

In a study of the reliability of the MADRS with 44 psychiatric in-patients (mean age 42.9), the corrected item-total correlations for individual items ranged from 0.12 to 0.84 (median 42.5) (Davidson et al 1986). Three of the correlations for this elderly group are substantially lower than those found for the psychiatric patients; Davidson et al noted correlations of 0.40 for inner tension, 0.26 for reduced sleep, and 0.45 for pessimism. Four other items also showed higher correlations among the psychiatric patients: apparent sadness 0.66; reported sadness 0.84, lassitude 0.61, and inability to feel 0.80. Two items demonstrated lower correlations among the psychiatric patients: reduced appetite 0.12, and difficulty concentrating 0.30. Only suicidal feelings had a similar correlation (0.29 in the psychiatric patients).

The results of the Davidson et al study suggest that the relationship of the MADRS items to the total scale is more consistent among the psychiatric patients than that seen in the elderly physically ill patients, making the MADRS more appropriate to that group. Davidson et al note, however, that the item assessing reduced appetite appeared to be poorly correlated with the remainder of the scale. They suggested that this might be due to the reduced range of scoring on the item, with no patient rated on the top two increments. This is not the case for the elderly patients, however: ratings on reduced appetite covered the full range of scores, as did reduced sleep and lassitude.

Factor analyses

The KMO for the 10-item scale was reasonably good at .67. Individual item sampling adequacy was low for inner tension (.39) and reduced sleep (.38), suggesting inadequate variability in the responses.

First extraction:

A Direct Oblimin rotation produced a correlation matrix demonstrating the independence of the three factors with a total variance of 58.6% [Table 69]. An orthogonal rotation was then performed [Table 70].

Table 70: correlation matrix for 3-factor MADRS solution, oblique rotation

	Factor 1	Factor 2
1		
2	.126	
3	.012	-.075

Table 71: MADRS 3-factor solution, Varimax rotation

Item	Factor		
	1: 29.7%	2: 15.3%	3: 13.6%
7 Lassitude	.85		
8 Inability to feel	.79		
1 Apparent sadness	.72		
6 Concentration	.70		
2 Reported sadness	(.42)	.72	
3 Inner tension		.68	
10 Suicidal feelings		.67	
4 Reduced sleep		(.32)	.78
5 Reduced appetite			.66
9 Pessimism			-.58

Factor 1 appears to be an anhedonia factor, with very strong loadings for both lassitude and inability to feel. Factor 1 also loads difficulty with concentration and apparent sadness. Factor 2 appears to be a dysphoria factor. The final factor is made up of the two somatic variables, which correlated only with each other; and pessimism (which was endorsed infrequently), the strongest correlations of which were 0.18 with apparent sadness and -0.19 with reduced sleep, has a negative loading.

Second extraction

The second analysis was carried out after removing the items that demonstrated very low correlations (<0.30) with any other items: M9 (pessimism) and M5 (appetite),

and also M4 (reduced sleep) which correlated only with reduced appetite at 0.295. The resulting matrix of data had good sampling adequacy (KMO .72). Two factors, accounting for 60.2% of the variance, were extracted [Table 71]. Oblique rotation demonstrated the absence of correlation between the two factors (0.195); therefore Varimax rotation was used.

The resulting two factors suggest depression characterised by two dimensions: loss of interest and reported dysphoria.

Table 72: 2-factor solution, 7 MADRS items, Varimax rotation

factor	% variance	MADRS item	loading
1	41.1	Lassitude	.85
		Inability to feel	.80
		Apparent sadness	.71
		Concentration loss	.70
		(reported sadness)	(.41)
2	19.1	Inner tension	.76
		Reported sadness	.72
		Suicidal feelings	.66

Discussion

The internal consistency of the MADRS, in its 10-item form, while considerably better than the HAMD, is improved by the removal of the somatic items. Silverstone (1990b) noted that the MADRS scores in seriously ill adult medical in-patients were significantly affected by the contribution of somatic items (defined by him as sleep, appetite, concentration loss, and lassitude) within the scale. There is no evidence from this analysis that concentration difficulties are irrelevant in the assessment of depression in the physically ill elderly, nor that lassitude should be disregarded. Sleep and appetite difficulties, however, appear to confound the assessment, correlating only weakly with other items and adding little to the internal consistency.

Inner tension, which is the main item in Factor 2 (and which is similar to psychic anxiety in the HAMD) was widespread in this group of depressed medically ill patients, with endorsement in 88%, but it correlates weakly with the other items within the scale, and the alpha coefficient is improved by its removal. Inner tension appears in part to reflect dysphoria, judging by its association with reported sadness and suicidal feelings.

Pessimism and suicidal feelings have been noted to be relatively infrequent in depressed medically ill patients (House 1988, Moffic and Paykel 1975), although discriminatory for severe depression. Interestingly, the MADRS analysis retained the suicide item, which was discarded from the HAMD analysis. As previously noted, the MADRS suicide item is more moderately phrased than the more severe HAMD responses. Also, the correlation of suicide in the MADRS scale is with reported sadness and not apparent sadness; and in H1, the more severe rating is concerned with observed depressed mood.

Apparent sadness (as observed by the interviewer) and reported sadness are clarified as independent by the factor analysis, which places these items in separate factors. Neither of these items is necessary for a diagnosis of depression to be made, as MADRS item 8 (inability to feel) assesses loss of pleasure or interest (anhedonia). If ageing is associated with loss of reactivity, then this clinical picture seems more likely in an elderly person, a conclusion reached by Lawton et al (1996). This supports the MADRS as a more suitable scale in this population. The scale does, however, contain very few items measuring dysphoria.

Conclusions

Neither the HAMD nor the MADRS in the present version seems likely to be able to assess depression severity well in this population. The MADRS may inadequately measure dysphoria. The HAMD appears to contain too many items assessing anxiety and insomnia, and too few which measure anhedonia. Both factor structures leave large amounts variance unexplained, which may be the result of measurement error or 'noise' from confounding variables, or due to inadequate association among items. The latter is most likely in the HAMD, as the internal consistency is low.

Results (V): Factor Structure of Depression using Combined Scale Items

Exploratory principal components analyses on the combined items from both scales were carried out to help clarify the dimensions of depression present in elderly physically ill patients and assess the importance of individual items.

Predictions

An ageist model of symptoms of depression might predict that insomnia, work inhibition, retardation, loss of appetite, general somatic symptoms, and concentration difficulties would cluster in a factor which represented the effects of ageing, but would be unrelated to affect. Disengagement models might add inability to feel to this factor. A model of somatic symptoms representing physical illness might predict that work inhibition, retardation, insomnia, somatic anxiety, loss of appetite, general somatic symptoms, hypochondriasis and loss of weight would cluster in a factor which represented illness, also primarily unrelated to affect. However, correlations already performed on this data strongly indicate that none of these models represents the structure of depression as measured in these physically ill patients.

Inclusion and exclusion of items

Some items were dropped from the analyses *a priori*, as examination of the correlation matrix revealed redundancies. Where items were virtual duplicates of each other (as shown by the very strong correlation coefficients between them), retention of both would artificially increase the homogeneity of the scale and distort the factor structure. In these cases the most discriminating item, as shown by the 99% confidence interval, was retained. [Table 73]

Table 73: items included and excluded in combined scale analyses

<u>Item excluded</u>	<u>Item retained</u>	<u>correlation</u>
H2 guilt feelings	M9 pessimism	.82
H3 suicide	M10 suicidal feeling	.86
H12 gastrointestinal symptoms	M5 reduced appetite	.66
H1 depressed mood	M1 apparent sadness	.63
“	M2 reported sadness	.48
H7 work and interest	M7 lassitude	.72
“	M8 inability to feel	.64
H4 early insomnia	M4 reduced sleep	.63
H5 middle insomnia	“	.63
H6 late insomnia	“	.64

H1 (depressed mood) was rejected, as it combines reported and observed mood, and the independence of apparent and reported sadness had been demonstrated. H7 (work and interest) was excluded due to the dual nature of the item, as it assesses both anhedonia and the possible behavioural manifestation of loss of interest, i.e., decrease in activity. These were felt to be covered by M7 (lassitude) and M8 (inability to feel).

Insomnia items were treated in three ways: first, all HAMD insomnia items were removed, and the M4 'reduced sleep' retained in an attempt to force any association of insomnia with depression items to become clear; second, early and late insomnia were retained in lieu of the other two sleep items, as these two had some demonstrated independence, and the possibility that each was associated with a different dimension of depression had to be considered; and third, no insomnia item was retained, as correlations with other items in the scales were very weak, the only notable positive correlation being one of just under 0.30 between reduced appetite (M5) and M4 (reduced sleep).

All anxiety items (agitation, psychic anxiety, somatic anxiety, inner tension), and hypochondriasis (which correlated only with somatic anxiety) were retained. In the resulting correlation matrix, M9 (pessimism) failed to correlate at 0.30 or above with any other item, and was dropped prior to factor analysis. There were no correlations above 0.80, which would have suggested redundancies. The initial analysis, therefore, used 15 items.

Internal consistency

The corrected item-total correlations for the scale are shown in Table 74.

Table 74: corrected item-total correlations for 15 retained combined scale items

<u>Item</u>	<u>corrected item-total correlation coefficient</u>
H8 retardation	.35
H9 agitation	.16
H10 Psychic anxiety	.23
H11 Somatic anxiety	.20
H13 General somatic	.21
H15 hypochondriasis	.26
M1 Apparent sadness	.41
M2 Reported sadness	.49
M3 Inner tension	.25
M4 Reduced sleep	.10
M5 Reduced appetite	.29
M6 Concentration loss	.35
M7 lassitude	.42
M8 Inability to feel	.52
.10 Suicidal feelings	.27

The low item-total correlations for M4 demonstrate that the item is contributing little to this scale, which is predictable from the correlations.

The alpha coefficient for the revised scale containing 15 items was .675. Successive deletion of items to maximise alpha resulted in a six-item scale with an alpha coefficient of 0.80. [Table 75]. Removing psychic anxiety, inner tension and hypochondriasis was responsible for the more significant increases in the alpha coefficient.

Table 75: items removed from combined scale to maximise alpha coefficient

<u>Item</u>	<u>associated alpha when item removed</u>
M4 reduced sleep	.696
M5 reduced appetite	.698
H11 somatic anxiety	.699
H9 agitation	.707
H10 psychic anxiety	.722
M3 inner tension	.754
H15 hypochondriasis	.781
M10 suicidal feelings	.797
H13 general somatic	.800

The most homogeneous group of items contains the following:

- H8 retardation
- M6 concentration loss
- M7 lassitude
- M8 inability to feel
- M1 apparent sadness
- M2 reported sadness

Factor structure

Fifteen items were subjected to PCA. Four factors, accounting for 59.7% of the variance, were rotated; oblique rotation indicated that factors were uncorrelated (the largest between-factors correlation being 0.178), so Varimax rotation was used.

[Table 76]

Table 76: 4-factor solution, 15 combined scale items, Varimax rotation

factor	% variance	item	loading
1	24.4	M7 lassitude	.84
		M8 inability to feel	.78
		H8 retardation	.74
		M1 apparent sadness	.65
		M6 concentration loss	.64
		H13 general somatic	.55
		(M2 reported sadness (M5 reduced appetite)	.35) .32)
2	17.4	H10 psychic anxiety	.76
		M3 inner tension	.74
		H9 agitation	.73
		H11 somatic anxiety	.72
		(H15 hypochondriasis	.38)
3	9.8	M10 suicidal feelings	.73
		M2 reported sadness	.73
		(M1 apparent sadness	.38)
		(M4 reduced sleep	.32)
4	8.0	M4 reduced sleep	.77
		M5 reduced appetite	.70
		H15 hypochondriasis	.50

This structure suggests that there are these dimensions: anhedonia, anxiety, dysphoria, and somatic. Anhedonia appears as the largest and most important factor. Factor 2 includes a secondary loading for hypochondriasis, which correlates in the

matrix only with somatic anxiety. Factor 3 appears to represent dysphoria, which is under-represented by items. Sleep and appetite disturbances form a factor, along with hypochondriasis, suggesting a somatic explanation. However, while reduced sleep is also associated with dysphoric mood in Factor 3, and negatively with anhedonia in Factor 1, reduced appetite is positively associated with Factor 1. In this structure of uncorrelated factors, general somatic symptoms (H13, representing loss of energy), lassitude (M7), concentration loss (M6) and retardation (H8) are not associated with the somatic symptoms of loss of appetite and sleep disturbances which may, therefore, be symptoms of physical illness.

This solution is less than satisfactory due to the multiple loadings, and the presence of a factor containing only two variables. A three-factor solution would explain insufficient variance, however. These items were reanalysed, substituting early and late insomnia (H4 and H6) for reduced sleep (M4), to attempt to force any specific sleep-related factors to emerge.

A five-factor solution, accounting for 64.8% of the total variance, resulted in two single-item factors: Factor 3 (suicidal feelings 10%) and Factor 5 (hypochondriasis 6.7%). A four-factor solution was specified. Oblique rotation demonstrated uncorrelated factors [Table 77], and Varimax rotation was employed. [Table 78]

Table 77: factor correlation matrix, 16 combined scale items, oblique rotation

<u>Factor number</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>
1			
2	-.03		
3	.00	.12	
4	-.04	-.03	.05

Table 78: 4-factor solution, 16 combined scale items (including early and late insomnia)

Factor	item	loading
1	M7 lassitude	.83
	M8 inability to feel	.76
	H8 retardation	.75
	M1 apparent sadness	.67
	M6 concentration loss	.63
	H13 general somatic	.55
	(M5 reduced appetite (M2 reported sadness	.44) .37)
2	H10 psychic anxiety	.79
	M3 inner tension	.74
	H9 agitation	.73
	H11 somatic anxiety	.70
	(H15 hypochondriasis	.38)
3	M10 suicidal feelings	.73
	M2 reported sadness	.69
	(H15 hypochondriasis	-.34)
	(M1 apparent sadness	.33)
	(H4 early insomnia (M3 inner tension	.32) .30)
4	H4 early insomnia	.78
	H6 late insomnia	.64
	M5 reduced appetite	.54
	H15 hypochondriasis	.39
	(H11 somatic anxiety	.30)

Exchanging reduced sleep for early and late insomnia does not affect the first two factors. Changes are mainly seen in the third factor in the secondary loadings: the introduction of a negative loading for hypochondriasis, a positive loading for inner tension; and the loading of early insomnia only. Factor 4 still loads the sleep and appetite items and hypochondriasis, but now includes a secondary loading for somatic anxiety. This suggests that preoccupation with physical symptoms is associated with disruption of sleep and appetite; but also, that only initial insomnia (and not interrupted sleep or early waking) is related to reported depressed mood. The multiple loadings for hypochondriasis again cast doubt upon the utility of this item, at least in its present form.

The decision was taken to eliminate any sleep items, and loss of appetite, from further analyses, due to their low correlations with other items. At this stage, the hypochondriasis item (H15) was excluded from further analyses: although discriminating well between depressed and non-depressed patients and therefore useful for screening, the multiple loadings which appear in the factor structure

suggest that the item represents several different dimensions, and its association with sleep and appetite disturbance (and demonstrated lack of association with depression severity) emphasises the limits of the item. Reliability analysis demonstrated that the alpha coefficient increases to 0.75 if hypochondriasis is excluded.

Exploratory factor analysis was undertaken using the remaining 12 variables.
[Table 79]

Table 79: 12 HAMD and MADRS items used in exploratory factor analysis

H8	retardation
H9	agitation
H10	psychic anxiety
H11	somatic anxiety
H13	general somatic
M1	apparent sadness
M2	reported sadness
M3	inner tension
M6	concentration loss
M7	lassitude
M8	inability to feel
M10	suicidal feelings

The associated alpha coefficient for these items is .696, indicating that together they constitute a scale approaching an acceptable level of homogeneity (or, if the more lenient criterion of >0.50 is accepted, a very satisfactory level). This level of alpha indicates that 30% of the measured variance is due to random error.

Three factors explaining 59.8% of the total variance were extracted and rotated obliquely. The correlation matrix demonstrated independence of the factors [Table 80] therefore Varimax rotation was used [Table 81].

Table 80: correlation matrix from oblique rotation, 12 combined scale items

	Factor 1	Factor 2
Factor 1		
Factor 2	-0.10	
Factor 3	-0.20	-0.08

Table 81: 3-factor solution, 12 HAMD and MADRS items

Factor	% variance	scale item	loading
1	29.6%	M7 lassitude	.85
		M8 loss of interest	.79
		H8 retardation	.70
		M6 loss of concentration	.63
		H13 general somatic	.62
		M1 apparent sadness	.59
		(M2 reported sadness	.36)
2	20.8%	H10 psychic anxiety	.78
		M3 inner tension	.77
		H9 agitation	.72
		H11 somatic anxiety	.71
3	9.4%	M10 suicidal feelings	.83
		M2 reported sadness	.65
		(M1 apparent sadness	.48)

These three factors are relatively pure, with the exception of two items: apparent sadness and reported sadness. Apparent sadness loads moderately strongly on both Factor 1 and Factor 3, and reported sadness, strong in Factor 3, also loads moderately on Factor 1 but is without doubt a marker for Factor 3. Factor 3 is reported sadness and suicidal feelings. It was considered earlier that 'suicidal feelings' was possibly not be a separate item so much as a more severe rating for M2. There is, in any case, a dearth of items to assess dysphoria.

This solution suggests that depression as measured by these items consists of two dimensions: anhedonia, which is observable as retardation and apparent sadness, and is reported by the patient as manifesting as motivational difficulty, lack of ability to concentrate, and loss of energy; and second, the patients' own report of sadness and low mood, and which includes feelings of life not being worth living. This third factor, which is called dysphoria, is under-represented by items that assess expressed feelings.

The anxiety items form their own factor, which was predictable from the lack of correlations of anxiety items with any other. The alpha coefficient suggests that anxiety as measured by these items in this context may well be a constituent of the depression construct, but removal of all anxiety items increases the alpha coefficient for the remaining 8 items to 0.78.

Taking out psychic and somatic anxiety and agitation results in a two-factor solution explaining 55.1% of the variance. Oblique rotation confirmed that the two factors are uncorrelated (0.13). Varimax rotation was performed. [Table 82]

Table 82: 2-factor solutions, Varimax rotation, of 9 combined scale items

Factor	% variance	scale item	loading
1	38.8%	M7 lassitude	.84
		M8 loss of interest	.76
		H8 retardation	.74
		M1 apparent sadness	.74
		M6 concentration loss	.66
		H13 general somatic	.45
		(M2 reported sadness	.57)
		(M10 suicidal feeling	.45)
2	16.4%	M3 inner tension	.72
		M2 reported sadness	.60
		M10 suicidal feeling	.60
		(H13 general somatic	-.34)

Factor 1 on its own has an alpha coefficient of 0.79. The alpha for Factor 2 is .54 and is improved to 0.58 by the removal of M3. The items in the first factor, then, are apparently assessing a single construct, whereas the second factor is less specific.

Discussion

The analysis of the combined scale items, covering a wider range of symptoms than contained in the scales separately, allows for a more meaningful interpretation of the structure of depression in this group of patients, and demonstrates that neither the HAMD nor the MADRS assesses a complete range of the symptoms of depression which are relevant in elderly physically ill people.

Lassitude, motor retardation, and loss of energy are meaningful somatic symptoms; and concentration loss is also part of the construct of depression in this sample. Apparent sadness is valuable because it appears to be able to identify anhedonic patients. Reported dysphoria and reported anhedonia both should be

represented. Some measurement of anxiety symptoms is valuable, but should not be over-represented, or should be assessed entirely separately.

DSM-III-R criteria symptoms of major depressive disorder in a sample of over 600 people over the age of 75, one-third of whom had some degree of dementia, and approximately 8% of whom were diagnosed as depressed, were analysed using principal components (Forsell et al 1993). The study reported items that loaded at 0.40 or greater on two factors, accounting for 44% of the variance, using Varimax rotation. Factor 1, accounting for 29% of the total variance, included loss of interest, psychomotor change, loss of energy, and disturbance of thinking and concentration. The authors describe this factor as representing disturbance of motivation. Factor 2, with 15% of the variance, loaded dysphoric mood, appetite disturbance, guilt, and thoughts of death; this factor is described as representing mood disturbance. Sleep disturbance was discarded as it had low loadings on both factors. Probably because this was a heterogeneous sample, there is much variance unaccounted for by the two factors. There are, however, fundamental similarities with the present study to be seen in the structure. Specifically, sleep was found to be not systematically related to the other items; the first factor in both cases included items relating to loss of motivation and interest; and the second factor contains reported low mood and suicidal feelings. The additional symptoms assessed in the present study (observed sadness and lassitude) have a valuable added contribution to make to the evaluation. Other studies of the symptoms of depression in various populations (students, psychiatric patients, normal adults) have also noted a lack of significant correlations of sleep items with others (Gjerris et al 1983, Watson et al 1995a).

The tripartite model of anxiety and depression of Clark and Watson (1991) divided symptoms into those specific to anxiety, those specific to depression, and a third group of symptoms relatively non-specific and shared by both affective conditions. The anxiety construct mainly consisted of items measuring high autonomic arousal, such as trembling and hyperventilation, but also included a range of other somatic items such as lump in throat, nausea, and trouble staying asleep. In a factor analysis of the Mood and Anxiety Symptom Questionnaire, Watson et al (1995b) noted that none of the anxiety symptoms loaded significantly on the anhedonia factor and suggested that *'These findings strongly support the*

identification of this dimension as a specific depression factor that is unrelated to anxiety.'

Clark and Watson (1991) proposed a two-factor model of depressive symptoms. Low positive affect, which is the best discriminator of depression and specific to depression, is characterised by lack of pleasurable engagement in the environment, disinterest, low motivation, social withdrawal, crying spells, and suicidal ideation. High negative affect, a more general and non-specific manifestation related to both anxiety and depression, includes symptoms such as pessimism, anxiety, feelings of inferiority and rejection, somatic complaints, general distress, worry, negative evaluations of self and others, and low self-esteem. Positive affect and negative affect are relatively independent.

Clark and Watson (1991) suggested that the profile of negative affect (or general distress) *'may be greater in milder levels of the syndrome.'* of depression. Since depression in medical patients is on the whole less severe than that seen in psychiatric populations, and there is a high prevalence of anxiety symptoms in medical patients, it might be concluded that symptoms of general negative affect would therefore dominate the symptoms seen in depressed elderly medical patients. This was apparently not so in this sample of elderly physically ill patients. The lack of pure items assessing high negative affect no doubt influenced the results seen here. Items measuring guilt and pessimism (H2 and M9) include feelings of failure, self-reproach, and self-deprecation. High levels of guilt were uncommon, but around a third of depressed patients (three times the proportion of non-depressed) were rated positively on these items. A restructuring of items assessing feelings of failure or pessimism might be useful. The HAMD item measuring psychic anxiety includes irritability and worrying, which could be separately assessed. Somatic complaints other than loss of energy (which are combined in H13) might also be better addressed individually.

The tri-partite model does appear to be highly appropriate in the present sample. The exploratory factor analyses demonstrate the independence of a valid anxiety factor; and also separated depression items into a factor clearly representing anhedonia (which would be labeled 'low positive affect' by Clark and Watson), and a less specific dysphoria factor, which Clark and Watson would label 'negative affect or

general distress,' and which overlaps to some extent with both anhedonia and anxiety. This model of depression and anxiety symptoms was confirmed in a psychiatric sample by Fischer and Goethe (1997), who demonstrated the internal consistency of and moderate correlations among four factors (core depression, anxiety-suspiciousness, somatic concerns, and psychosis) derived from the combined items of the HAMD, the Hamilton Anxiety Scale, and the Brief Psychiatric Rating Scale. The correlations between factors in the current study were extremely low, much lower than those seen in the younger samples.

Conclusions

Appetite and sleep disturbances appear to be unrelated to the construct of depression severity in this population and should be assessed separately. Loss of energy should be assessed by a pure item. Observed retardation, concentration loss and lassitude should be assessed. The addition of items assessing dysphoria could improve the validity of a depression severity rating scale: an item concerning crying would be a useful addition; the item concerning suicidal and nihilistic feelings might helpfully be expanded. The possibility of assessing affect using three separate global scales for anxiety, negative affect or dysphoria, and lack of positive affect or anhedonia should be investigated.

Interviews with depressed patients were conducted to gain further information regarding relevant symptoms, and are analysed in the following section.

Chapter 5: Interviews -- qualitative analysis

'... much is to be learned from studies of the symptom experiences of men and women in the course of everyday life, including naturalistic studies that probe the phenomenology of depression from the perspective of subjects drawn from community rather than clinical samples, exploring what it means, from a lay perspective, to feel depressed and attempt to clarify under what circumstances the experience of depression leads one to seek or not seek help from informal or formal help givers' (Newmann 1989).

This quotation from Newmann was the starting point from which the qualitative research was undertaken. This section comprises the analyses of in-depth interviews recorded with eight people who were or had very recently been depressed. The systematic evaluation of interview data from selected individuals was intended not only to validate some of the findings from the quantitative data, but also to suggest areas of importance to the respondents which may not have been addressed in work derived from studies of younger and physically well people.

Qualitative research is fundamental to the development of scales that are intended to assess domains that include subjective experience inaccessible to direct observation and measurement. The preceding quantitative analyses have shown that the scales commonly used to measure depression severity, developed with younger samples and psychiatric patients, may be measuring symptoms irrelevant in elderly adults with physical illness. There is also the possibility that areas of symptomatology relevant to the older adult are being ignored in current measures. As noted by Streiner (1993), in his paper discussing the evaluation of rating scales in psychiatry, the motivation for the development of new instruments to measure clinical phenomena is the finding that current scales fail to address symptoms and signs that are observed to be important. In an area as complex as the measurement of severity of depression in elderly people in whom comorbid disorders may distort the meaning of many signs and symptoms, the subjective experience of the patient may be central to assessing severity. A scale initially developed from the reports of patients, rather than from theory, empirical research, or the possibly biased opinions of experts, is more likely to contain domains of importance to the people who are being assessed. As Streiner (1993) observed, 'Clinicians may see the behavioural manifestations of a

disorder, but only the patient is able to report on the subjective elements. Quite often, it is these aspects...[that] provide the best clues about severity.'

Grounded theory methods were used to develop a social constructionist analysis that allowed an understanding of patients' beliefs concerning their own situations to be explored, rather than approaching them from a clinical perspective. From this point, the direction for more accurate identification and assessment of depression can be determined. The qualitative approach acknowledges and makes use of the close relationship between researcher and respondents. Although apparently more subjective and reliant upon individual interpretation than quantitative analysis, the ability to reduce subjective experiences to numbers does not make the numbers (which were, after all, the researcher's numerical interpretation of the respondent's report) more valid than the original verbal data. The researcher does, of course, approach the interviews and analysis with a personal theoretical perspective based upon interests and background, but this is also true when formulating research hypotheses for quantitative studies.

As in all human communication, it is not possible to know exactly to what extent the understanding of interviewer corresponds with the meaning intended by the respondent. The awareness and acknowledgment of this basic difficulty of research, however, at least allows for it to be taken into account. Speculation is recognised to be an important part of the qualitative research process. During this research, an analytical log was maintained throughout. This comprised an outline of topics discussed at each interview, reflective notes on and critical examination of the questions asked and the ideas emerging from the interviews, the development and revision of themes and how these changed and became focused with the collection of data.

In preparation for this qualitative aspect of the research, two residential workshops on qualitative research methods for psychologists, organised by the Department of Human Sciences, Brunel University, were attended.

Respondents

Unlike quantitative methods, which require large, randomly selected samples, qualitative research focuses on relatively small samples selected purposefully in order

to understand a particular sample of people well (Patton 1990). The intention is not generalisability, but an in-depth exploration of individuals. While respondents were chosen partly as a representative sample in terms of age and sex, severity of physical illness, features of depression, and living arrangements, the overriding criterion for selection was the access of the respondent to relevant information. Interview subjects were theoretically sampled: chosen serially to expand upon information, searching for negative examples as well as confirmation and elaboration of material as each interview was completed and analysed. (Crabtree and Miller 1992).

Seven respondents had been diagnosed as depressed while hospital in-patients and had taken part in a placebo-controlled antidepressant trial; the eighth was chosen from the community as an example of someone who recognised her depression and sought help. Interviews were requested from nine people; one person, a single woman of 76 years being treated with paroxetine for depression by her GP, refused to be interviewed because she did not want to be recorded. All respondents were well known to the interviewer, with whom a rapport and trust had been developed over a minimum of six encounters totaling at least five hours over at least nine weeks. This ensured as far as possible that disclosure was not influenced by the need for self-presentation and social desirability, that the information in the interviews were private rather than public accounts.

In addition to patients' reports concerning their subjective experiences of depression, information concerning the important issue of why the majority of geriatric medical patients with depression had not asked for any professional help was sought.

Table 83 summarises the characteristics of the respondents. Pseudonyms have been used.

Table 83: interview subjects

SUBJECT	sex	age	status	arrangements
1 Mrs. Adams	f	84	widowed	sheltered, alone
2 Mrs. Perry	f	82	widowed	sheltered, alone
3 Mrs. Vine	f	70	widowed	own home, alone
4 Mr. Elliot	m	88	widowed	sheltered, alone
5 Mrs. Ball	f	85	widowed	own home, w/daughter
6 Mr. Lawrence	m	80	married	own home, w/wife
7 Mrs. Rose	f	89	widowed	sheltered, alone
8 Mrs. Ryan	f	78	widowed	with daughter's family

subject no.	baseline			rx	depression status when interviewed
	MMSE	HAMD	MADRS		
1	27	19	23	placebo	resolved
2	23	20	22	placebo	depressed
3	26	18	28	fluoxetine	resolved
4	20	19	21	fluoxetine	relapsed
5	28	20	28	placebo	depressed
6	27	24	32	fluoxetine	depressed
7	28	16	20	imipramine	resolved
8	24	20	20	fluoxetine	resolved

subject	acute illness	chronic illness
1	carcinoma lung, bone metastases	none
2	haematuria, bleeding PR	COPD, LVF
3	collapse, pressure sores, UTI dehydration, ischaemic toes, viral infection	IHD, PVD, TIA, glaucoma Parkinson's disease, pernicious anaemia
4	exacerbation of COPD and infection	severe COPD, CHF, IHD, partial deafness
5	exacerbation CHF	multiple cardiac problems, diverticular disease
6	cellulitis and ulceration lower leg	COPD
7	none	diverticulitis, IHD, sciatica, TIA
8	stroke	arthritis, recent hip replacement

COPD: chronic obstructive pulmonary disease

LVF: left ventricular failure

TIA: transient ischaemic attacks

PVD: peripheral vascular disease

CHF: congestive heart failure

IHD: ischaemic heart disease

UTI: urinary tract infection

Methodology

Interviews were recorded on a Sanyo 2550 Executive Talk-book portable tape recorder. Interviews were loosely structured and generally began with an open-ended question along the lines of 'tell me how you've been feeling...' Although open-ended, all interviews lasted approximately one and a half hours.

Theoretical areas to address were kept in mind, and questions to pursue were noted as they occurred. Although in-depth interviews have been characterised as '*directed conversations*' (Lofland and Lofland 1983), the topics discussed were determined mainly by the respondents. Attempts by the interviewer to steer the interviews along predetermined lines were only partly successful, as respondents invariably returned repeatedly to subjects which were important to them. For example, Mrs. Vine, when asked 'When you were feeling particularly bad, what was the worst thing about it, what did you find hardest to cope with?' replied: '*Well, I don't think I told you this, I didn't know whether it was relevant in any way: when I was about 25 or 26, after my first husband had died, well, nobody advised me not to make any decisions...*' and continues with a long (74 line) history of family relationships.

Interviews took place in the respondents' normal place of residence (at home for all except Mrs. Ryan, who was in a rehabilitation ward).

Informed consent

All respondents were personally given printed information in the form of a letter asking for a recorded interview, and were explicitly told at the beginning of their interview that it was being recorded, that transcripts would be made, and that pseudonyms would be used.

Quotations

Editing was kept to an absolute minimum to improve readability without distortion of meaning. Within the text, questions from the interviewer are enclosed in brackets, and quotations are identified with reference to the complete transcripts by interview number, page number, and lines (e.g.: 2/2/16-29) following the quote.⁹

⁹ Full transcripts are available on application to the author through the Department of Geriatric Medicine, University of Liverpool

Analysis¹⁰

Interviews were transcribed with the aid of a Sanyo Memo-Scriber TRC 9010 by the interviewer, and transcripts line-numbered, as soon as possible after completion. Line-by-line coding took place as soon as possible after recording and transcription.

Open coding

Transcripts were minutely examined in order to deconstruct the interview and minimise the effect of preconceived theories. Key statements were identified which were labeled as low-level, fairly concrete categories that explained the data in detail (for example, appetite, housing, coping, worry, frustration, etc.). Although coding was open, the research questions suggested codes for the data.

Analysis was done congruently with data collection, with constant development and revision of categories, identification of areas that had yet to be addressed, and questions as they arose. Confirmation or disconfirmation was sought from successive respondents, and themes that began to emerge were continually compared among cases between interview data and evolving explanations.

Axial coding

Codes were reexamined, analysed, and condensed into categories: social relationships, emotional symptoms of depression, somatic symptoms, self-description, explanations of aetiology, relationships with doctors, previous history, getting help, physical illness, anxiety, getting old, preventing depression; and links between and among categories were explored.

Conceptual categories, more abstract than the original coding, with the potential for integration into a theoretical framework, were defined. Categories resolved into four main areas: self-perceptions, explanations of aetiology of depression, the experience of depression as an abnormal state, and communication with health professionals.

¹⁰ For further detail of the theoretical aspects of grounded theory techniques, see e.g.

Rennie et al 1988, Strauss and Corbin 1990, 1994; Turner 1981

Validity

The validity of this research method depends in part on the internal consistency of the data presented, accompanied by sufficient verbatim evidence to support the interpretation (Mays and Pope 1995). When the research was complete, there was an opportunity to discuss and confirm with Mrs. Ball, Mr. Lawrence, and Mrs. Rose the conclusions drawn from the interviews.

Presentation of cases, and Self-concepts

This section describes the respondents in order to preserve and respect their individuality. It also provides details of their depressive symptoms. The respondents' perceptions of themselves are examined.

Mrs. Adams

Mrs. Adams lived alone in a large first floor flat in a pleasant sheltered housing block. Terminally ill with lung cancer and bone metastases, Mrs. Adams nevertheless perceived herself as a well person, with good luck: *'I've never been ill, you see, apart from, like, the TB and the womb [cancer of the cervix], that was all I've had. I'm lucky, really.'* {1/8/20-21} There was no suggestion that she saw herself as vulnerable or helpless. Neither did she describe herself as an anxious or worrying person. When asked if anything was currently worrying her, she said: *'Not really, no. Nothing to worry about.'* {1/10/7} Mrs. Adams did describe herself as a sensitive person who had always been easily moved to tears: *'I'm a very weepy person, always was. Used to cry at the least thing. I've always been sensitive.'* {1/5/17-18, 1/9/17}

She loved reading and had a constant supply of books from her daughter-in-law. Although confined to her flat, she had in the recent past been active, independent and self-reliant:

'I always said to the boys, they used to ring up for me all the time: eh, Mother, you're never in. I said, well, I'm getting out while I can, while I've got a pair of legs I'm getting out, and I was never in here.'{1/9/24-27}; *'I wouldn't have home helps or nothing.'* {1/9/27-28} *'My husband, before he died, we always went out together. 'Course, since he died I've been on me own, but I've gone on me own to Southport and taken sandwiches and a flask with me and a book, sat in the gardens.'*{1/10/1-5}.

Her symptoms of depression included feeling terribly sad and weeping easily, feeling life wasn't worth living and wishing she were dead, having no energy, feeling lonely, feeling irritable, and eating and sleeping poorly. She was neither agitated nor retarded.

Mrs. Adams was physically very ill and in a lot of pain, after a lifetime of relatively good health and mobility. She was coming to terms with the diagnosis of terminal illness, and seemed determined to live fully the remainder of her life. She looked back on her life without regret, and talked with enthusiasm of things she had enjoyed in the past. The issues addressed by Mrs. Adams ranged from the very specific (the significance of weight loss) to the very broad, including the relationships between illness, physical function, role fulfillment, and depression; communication with health care professionals, and the importance of maintaining personal control.

Mrs. Perry

Mrs. Perry also lived alone, and had very recently moved from her own terraced house in south Liverpool to a nearby sheltered housing complex.

Mrs. Perry looked more depressed and cried more than Mrs. Adams did. She was agitated, and did not complain of lassitude, and was not retarded. Her complaints included loneliness, loss of energy, symptoms of anxiety, and feeling she would be better dead. She was an unpopular patient in hospital because she was irritable and demanding.

Mrs. Perry was an active and dynamic person. Whereas Mrs. Adams, due to her pain and terminal illness, was unable to keep up activities, Mrs. Perry was able to go out independently. She was a small woman who dressed in trouser suits and bright colours, had her thick white wavy hair professionally styled, and wore make-up and

costume jewelry. She had practiced yoga for 17 years, until two years previously. She was a Spiritualist, and her involvement with her church was a major part of her life. She spoke fluently and rapidly, and described herself as a nervy, anxious type of person. She gave a history of previous depressive episodes: *'I've been distressed years ago. Me husband had cancer all over his body.'* {2/4/132-133} (Have you had times in your life before when you felt depressed?) *Oh, yes, yes. It's nerves.'* {2/3/88-90}

The main concerns expressed by Mrs. Perry included the desire for a close relationship with someone, resentment of her son; and the implications of prolonged stress in the ontogenesis of her depression.

Mrs. Vine

Mrs. Vine was small and eccentric looking, very articulate, a voracious reader with an extensive vocabulary. She liked to read distracting fiction—horror stories that she knew were *'not real'*—and disliked romance fiction, or *'stories about people being ill or dying.'* She was reclusive due to her almost life-long history of agoraphobia. Mrs. Vine recalled that the times during her life when she was most engaged in running her home and looking after her family, she was least disabled by anxiety or depression. She reported experiencing a 'breakdown' at the age of 26, after the death of her first husband, and being treated at a convalescent home in Wales.

Mrs. Vine had been discovered after lying for three days unconscious in her little mid-Victorian terraced house in south Liverpool, which was in a state of squalor. The police had broken into her home, prompted by a phone call from her son in the south of England who had failed to receive a birthday card from her. Her depression symptoms were severe: she was obviously retarded and agitated, and had respiratory signs of anxiety, felt constantly tense and panicky and felt she could barely control these feelings. She complained of pervasive sadness, loneliness and anhedonia (although maintained her interest in her family), extreme lassitude and persistent anergia, difficulty with concentration and memory, felt she would be better off dead and wished she were dead. She did not complain of insomnia, anorexia or weight loss.

Mrs. Vine was hospitalised for 12 weeks, and although there had been serious doubts about whether she would be able to return home, after cleaning by a special team of cleaners and the arrangement of a complete home support care package, she was able to successfully return to her home.

Mr. Elliot

Mr. Elliot was a good-looking man, under five feet tall but upright (surprisingly so considering his long-standing and severe respiratory disease), and had two sons and two daughters. He started and still helped to run a small transport business with his son, and gave the impression of a man used to being involved and in control. He had lived for some years in a sheltered flat just off the high street a short distance from the centre of town. He described himself as even-tempered, courteous and thoughtful. Although physically much more disabled than Mrs. Perry, in character he seemed similar to her: a very active and sociable person with lots of interest in life.

At his diagnostic interview, Mr. Elliot was slightly retarded. He complained of sadness, weepiness, anhedonia, persistent worrying and preoccupation with his health problems, anergia and lassitude, tension, irritability, insomnia and anorexia. He had had symptoms of depression for at least one year.

The themes arising from his interview included difficulties in his relationships with both family and doctor, and the experience of depression as alien.

Mrs. Ball

Mrs. Ball lived with her daughter and a dog in a maisonette above a shop in a popular and moderately affluent area of south Liverpool. Mrs. Ball did not perceive herself to be unhealthy: *'I've always said I was quite a healthy sort of person..'* {5/7/1} She also reported that *'Physically I am quite reasonably well.'* {5/1/15}, although her consultant regarded her heart problems as severe. She cited a previous 'breakdown' 30 years previously, which had been treated with Librium.

She suffered from many physical symptoms accompanied by anxiety, especially shortness of breath, and was physically agitated. She complained of feeling sad and weepy, being worried and bad-tempered, experienced a loss of satisfaction with life, pessimism, feeling life wasn't worth living and that she would

be better off dead. She also suffered from insomnia, anorexia, lassitude and anergia. Mrs. Ball looked sad, and her daughter described her as unusually irritable and taking little interest in things.

The recorded interview with Mrs. Ball was full of uncomfortable extended pauses. She was agitated for much of the time, twisting her hair constantly, squirming in her seat, and putting her arms around her head. Occasionally she did not respond to a question but changed the subject. In her interview, Mrs. Ball implicated illness in her depression because of loss of independence, restriction of activities, and unfamiliarity with illness behaviour. She was also upset because the consultant with whom she had had a trusting and dependent relationship had recently moved from the area.

Mr. Lawrence

Unlike all the previous respondents, who had been widowed, Mr. Lawrence was a married man living in a small, comfortably furnished terraced house in a run-down area just out of central Liverpool. He was a retired baker, and a warm and sociable man (*'If somebody comes to visit me, I'm made up'*) who liked to make jokes. He described himself as *'a bit of a clown,'* and a person who disliked conflict or violence: *'I'd sooner walk out than argue with [my wife].'* *'I don't lose me temper at all.'* *'I can't stand anything like that, violence. We never watch it [on television].'* The Lawrence's had one child who was mentioned in passing only, and a niece who lived locally.

At the diagnostic interview in hospital, Mr. Lawrence initially appeared cheerful, but soon began crying. He confirmed a three-month history of severe loss of interest, lassitude, subjective slowing and loss of energy, persistent depressed mood, difficulty concentrating, early morning waking, and loss of appetite.

The recorded interview with Mr. Lawrence included his wife. The main themes discussed included fears and anxiety in general and worry over illness and all its implications, including loss of independence, changes in life-style, and separation from his wife through hospitalisation.

Mrs. Rose

Mrs. Rose, a retired bookkeeper, was interviewed specifically because she had sought treatment for depression, unlike the other respondents who had been diagnosed as depressed while in hospital. She had been prompted to approach her GP when she realised she was considering suicide. Her depressive symptoms also included a relatively pervasive depressed mood, persistent feelings of weepiness, severe feelings of loneliness, feeling life was not worth living, and social isolation.

Mrs. Rose described herself as sociable but not extrovert:

'...I like company. Although I don't, you see, I've always been, I wouldn't exactly say I was a loner, but I've never seemed to have had a lot of friends. I don't know why. See, there are some people that have heaps of friends around them, and they'll talk about all kinds of things, they'll even talk about other people and what have you, and people flock to them to get to know all this information. Well, I've never been a person for talking about people, and I won't take a person's character away. So whether that's stopped me from making friends or not I don't know.' {7/7/26-38}

Mrs. Rose was widowed, like all the other women in this study, but had never had children. She was a voluble, self-aware woman with an analytical mind. She was somewhat overweight, wore sober dresses and bright lipstick. She had moved a few years previously from her own house to a ground floor sheltered flat walking distance from the shops in an old area of south Liverpool. During much of her interview, Mrs. Rose dwelt upon current relationship difficulties and painful losses she had experienced through her life.

Mrs. Ryan

Mrs. Ryan was a gentle Irish woman, and a devout Catholic. She lived with her daughter and son-in-law and their two young children in a stable working class area of central Liverpool.

Mrs. Ryan spent three months in rehabilitation after suffering a stroke two weeks after a hip replacement operation. When diagnosed with depression two weeks after her stroke, she was severely retarded, and spoke in a barely audible voice. She suffered from insomnia, anorexia, severe anhedonia, concentration loss, and painful

dysphoria, feelings of hopelessness and uselessness, and persistent thoughts of death. She had no previous history of depression, and during her recorded interview the horror of her recent experience of depression was palpable. When she spoke of the symptoms of depression, she dropped her voice to a whisper, as though the memory was still acute and almost too painful to put into words.

Summary of respondents

These eight people inspired respect and admiration. None was remarkable, in the sense that they represented very normal elderly people quite typical of those met in urban Liverpool, but each described independent, active, self-reliant, useful lives, important relationships with others, and a vital participation in life. Their perceptions of themselves did not include ideas of worthlessness or low self-esteem, and they almost all gave the impression of competent, motivated individuals.

Both Mrs. Perry and Mrs. Vine described themselves as nervous or anxious people, and considered that their anxiety problems pre-dated and pre-disposed them to depression; and although Mrs. Perry had problems with anxiety, she was not crippled by it like Mrs. Vine, and still went out and kept busy. Mrs. Ball also had problems with anxiety, and Mr. Elliot and Mr. Lawrence were excessively worried.

The symptom profiles on diagnosis had many similar features: dysphoria, anhedonia, weepiness, lassitude and loss of energy; almost all thought they would be better off dead, that life wasn't worth living, or wished they were dead. In other ways, the features were dissimilar: three were agitated, three were retarded, one had both features, another none. Half complained of feeling lonely. Half felt unusually irritable. Five felt their appetite and sleep were affected by their depression. Anxiety was a prominent feature for three; three were concerned about their concentration or memory.

In the following sections, the results of the analyses of the information drawn from the interviews will be described. Resolving into three main topics, these are:

- how the symptoms of depression are described and experienced by the respondents as an abnormal state
- how the aetiology of their depression is understood

- how their relationships with health professionals influence how they cope with depression.

Experience of depression as an Abnormal State

'There's nothing worse than depression.' {1/8/29}

Why is that Mrs. Adams, terminally ill with lung cancer and in constant pain from bone metastases, could say that 'there's nothing worse than depression?' What are the symptoms of depression that these elderly people, already physically ill, found most difficult? This section details the symptoms of depression that were emphasised by the respondents.

Anergia and Lassitude

Anergia and lassitude are inter-related and it is difficult to distinguish between inertia due to lack of motivation, and physical lack of energy, as this exchange with

Mrs. Ball illustrates:

'all of a sudden, you know, it's a bind to even get up and, well, shall we say for example go and do a few potatoes or something like that. Wait 'til the last minute before I can do it, and at one time I mean I'd just get up and do it. (Was it that you didn't have the energy to do it, or that you just couldn't be bothered doing it?) 'Bit of both, I suppose.' {5/10/19-31}

Whatever the cause, Mrs. Ball was unhappy with her uncharacteristic inability to cope with everyday tasks.

For Mr. Lawrence, loss of energy was central to his depression and it was bound up with lassitude:

(Have you had any other times in you life when you felt the same?) 'You mean, scared, like?' (Like the way you felt in the hospital.) I haven't really. The only thing that might be compared with it, you know, the blitz. I was terrified of getting killed in the blitz. I suppose anyone would be tired [sic], uh, frightened.' {6/6/9-19} (Were

you feeling very sad then?) *'Oh, I was very tired [sic], yes. It's not depression, it's just tiredness. I don't get depressed. I laugh easy, you know. See, I keep putting things off, you know. Say I have to write a letter, and it's days before it gets dealt with. I mean, you should be able to sit down and write a letter, shouldn't you. I can't get started; it's a kind of laziness, or tiredness. [I'm] always tired. I've been asleep on my chair, by the fire, nodding away.'* {6/4/5-15}

The semantics are confusing in the previous quotation: it is uncertain what he means when he denies getting 'depressed' as he described himself as feeling 'miserable' and had been crying frequently. It's possible that Mr. Lawrence feels that 'getting depressed' is a trait. Nevertheless, the symptoms of depression, of lassitude and anergia, and his description of anxiety, are clear.

Both Mrs. Ball and Mr. Lawrence emphasised difficulties in starting activities, and how this is a change from what they feel is their normal behaviour.

Physical effects of depression

Physical symptoms unrelated to known pathology were acknowledged by two women and attributed to their depression.

'You feel as though you're falling to pieces. You get sort of aches and pains to do with nothing wrong with you. You know, you might get an ache here or an ache there or an ache in your legs, only fractional; they're not connected, I think it's just sort of a reaction. That's only my own view, like.' {3/10/8-14}

Mrs. Vine, who perceived other peoples' attitudes to depression as dualistic, compared that with her own experience which belied the possibility of separating mind and body: *'It's all in your mind, it's said, isn't it. I don't know. It's whether you've got it.'* {3/3/28-32}

Mrs. Perry, too, recognised the interdependence of physical and emotional symptoms:

(Tell me how you've been feeling the last week or two.) *'Not good at all. Specially this morning. Woke up about 5 o'clock and me head was all heavy and that, oo, terrible. Went two hours with that, me head. And it did go, after a couple of hours. And when I went for messages this morning, me legs kind of ache, they're weak. Me legs felt weak. You know, I thought, good heavens, why have I gone like this.'* {2/1/20-25} *'Me head was shocking for two hours. Don't know what was the cause of that. To do with nerves, I reckon that. Nerves, That's right.'* {2/10/334-336}

Mr. Elliot was aware of the interaction between his physical activity and depression:

'I was getting on nice then, you know, breathing and walking up and down this long passage; instead of sending them up the passage with money to the social fund we have, [I'd] walk up meself. But since I stopped taking them [antidepressants] I don't walk up now. They were doing me good, they were.' {4/1/17-21}

Insomnia

Although almost all respondents had reported sleep difficulties at diagnosis, in retrospect they placed little emphasis on insomnia as a troubling symptom of depression. The absence of correlation between sleep problems and other symptoms of depression in the quantitative data is illustrated by these reports of the variety of experiences among the respondents.

Some respondents shared the opinion that reduced sleep and poor quality sleep were common among elderly people in general and in themselves. Mrs. Perry reported:

'I don't sleep properly, you know. I only close my eyes and doze, I don't sleep. [I feel miserable] because I can't sleep. I wish I could sleep, dream, you know, go off and dream, but I can't.' (You wake up very early in the morning?) *'That's right, very early, a lot of the people here, they'll get up at six o'clock.'* {2/12/406-416}

In her opinion, sleeping 'properly' included dreaming, and was not a light sleep (dozing). Being unable to sleep 'properly' can make you miserable, an opinion supported by longitudinal research suggesting that persistent sleep problems were implicated in the development of depression (Ford and Kamerow 1989).

But Mr. Lawrence, who also felt that he didn't sleep very well, dreamt a lot, which he regarded as somewhat unusual although typical for him. His dreams sounded pleasant, without depressive content.

'I didn't sleep a lot in the hospital. Course, I don't sleep a lot here [at home]. Probably be awake most of the night. I wasn't doing anything, just looking through the window. I was thinking about getting out, you know, getting home, you know, how much longer.' {7/3/8-13} *'I dream a lot, that's the thing. Oh God, they mean something, dreams. Oh, always about the past, of course, when I was young, maybe, you know, when I was fifteen, first job. I'll bet you I dream something, oh aye, every night, I dream something, but sometimes it's soft, silly things, something you forget. Oh, I've always dreamed a lot.'* {6/8/27-35}

Mrs. Rose, however, who considered suicide, reported no sleep problems: *'Well, I do sleep. I think I was sleeping all right. Don't remember not sleeping very well.'* {7/3/34-36} *I always wake up about the same time usually, eight o'clock.'* {7/4/2-3}

Others, who in general did not complain of insomnia, nevertheless mentioned a temporary inability to sleep. Mrs. Vine, having received an unanticipated hospital appointment card, had a sleepless night due to anxiety: *'The hospital, the card came. I didn't sleep last night.'* {3/1/8}

Anorexia

For Mrs. Ryan, both insomnia and loss of appetite were associated with her general feeling of derangement: *'When I think of how I was, I couldn't eat or sleep or anything.'* {8/11/20-22} Mr. Lawrence reported a loss of appetite that seemed of a similar quality, if less intense: *'I didn't eat the food, because I was unsettled. It wasn't the food, beautiful food, I felt ashamed when they took it back.'* {6/2/22-30}

However, Mr. Elliot remarked with some irony that he had not noticed problems with his appetite: *'I'm eating all right, that's about all, you know.'* And Mrs. Rose had not noticed any change either: *'No, not really, no difference in [appetite], no.'* {7/4/11}

In Mrs. Adams' case, she was no longer depressed, but her food intake was poor. She had some desire to eat, and indicated some feelings of pleasure regarding eating. There was also the understanding of eating as a necessity:

'I've got to get something down me, but at present it's all soft foods. I even bought fish on Friday, this Friday, yes: the shopper brought me some fresh fish, I cooked it, just had a little bit of it, couldn't eat it. Threw it away. Throwing stacks of food away.' {1/11/3-9} *'I feel like fruit. I was just thinking I'll ask someone to get me a couple of pears and a couple of Cox's apples. I enjoy them.'* {1/6/23-26}

Total loss of appetite was noted to discriminate between depressed and non-depressed groups of patients. However, the correlation with other symptoms of depression was minimal. Clinically, questions about appetite are seeking congruence with other symptoms of depression, and change from normal. Distinguishing between appetite problems due to illness, depression, hospitalisation, or anxiety; and measuring appetite quantitatively, may be impossible. Appetite is complex, involving hunger, the cognitive perception of need, social routine, and a physiological response to food.

Weight loss

Weight loss correlated positively with reduced appetite in the quantitative analysis, and most of the respondents had lost weight recently. Three people spontaneously mentioned weight loss as a potential source of worry.

Mrs. Adams had recently lost almost a stone in weight: *'I got on the scales before this, but this [dressing gown] I think is heavier. I'm still seven [stone], so if I keep at seven all the time I don't mind, but if I go any less then I'll start worrying.'* {1/10/22-28}

When Mr. Lawrence mentioned weight loss, however, it was not his actual weight but the change from normal and the appearance of frailty which *concerned*

him: *'You're frightened, well, I was frightened, of losing weight. Well, I didn't lose any really.'* {6/2/24-27} *'I thought I was going skinny, like, you know, me limbs.'* {6/3/4}

Mrs. Perry, too, seemed more concerned about the appearance of weight loss and the change from normal. Like Mr. Lawrence, she was concerned by the look of her limbs *'I was thinking how thin I went.'* (You've lost some weight, haven't you.) *'Oh, yes, me arms, I can't believe it, how I've lost weight.'* (Well, do you think you're too thin?) *'No, I don't think I'm too thin, no. But I'm thinner than I was.'* {2/6/181-187}

This appearance of weight loss, apart from actual weight loss, seemed to represent an undesirable visible and tangible change from normal, which may signify a fading away, weakness, or feebleness. In fact, Mrs. Perry was concerned with her appearance in general. She obviously paid attention to dress, hair and make-up: (...you always dress smartly and you always have your hair done nicely.) *'Well, I've always dressed like that.'* (Put your make-up on.) *'I've always done that, since I was fourteen. You can't just get out of it. (Because you don't look like you're neglecting yourself.)* *'No. When I start doing that, I'll know I'm finished.'* {2/3/79-87}

This also points to concerns regarding normality. Mrs. Perry had behaved in a certain way since she was 14 years old, and she felt that she would recognise in herself that she was 'finished' (with life?) when she no longer behaved in her normal way. And, even though she found herself wishing she were dead, Mrs. Perry showed no signs of self-neglect, which in her particular case would have been a more severe sign.

Feeling old

Three people mentioned that they had recently begun to feel old. Mrs. Perry commented that she didn't begin to feel old until she turned 80, at around the time she gave up yoga and from which time she also dated the onset of depression.

Mrs. Ball said: *'Well, I suppose rock bottom of it is I really do begin to feel old, that's the point.'* {5/6/16-18}

Mr. Lawrence also described a feeling of suddenly becoming old, which he attributed to physical illness:

'I suppose I'd be glad if I could go back, turn the clock back and be fit and healthy, where [now] I feel as though I might be getting old, getting old quick.' {6/14/23-25} (But is it only recently that you've begun to feel old?)
'Yeah, more or less, I think since I've had me, what do they call it, me setback.'

Mrs. Adams attributed the start of the cancer to a fall she experienced two months before her in-patient investigations: *'That's the start of it, definitely was.'* {1/2/27} She felt the shock of the fall affected her, and suggested that old age increased vulnerability: *'The whole body shook up. It is definitely the shock that's done it, and with being older, you know.'* {1/3/1, 1/4/2-4}

This begs the question, however, as to what is meant by 'feeling old.' Is it loss of health, fitness, independence? Or is it more internal, feeling feeble, weak, useless, disinterested, or vulnerable? This subject bears further exploration.

Dysphoria

For some, although the descriptions were vague, the affective states they experienced were unquestionably dysphoric: *'I've felt terrible depressed this last week or so. Really lost somehow. I don't know, just fed up with everything.'* {2/1/3-4} (Mrs. Perry)

Mr. Elliot and Mr. Lawrence described themselves as feeling miserable: *'I feel depressed a lot lately, oh, aye, since I stopped taking those nice little tablets. I get depressed and I get some awful ideas in this blooming place. I get miserable.'* Mr. Lawrence, when reminded of his initially cheerful appearance in hospital, replied: *'I was miserable. I was putting it on, you see, laughing. I didn't want anything. Just to come home, just to be home.'* {6/8/2-16}.

Where they might have reported themselves as feeling 'a bit down' or 'low,' there was no attempt to downplay their dysphoria; the language was strong and emotive.

Crying

All respondents, when depressed, had been observed to be crying, or agreed when asked that they had cried recently or felt like crying. During the interviews, only Mrs. Adams offered crying as a specific symptom of depression which concerned her, and which resolved as her depression improved:

'When my [GP] came when I first took bad, I was in bed when she came, and I was sobbing me heart out.' {1/9/19-21, 1/10/29-31}. *'Anybody spoke to me before, I'd fill up. If you talk to anybody about anything, you're talking about not feeling well, and you start crying. Well, I used to be like that. I'm not now.'* {1/7/14-27}

Mrs. Rose suggested that part of her problem was that she was unable to cry even though she felt like it:

'I was feeling very depressed then, and you see unfortunately, some people can cry and bring it out. Well, I can't cry, I want to but I can't, never been able to cry for, you know, at a given thing. I've just had to kind of fight whatever it is, and I've been wanting to cry and then I've got to feel terrible,
{7/2 /8-13}

Anhedonia

Anhedonia was reported by all the respondents. There was a sense of the pointlessness she was feeling about life in Mrs. Ball's report, as well as a description of diurnal mood variation typified by low mood in the morning: *'Some mornings when I wake up, I wake up in a black mood. You think to yourself, oh, another day.'*
{5/5-6/33-2}

Mrs. Ryan told of a complete loss of interest in herself and her condition, and the anhedonia she described was intensely painful. She remembered when she was depressed:

'I have been all the time in the hospital, and, you know, trying to recover from this stroke and recover from that hip operation, so how did I live through it all? And do you know, in the beginning, as I have told you, I didn't care, I was so down and so depressed. I couldn't do nothing, I couldn't. I'd no interest in anything, no.' (Mrs. Ryan) {8/12-13/35-4}

Loss of concentration

Mr. Elliot expressed feelings of loss of interest or loss of concentration: *'I get like, say, that's the evening paper, I only look at two pages and that's it. Normally I'd read that right through.'* {4/3/38-39}

Mr. Lawrence described his inability to concentrate when in hospital as a feeling of distraction:

'I couldn't concentrate, no, no. Cause I could read all day [at home], newspapers. I didn't want anything, just to be home. I wasn't scared of being in there, no, not a bit, cause the men were nice, and the staff, and the food, but I had this craving to be home, like.' {6/10-11/30-4}

Mrs. Ryan described a state of anhedonia which interfered with her ability to concentrate: *'I was having a little read there [just now], by myself, just to pass the time. Now, I couldn't do nothing [when depressed], I couldn't. I'd no interest in anything, no. Never mind, that's passed.'* {8/12/34-38}

In the quantitative analysis, the correlations of loss of concentration (M6) with anhedonia (M8), retardation (H8) and with lassitude (M7) (0.42, 0.41 and 0.43 respectively) were moderate and similar suggesting that inability to concentrate is related in part to loss of interest and motivation. Correlations with apparent and reported sadness (M1 and M2) were 0.38. Other cognitive complaints (e.g. difficulty with long-term and short-term memory, word finding, face recognition) were not mentioned by the respondents, but other work (Hammond et al 1997, Newmann et al 1991) suggests that these may be relevant, although whether they arise from a similar origin is unclear.

What all respondents stressed was that an inability to concentrate was abnormal.

Hopelessness

Most of the respondents were actively unhappy about their mood and did not seem to accept depression as normal or typical. However, although they recognised themselves as depressed, some even seemed to have lost sight of themselves as being any other way. The depression was described as overwhelming. The picture that emerged was one of a great struggle through each day, a sense of pointlessness

For Mrs. Vine, there was a tangible sense of oppression and hopelessness:

'...like a big weight on me head. Seemed like a big weight on me head. A long dark tunnel, a good weight on me head, that's the only way I can describe it.' {3/4/5-14} *'everything seems dark, and hopeless, and you can't see your way out of the depression. You feel as though you're going to be like that all the time. You can't feel that you'll get over it or it'll disappear or anything like that.'* {3/8/ 30-34}

For Mrs. Ryan, her experience of depression also included an overwhelming feeling of hopelessness related to her physical ability after her stroke:

'I am a lot better, much better, and I feel happier in myself, I know that. Before, I didn't, you know, I didn't think there was anything, that I'd ever get better, or oh, I couldn't understand to be the way I was. And you do sort of feel hopeless, you know, when you think that you couldn't do anything.' {8/10/19-30}

There was also an impression of hopelessness in the account of Mrs. Ball, which describes a passive acceptance similar to that described by Mrs. Vine: *[the hardest thing is] to accept it at all, I think. I mean, I've had it on and off for so long that I don't really and truthfully feel I'm depressed, I think it's just me, part and parcel of me life now.'* {5/10/6-10}

Helplessness

Feelings of helplessness that may have precipitated or were a result of depression were described.

Mrs. Perry had coped independently with numerous difficulties until: *I got real down and was going to collapse near, before I asked for help. I rang [my son] and said, I say, can you help me. I can't do anything else, I can't go on, I can't go on.* {2/2/51-56}

As Mrs. Ryan related, central to her depression was the feeling of physical helplessness:

'But I never thought that it would be so, you know, that you would be so helpless, useless, I thought. But thanks be to God, see, I got [demonstrates movement in left hand]. It's not fully recovered. And I couldn't move me leg, I couldn't do nothing. I was awful depressed and all fed up, awful down with it. I didn't think I'd ever pull through it, that I'd ever be able to move my legs again. And now, thank God, I can, you know, move it up or down and lift it in and out, thank God.' {8/3/11-34}

Mrs. Adams described self-pity which she attributed to her inability to function as normal due to her illness, and includes an impression of hopelessness: *'I kept feeling sorry for meself 'cause I couldn't do what I wanted to do; you know, having a little weep now and again. Oh, I thought, oh, I've had it.'*

Finally, Mrs. Vine described her own sense of helpless frustration at being unable to overcome her depression: *'And it's no good saying to you pull yourself together. You feel like saying, I can't, you know, you feel frustrated.'* (3/13/24-26)

Social functioning

Social isolation is considered to be a symptom of depression (Spitzer et al 1978, Clark et al 1983), although it was noted by Evans (1996) to be uncorrelated with the GMS diagnosis of depression in elderly people. There is no doubt that social isolation was recognised as a symptom of depression by Mr. Elliot:

'They ask me to come downstairs, I say I'll go down, and I don't go down at all, I've no idea of going down, then I tell them normally I don't feel like it, you know, I don't go out with their day trips or nothing.' {4/2/30-37} *I don't even go down now for me lunch. They fetch it up here.'* {4/3/1}

Mrs. Rose also reported difficulty socialising: *'And, you see, I don't know what it is, I don't go out of a night now, and when I go out I can't push myself, to push myself onto people for company.'* {7/13/1-3}

However, the absence of asociality cannot be taken to mean an absence of depression; as Mrs. Rose pointed out, some social interaction, even though it was less than fulfilling, was preferable to isolation: (While you were feeling depressed you still went out to your clubs and things.) *'Oh, definitely. Oh, I didn't stop in, no. I hate staying in. Oh, I had to go out, I like company.'* (7/7/28-29)

Mrs. Perry, too, kept up with her social activities:

'Each Tuesday I go to [the community centre] for me dinner...and then I get up and help, bring the dinners over to the table and help, you know. And then I'm going to Rhyl with St. Joseph's on the Thursday.' {2/5/175-178}. (Do you go because you think it's good for you or do you go because you really want to go?) *'Oh, no, I want to go. It's company.'* (So you want to go for the company.) *'It's the company, yeah.'* (And do you feel better when you're there?) *'Yes, yes, with knowing them.'* {2/7/231-237} *'You get depressed, and you can't just sit here all the time, you know what I mean?'* {2/2-3/70}

Death and suicide

Feeling life isn't worth living

In Mr. Elliot's opinion, feeling that life isn't worth living would be a severe symptom of depression, characterised by complete loss of interest and enjoyment of everything including one's family: (Do you get to thinking that life isn't worth

living?) *'Oh, I haven't got to that stage yet, you know. No, I'll be honest with you, that way you know, cause I look forward to seeing me daughter, and me [other] daughter that lives over the water.'* {4/3/27-30}

Considering suicide

For Mrs. Rose, the awareness that she was contemplating suicide prompted her to seek help.

'I thought to myself, oh dear, I don't think life's worth living, and I just felt like as if my life wasn't worth living, and I have got paracetamol tablets in there, and I thought, shall I take some of those, and then I thought to myself, well, no, I won't because my life was given to me to live, and it was not my life to take, so I wouldn't. I felt that bad, I really and truly felt like going there and getting the bottle with the paracetamol tablets in and taking them.' {7/2/8-23}

Wishing to be dead

Four women specifically mentioned in the recorded interviews that they wished to die.

Mrs. Perry, although a Spiritualist with a strong belief in an afterlife, described her feeling (that death was preferable to life) as totally negative. *'The worst thing about it is you wish, you wish you wasn't here. (You wish you weren't here. You mean, you wish you weren't alive anymore?) 'That's right, yes, that's what you think, oh, I'd be better off if I wasn't here, you know.'* {2/5/151-156} Asked if she had considered suicide, she said, *'No, because it's not right. It's the wrong thing. It's not Christian. No, you'd pay for that.'* {2/5/161-162}

Mrs. Ryan, a practicing Catholic, described her feelings of wanting to be dead: *'... I was so deranged I wanted to die. But then, you can't die when you want.'* {8/5/14-17} Since recovering from depression, she no longer feels that she wants to be dead: *'But whenever your time's expired you have to go, it has to be something to cause the death, but I don't think that in any way now, thank God.'* {8/5/27-30} *'I'm old now anyway, it doesn't matter. There's an awful lot younger than me dead and gone.'* {8/5/19-25} Although she had been wishing for death, she apparently had not considered suicide.

The descriptions of these feelings do not imply an act of volition, an active choice between life and death. The way Mrs. Perry described her experience, for example, wishing to be dead was a distressing feeling that had come to her from an external source: *the worst thing about it is you wish you wasn't here. You think, oh, I'd be better off if I wasn't here.* Mrs. Ryan and Mrs. Rose both acknowledge the extreme abnormality of such a feeling. *'I was so deranged I wanted to die.'* *'I felt that bad, I really and truly felt like going there and getting the bottle with the paracetamol tablets in and taking them.'*

Rating the severity of thoughts about death and suicide in very elderly people has been recognised as problematic because of a 'heightened awareness of finitude' in old age (Johnson and Barer 1997), but little exploration of subjective meanings attached to the possible range of suicidal feelings (particularly in people with physical illness) has yet been undertaken.

Different from normal

There was a painful awareness of the distinctiveness of depression, particularly in the account of Mr. Elliot, who seemed mystified by his depression, and felt himself to be taken over by something from outside himself which caused him to behave in ways that were not like himself. He could not understand his own behaviour, didn't know what to do about it, just knew that he was not himself, and had lost interest in all the activities that used to engage him.

'I sit here looking at the wall half the time, you know. I get bad tempered and forgetfulness [sic] and I shouldn't get bad tempered because I've never been bad tempered.' {4/3/13-15} *I get very short-tempered. I don't want to be sharp to people, I want to be me own self, like such as now. I'm in the lift, I see you come, I'd just go down it, I wouldn't wait for you now. Once, I'd help you in the lift with your wheelchair. Even when I was in the hospital, or any of the women are in, I'd always send them flowers, but I don't bother now.'* {4/5/36-41} *'I had a wedding on to go to the other week up there and never went. And I never even had the decency to write and tell them I wouldn't be coming even.'* {4/3/34-36}

He felt his depression was causing him to behave in ways unlike himself, which affected his interactions with his children and threatened to alienate them from him:

'Me youngest son was here yesterday, and I turned on him for nothing. You know, he'd only come to see me, while he's on his holidays, and everything he done I found fault with, but I shouldn't have, you know. I get, like, our Doris comes here, that's me oldest girl, and she says to me, you've had that shirt on for five days, it was five days since you put it on, and I contradicted her, and I won't change me shirt just for spite 'til she's gone. Just upsets things, you know.' {4/3/17-26}

Summary of the symptoms of depression experienced as a abnormal state

Absent symptoms of low self-esteem

Strikingly absent from the symptoms reported by the respondents were those relating to loss of self-esteem such as feelings of worthlessness, a sense of guilt or punishment, regrets or self-blame. There was, however, an impression of self-reproach which accompanied some reports of changes in behaviour which resulted in the respondents not fulfilling what they felt were their responsibilities (e.g. *I never had the decency to write... and You should be able to sit down and write a letter, shouldn't you?*) Also, despite reports of severe anhedonia, interest in family appears to have been maintained.

Insomnia and anorexia

There was great variability in reported difficulties with sleep and appetite. Neither seemed to be of primary importance to the respondents. Mr. Lawrence and Mrs. Ryan both implied that their problems with appetite were secondary to feelings of 'derangement' or feeling 'unsettled,' but Mrs. Rose and Mr. Elliot denied that any problems with sleep or appetite were associated with their depression.

Psychic anxiety

Symptoms of 'psychic anxiety' among these respondents seemed less hierarchical than as graded by the Hamilton Depression Scale. Some respondents had severe difficulties with irritability, for example, whereas others seemed more troubled

by worry. For some, worrying about minor matters was normal behaviour. Irritability that was observable was not necessarily complained of by the respondent, although it might be reported by an informant.

'Inner Tension,' as graded by the MADRS, includes feelings of panic, dread and anguish, which seem to represent different concepts. Panic is associated with anxiety, as in Mrs. Vine's experiences. Dread is fear, as felt by Mr. Lawrence. 'Anguish' best describes Mrs. Ryan's experience, which was not associated with anxiety.

Preoccupation with health and bodily symptoms was uncommon, despite the presence of diverse medical conditions with a variety of painful and distressing symptoms. Even self-pity, which might have been considered appropriate, was uncommon.

Lassitude and anergia

Lassitude appeared to be a major and troubling complaint that fundamentally interfered with life. The HAMD failed to capture the importance of lassitude, combining in one item (H7) symptoms of anergia, lassitude, anhedonia, feelings of incapacity, and reduced productivity; but the MADRS specifically rates lassitude from hardly any difficulty (0), through difficulties starting activities (2), difficulties starting simple routine activities carried out with effort (4), to complete lassitude (6). Only Mrs. Perry did not complain of lassitude. She was also anxious and agitated, but Mrs. Ball and Mrs. Vine were concerned by lassitude, even though they also were agitated.

Suicidal feelings

Thoughts relating to death were also very common and worrying to the respondents, who perceived these as most severe and distressing symptoms. It was difficult to distinguish between the severity of wishing to be dead, feeling one would be better off dead, and thinking of suicide. It seemed to be an individual matter. Wishing to be dead, in the case of Mrs. Ryan, seemed to have been as severe and distressing, if not more so, than the reported suicidal thoughts of Mrs. Rose. This tends to validate the impression from the quantitative results and warrants further study.

Explanations of aetiology

'Why?'

'Well, that I'd like to know, missus, you know, but I couldn't tell you.' (Mr. Mills).

Mr. Mills dismissed that question about the causes of his depression, but four of the eight participants had elaborate, very carefully considered and specific explanations of the source and cause of their depression. Of those who had sought explanations, more than one cause was implicated. Explanations were internal, external, interactive, and existential.

Physical illness as a cause of depression

Considering the degree of physical illness that these people were experiencing, and the extent to which their lives were circumscribed by medications, hospital visits, and restrictions on their lives, there was very little discussion of illness. The interviews were, of course, focused on the emotional experiences, but there is little doubt that the respondents would have discussed their illnesses had they wished. Mrs. Ryan, whose depression occurred immediately post-stroke, came closest to specifically blaming her depression on illness: *'I don't think you'd ever get used to it, to lose all the power and to be useless, that's what I think.'* {8/4/35-37}

Mrs. Ball described the interactive effect of illness and depression:

'Physically I am quite reasonably well. I think it is just this depression, but the depression I think is caused by feeling poorly. A kind of vicious circle.' {5/7/1-8} *I don't think it's actually anything specific that I can put me name on but I just think it's because I don't feel well.'* {5/1/15-21}

Even Mrs. Adams, terminally ill and in constant pain, offered no opinion concerning the cause of her depression: (Do you have any idea where that [depression] came from, or why you were feeling like that?) *'No, I don't.'* {1/5/15} although earlier she said that she felt sorry for herself because *'I couldn't do what I wanted to do.'*

She said that once she knew her diagnosis, she felt better mentally:

'I feel more settled. It was bothering me: it's only arthritis, this, nothing we can do for you, it's only arthritis. But the pain wasn't, I mean, arthritis pains are different, every pain's different, isn't it. This is the whole body, which I never had before.' {1/10/12-18}

She said she knew the diagnosis anyway as *'you don't treat arthritis with morphine.'* She was not blaming the pain for her depressed mood, but implied that the uncertainty of the diagnosis, and the frustration of reduced functioning, were contributing factors. Mrs. Adams was striving to maintain routine and normality, an element of control in the small areas of her life in which she is able to function.

(How are you feeling now compared with how you were?) *'Oh, very low. Now, yes. Oh, I'll pull up. I could walk around then, you know.'* (So, physically you're quite a bit worse.) *'Yes.'* {1/1/25-29} *'But mind you, if I can walk around, I'm better than sitting here. If I sit here too long I think I stiffen up. But I know I'm stiff, this leg's stiff when I first get going, but I try to potter around. I get up and wash those little dishes up, you know, like tidy round, fill the kettle up, and I do meself a little drink, you know, and that's about all. And I sit down and I'm jiggered.'* {1/2/12-23}

Mrs. Adams was the only respondent preoccupied by her physical condition; her complaints were related mainly to pain, and to the significance of her symptoms with regard to her diagnosis of cancer. Pain was little mentioned by the other respondents. Mrs. Rose had sciatica, obviously a painful condition, but pain did not enter into her discussions.

In interviews with Mr. Mills, severely ill and seriously disabled with congestive heart failure and chronic pulmonary obstruction, physical illness still did not loom very large:

'In the nighttime I get it bad, you know, sit by the window open, you know, and I'm sure the people over the road think you're looking down at them. But it's only the breathing mostly you know, I haven't been sick or anything lately.' {4/2/25-28} *'Well, they keep just telling me it's a chest complaint, an infection, that's all I get to know, an infection.'* {4/7/5-6}

Earlier, he had said that he got depressed at times because he couldn't hear well, and because he couldn't get outside. He is also implying, in the above quotation, some dissatisfaction with the amount of information he has been given on his condition.

Loss of function leading to loss of role and identity

Among the explanations of aetiology, it was suggested that the difficulties of transition from an active person to a state of enforced inactivity, and of being unable to do the things one wanted or was previously able to do, were in part responsible for depression.

To Mr. Lawrence, his depression was indirectly due to deteriorating health which resulted in changes from normal activity, increasing social isolation, loss of independence and the ability to manage his own life in the ways in which he would have liked:

'I think [the depression began] since I've had me setback, it's two, nearly three years, you could date it that way. That started me off, you see. [That made a] big difference. I couldn't go out, and then I've never been housebound like this. I used to go out a lot and I managed to go to the local most days, and I'd meet people on the street, nice, men, women, and I could visit someone else instead of them visiting me. But I don't think that's because I'm old, it's, I was struck down, like, wasn't I.' {6/15/2-18} 'I've never been the same again, I know that. I'll never be able to swan off somewhere down the town on the bus. I wouldn't do that anymore, you see. I'd do things like that, I'd go to the Pierhead, and perhaps meet somebody. {6/16/6-14}

'I can walk normal, but after the skin infection I've got to have some wider shoes, so until I get them I'm not getting out for some fresh air, you see, that's a bad thing, isn't it, see. People say I'm lazy, but I want to go out. As it is now, I'd have to go in slippers, if I was going a message to the shop, bad as that.' {6/3/18-29}

These people had in common the perception of themselves as independent and self-reliant, people who had previously been in control of their lives, and for whom the loss of independence and role function was implicated in the ontogenesis of

depression. There as, however, no suggestion that this had resulted in a loss of self-esteem.

Mrs. Vine suggested that the loss of her ability to do the thing she had previously done due to agoraphobia might have been a cause of her depression, but also primarily implicated her own frustration.

(So what is it that made you depressed?) *'I think it was the frustration of not being well, you know, not being able to do things that I'd done all before. I'd always been pretty active and suddenly I didn't want to go out the door, because I thought I would go out the door and there'd be a lot of people. That's why I became depressed.'* {3/4/17-30}

Mrs. Ball commented on the difficulties of transition from an active person to one who is less able: *'I think it's the fact when you get that you can't just do what you want to do or, you know, you have to sit about such a lot, and I've never been used to it. I think that's the trouble.'* However, there is also some ambiguity as to whether Mrs. Ball's difficulty may also include loss of motivation which may be a symptom of her depression: *'I'd like to have me health and strength back and, you know, if I wanted to do a job I could just get up and do it. Right now I think, Oh, that can do until tomorrow.'* {5/5/28-30}

External events

Stress

External explanations were offered by Mrs. Perry, who felt her difficulties started about two years previously, when a faulty gas fire was leaking fumes into her house. At the time, she went to her GP who treated her as for a virus: (When do you think [the depression] started?) *'When I was gassed, when I was first gassed.'* Later, she had a break-in at home, during which she awoke to find a man in her bedroom who ran off when she challenged him. She felt at the time that she coped well and did not panic; she reported that the police who attended commented on her bravery. Some time after this it was found that the gable wall of her end terrace house would need to be rebuilt:

'And then the man coming walking in me bedroom, three o'clock in the morning, and then the worry of the house all on me. I had to handle everything. To do with the house and everything, you know. Seemed to have too much responsibility. That's what it was. I needed help. I waited 'til I got real down and was going to collapse near, before I asked for help [from] that son of mine. I rang him up and said I say, can you help me. I can't do anything else, I can't go on, I can't go on. I'd been struggling for all that time, you see. And then there was the business of the house. Me daughter from Canada and him wanted me to go and put up somewhere for three months and get the gable end done. And I didn't want to. I didn't want the house, it was too big for me, I wanted to get something, a flat, something smaller. That's another thing upset me. You know, the case of them, as somebody said, they were only, you know, thinking of themselves.' {2/2/45-65}

Her explanation involved the accumulation of stressful events, but she also expressed feelings of dissatisfaction regarding the support she was receiving from her children, and, as will be noted later, an inherent vulnerability.

Separation through hospitalisation

Although Mr. Lawrence's depressive symptoms pre-dated his hospital admission by several months, his explanation of the onset of depression focused at times on his hospital admission:

'It was only because I was separated [from my wife] and first time, like, I don't know, it's just been on [television] now, having your first baby like, it's a bit difficult to accept. So, 'cause she was on her own here, and she gets very lonely on her own, I was worried, and the fact that we weren't together, you know, if she'd of been at the hospital with me, I'd of been all right.' {6/2/9-18} *It must be a kind of fear, like, [of] being separated.'* {6/14/18-19}

Mr. Lawrence suggested that, in addition to the problems of reduced ability to function, the separation from his wife and the consequent worry were responsible for

his depression, and these combined with his own tendencies to fear and worry. He did, in fact, seem to be diagnosing himself as suffering from adjustment disorder.

Internal Explanations

Physiological explanations

One respondent, Mrs. Vine, had previously experienced pre-menstrual depression, and included physiology as an explanation:

'Well, of course, that business before, you know, periods and that, a lot of people are like that, aren't they, before your period. Of course, [you] can't help it if your body's doing it, can you? Like, you know, before menstruation.' {3/12/31-33}

This acceptance of a biological basis for depression was also shared to some extent by Mrs. Perry.

Inherent Vulnerability

Trait

Personality

Internal explanations included personality traits which made the individual more vulnerable to depression. The interaction between trait and situation was acknowledged, as Mrs. Perry explained with the suggestion that the lack of social support, for which some people do not feel the need, is implicated in her case:

(So you think some people will never get depressed because they're just not that type of person?) *'They're not that type. It's like, I'll meet somebody that lives in, eh, I'm meeting this one named Molly, and she says, eh, I like being alone, I don't want anybody, I'm used to it, and I don't go out for any dinner or anything. I mean that's the way you live you see. It's got to do with the person, if a person's like that you can't change them, they'll stay like that.'* {2/10/350-359}

Anxiety

Four of the eight respondents described problems of anxiety and worry that preceded the depression. Both Mrs. Perry and Mrs. Vine characterised themselves as nervous or anxious people, and considered that their anxiety problems pre-dated and

pre-disposed them to depression. Mrs. Perry believed that some individuals are constitutionally vulnerable to mental illness, and described a personality type which she believed predisposed one to depression: an anxious, worry-prone individual. When asked if she had experienced depression before in her life, she replied

'Oh, yes, yes. It's nerves. It's your nerves.' {2/3/90} *'It's all to do with really the type of person you are, isn't it. One person worries and another doesn't worry. It's got to do with the person themselves, isn't it, when you come to weigh it up. If you're a nervy [type].'*{2/10/339-342}

'You just can't help it, you worry about things, you can't just help being like that. You just worry about everything. Where some people don't worry, well, they're all right, you know. But it's surprising what worry can do to you.' (So you feel that the main thing is when you have too many worries, too much stress, then that makes you depressed?) *'That's right.'* (I see.) *'That's right. That's what causes it.'* {2/3/92-103} *anybody that's nervous and suffers that way, needs something to take.'*

According to that final comment, Mrs. Perry was accepting of the principle of treating 'nerves' or depression pharmacologically.

Mrs. Vine described an almost life-long history of panic attacks and anxiety, which she has handled throughout her life by managing situations:

'When I was about 25, after my first husband died, I had a breakdown. Nothing dramatic, but I used to have what they call anxiety things, and me heart used to race and I thought I was going to faint, and smothering, and all that sort of thing. Me heart was only going too fast because I was getting worked up. The doctor sent me to the convalescent home for two weeks. But I still got those anxiety turns, always when I'm with a lot of people.'{3/2/18-40}

As time went on, I got that way, if we went to the cinema with the lads, I'd sit on the end seat; I'm all right if you can just get out and get up and walk at the back. And that's the only way: I couldn't cure it, so I sort of avoided it. That seemed the best thing.' {3/3/7-24}

'They call it, what is it, panic anxiety, or something like that. It's all in your mind, it's said, isn't it. I don't know. It's whether you've got it. But you shake and your heart's pounding. Especially if you're in church or anywhere like that and you wonder if anyone's looking at you.' {3/2-4/28-6}

Mrs. Ball, who was agitated and restless, and constantly twisted her hair with her fingers during her interviews, said that she'd *'never been a person who could relax very easy, I must admit that, never.'* She described what might have been symptoms of agoraphobia, similar to those experienced by Mrs. Vine:

'If I do go out and I see anybody, I do me best not to stop and talk. It's not because I don't want to, it's because I'm frightened of standing about, in case I come over giddy or anything.' {5/3/21-24} *It really seems at times it's even hard work to talk out of doors. I know it sounds silly but that's how it affects me.'* {5/4/2-4} *'When I lay down at night I breathe quite easily all night long. Just it seems to me that when I begin to get a bit worked up that me breathing gets worse.'* {5/7/15-17}

She also experienced what might have been a panic attack during a clinic visit:

'As I sat in that hospital last week I thought, oh, dear, and the more I thought, the more I was getting worked up. Me breathing was shocking. I felt if I got up quick, I'd just pass right out. They gave me a cup of water and I couldn't even hold the water.' {5/6/24-31}

Mr. Lawrence, undoubtedly not unique among his cohort of Liverpool residents, dated anxiety symptoms from experiences during the Second World War and particularly the May Blitz, and described himself as a worrier:

[In hospital] I stayed in the big armchair 'cause I didn't want to lie down. I think it might be 'cause I think I'll choke, cause sometimes I get, what do you call it, when you cough, you know, a choking cough, when the phlegm seems to stick like. That's another fear I have, you see, of choking. Isn't that funny, eh? It's not funny, but it's a funny fear. The dark. Thunder. {6/4-5/21-7} You know, thunder reminds me of the blitz, you see. What else. Just everything. Oh, I am a bit frightened of things, you know, but when it's a person's nerves that's shattered, I'm not like that.' {6/10/14-15}

'I'm scared now because [my wife] can't cope, you see. I'll be glad, awfully glad, when she's better, you know, be relieved, but she's got a bunion and it's infected. Oh, she's in terrible pain.' {6/7/11-15}

These accounts of anxiety are especially interesting in this context because

- anxiety is described as separate from depression
- anxiety and related conditions are considered as predisposing factors
- anxiety is understood to be an inherent characteristic of the individual
- anxiety is described as producing physiological effects
- there is an implication from the respondents that management and treatment of anxiety might help prevent depression.

Social support and family relationships

This sample of elderly people represented differing social arrangements. Only Mr. Lawrence was married; the rest were widowed. Mrs. Rose was childless; the others lived with children, their children lived nearby, or lived at a distance.

The actual amount of social contact was generally quite extensive. With the exception of Mrs. Vine, who lived a reclusive life but nevertheless appeared to feel supported by her sons and their families from a distance, all had very regular and frequent social contact with family and through social activities. Most felt well supported by their families and seemed satisfied with the amount and quality of

interaction. Furthermore, the majority expressed no dissatisfaction with their social support.

Mrs. Adams, for example, had regular contact with her two sons, their wives and children, who telephoned and visited on an almost daily basis. She seemed intimately involved in her sons' lives, worried because one *'that hasn't got as much money as the other one'* has recently taken a second job: *'I said you can't do two jobs...I said you're working yourself to death...and his wife's going mad because she never sees him...'* {1/6/16-21} She also had visits from a shopper, the warden of the sheltered accommodation, and residents of the other flats: *'I have plenty of visitors from here, like. Me friend Sally was sitting over there the other day. She's at the bingo now, she'll be up here later. She'll come up about 4 o'clock. She'll slip out and get me a couple [of apples].'* {1/6/5,30-36}

Like Mrs. Adams, Mrs. Vine talked of her sons and their families in comfortably intimate terms, and expressed no negative perceptions of her family. Although she saw her sons and their families rarely, and otherwise seemed completely isolated socially, she made no comments whatsoever concerning social support or the lack of it, and she expressed no desire for a confidante.

However, Mrs. Rose, who had no children, and Mrs. Perry (who had a son living locally but of whom she saw less than she would have liked) both complained about their lack of social support, and loneliness was mentioned by both women. What they seemed to desire was to restore a previously experienced close relationship. Mrs. Rose alone talked of missing her late husband; the others either did not mention their deceased spouses, or mentioned them only in passing with no sense of unresolved grief.

Mrs. Ball mentioned no friends or social events outside of the family, and implied a mild discontent with her domestic situation and perhaps difficulties in her relationship with her daughter. However, there was the impression that living with her daughter was an acceptable compromise. She enjoyed regular visits from her granddaughter and little great granddaughter.

The need for a personal friend

Mrs. Perry regularly attended lunch clubs and church functions. She had many social contacts, but these were not satisfying for her:

You see, they're only acquaintances, aren't they. It's the same as, em, one is friendly with me when I go to St. Joseph's, but it's only because she sits by me, next to me. They don't call and see you or anything, you know what I mean? Nobody calls to see you.' {2/7/237-241}

'You see, others that live here, they have all kinds of relatives call, even at night, grandchildren, you know, grandchildren and all that. Nobody comes, there's nobody comes through this door. I feel it.' {2/6/189-192}

What she felt lacking was a closer relationship, a confidante, a companion or special friend or, as she said, *'a personal friend, somebody to turn to.'* She'd had good friends in the past, but now was without. Mrs. Perry felt this was definitely a contributing factor to her depression. And, as mentioned previously, Mrs. Perry described herself as the sort of person who needed that kind of interaction.

Mrs. Perry was dissatisfied with the amount of help and attention she was receiving from her son. He lived out of the city, but not far, and visited her once a week.

'I'll tell you why I do feel lost. Other people have got relatives that come and all that. Well, I've only got him [son], and I haven't seen him for a week...I feel a bit lost that way.' (You'd like to see more of him or...) *'I'd like to see, well, somebody to talk to. You know what I mean? Somebody to turn to, you feel you need somebody to turn to.'* (So, you haven't got somebody close all the time.) *'No, that's right. That gets me down.'* (So, you've got nobody to confide in.) *'That's right, that's right. That's how I feel, you see. And that's what makes me depressed. It's all, with me, it's all mental. I know that. It's all in the head.'* {2/1-2/27-40}. (When did you last have someone close that you could confide in and talk things...) *'About three years ago I went out with a man and he died, and I went out with the organist from the church for five years. I always went out with somebody and they died and I've been left. I've*

always been used to having a personal friend, that's what me trouble is. And you feel lost without them. {2/7/244-245}

Although Mrs. Perry spoke of the loss through death of her husband and many friends, the implication was that she was depressed because the deceased had fulfilled an important role in her life, rather than that the loss of specific people led to bereavement. Whether what she desired was actually a confidante (i.e. someone with whom to share private feelings) or simply a supportive best friend or partner is not completely clear.

Mrs. Rose also had close relationships in the past, with her late husband and her late sister:

(Do you have now, or have you had a person that you felt really close to that you could talk over, that you could share things with?) 'You see, Bob [my husband] and I were very, very close, and there was just the two of us, you see, if you understand what I mean. And neither of us bothered with anybody. And we were kind of, well, I don't know if we were both loners, to be honest. {7/7-8/39-7}

'[My sister] Elsie's been dead five years, and I used to go on Saturdays and Sundays. When she died, I have felt it a lot. I've missed her a lot. I used to have very big telephone bills because we used to natter to one another, you see, and it was like as if I have somebody there to talk to and then I came here thinking that I would be near the train [station which would be convenient for visits to Elsie]. I was only here 10 months when Elsie died and that I think hit me worse any anything else did, because I knew then that I might as well have stayed in Hall Drive as come here. I did have a friend and she lived along Mather Avenue. I used to see her on Wednesdays and we used to dance together, and anything in the evenings we would go together to along here to the British Legion. Well, she went [into sheltered accommodation] but she hated it, didn't like it at all, and she more or less faded herself away, she didn't want to live. And you see, Elsie died in the July and then [my friend] died the following September, that was two months, and then the following May my little dog died, so I lost three things that I loved. I lost three things

more or less one after the other, I think they really got me more than anything.' {7/11/9-44}

Although Mrs. Rose later implicated a current relationship conflict with a male acquaintance (Arthur) as responsible for her depression, she was dwelling on losses that had occurred four to five years previously. Her present sense of loss, due to Arthur's perceived rejection, was a reminder of pain in the past. Like Mrs. Perry, she wanted to experience a special relationship.

Mrs. Rose gave long and thoughtful consideration to the possible source of her depression. She rationally discussed the pros and cons of having moved from her marital home to sheltered accommodation, almost like a balance sheet (which seemed appropriate from a retired bookkeeper). Moving away had meant leaving familiar neighbours, but they were ageing and ailing now as well, and she found that she met plenty of people in her new area. The move to a smaller home meant less work, but also less with which to occupy herself. She questioned whether ageing itself may have been responsible, although whether as a process or because of what may accompany it was not clear. She considered that a good reason for depression would be a personal attack of some kind, physical or verbal, which she had not suffered.

Mrs. Rose returned repeatedly to talk about Arthur, a male friend who had been visiting her regularly. Eventually she reached an explanation of her depression, which expressed the need for a special relationship, like those she has lost. There was a loss of the past, the reminder of previous grief, and an existential quality to her depression:

'I can't tell you how long I've been feeling like that, but I can't ever remember being so depressed before. Might have just been me getting on in life, I don't know. I can't think of anything that upset me, really. No explanation. There's nobody being nasty with me, nobody was doing anything to me. And I thought, Oh, dear me, what is wrong?' {7/2/31-38} *'I was feeling lonely. I have really, I think I have felt more lonely lately since Bob died than I did at first, because I think, you see, I've always had a feeling that I did wrong coming to this flat. I should have stayed in Hall Drive amongst all the neighbours that I knew. I don't know. But you see, in Hall Drive now, it isn't the same, because the people that were younger then, they're a lot of them are*

going into ill health and their husbands, they can't go out, and the husbands have to do the shopping and so I don't suppose I would have had their company any more than I do now, in fact some how or other I seem to meet more people living here. It seems to be much better somehow in that respect and I haven't got as much housework. I can really give this place a jolly good do in about two hours, and perhaps I might be looking for something to do then, you see, so I don't know really.' {7/3-4/15-4}

'Sometimes I wonder whether, you see, Arthur has been very very good to me, he's done an awful lot of work for me and odd things, and I can't fault him really, but he's not the type that comes in and gets hold of you and hugs you and all that kind, he just comes in and sits down there and has his cups of tea and his cakes, and when it's time to go, he goes. There's no, hello darling. [He's] Not demonstrative, no. He's getting a bit more demonstrative lately, will kiss me goodnight now when he's going, but before that off he would go, bye bye, I'll give you a tinkle.' {7/9-10/23-4}

He used to be coming every night. Well, now that he goes to the clubs he doesn't. He just comes Monday, Wednesday and a couple of hours on a Friday, but I don't ever see him at the weekends, because he has these particular friends. He's a very, very funny person. He doesn't acknowledge me, he doesn't want to be talked about.' {7/10/18-26}

When we're in the clubs together he won't, as he's going past he'll just nod like he does to anybody else. That doesn't make me feel so... I've got a bit more used to it now, but I used to think to meself, well, why can't he acknowledge me, but no, he won't, and yet he comes here and he'll do any mortal thing for me that I ask him to do.

'I sometimes wonder whether [the depression] might have been anything to do with Arthur because when he started getting used to the clubs he stopped coming as much, you see. Now with me being used to him coming, I'm just wondering whether it might have been something to do with that. He used to come every night, and then he started going in and I was left on my own, so whether that has gradually got me down or not I don't know.' {7/12/20-38}

Mr. Elliot, in the context of a discussion about why he does not want to go to the communal dining room of his sheltered housing to eat, and the observation that there are a lot of new people in the residence, mentioned loss through death of many acquaintances:

'All me friends seem to be vanishing quick, you know. Like nearly every week there's a death here, and it's someone I used to know, you know. Like, a friend of mine come in a fortnight ago here. She swapped her bungalow for one of these places. They sent her in to hospital last week in the morning, she was dead in the afternoon, they cremated her yesterday.' {4/3/6-12}

There is no sense from this that he felt the need of a personal friend or confidante. At no time did he mention his late wife. As with Mrs. Rose, there was an existential quality to his distress, the undeniable proximity of mortality. The loss of friends and others in the same cohort, and the cumulative sadness that results, suggested that the continuity provided by those of younger generations, children and grandchildren, may assume greater importance.

Dependency

However, none of the respondents, except perhaps Mrs. Perry, gave the impression of having or wishing for dependency upon their families, and two people specifically stated that they did not wish to have constant attention.

(How do you feel when you're left on your own?) *'Oh, I'm all right.'* (You don't mind being left on your own.) *'No, but I wouldn't like to be too long alone, like; day to day yes, but I wouldn't like to be left. I wouldn't like to be left for days with no one*

to talk to.' {6/5/8-13} When asked if she preferred it when her daughter was at home or out at work, Mrs. Ball said:

'Perhaps that's something you shouldn't have asked me. I think I probably prefer it when I'm on me own.' {5/3/29-31} *She will talk to me from the kitchen and I can't hear her. She is very strong willed, takes after her father. It certainly doesn't worry me [being by meself]. It's knowing that if I know she's coming in, that's the point. I wouldn't like to be here all day and all night on me own.'* {5/5/2-13}

The question of being a burden, or wanting to not be a burden, never arose in any of the interviews.

Prevention

Mrs. Vine offered ideas for prevention of depression, which included the need for activity, but also acknowledged her biological explanation for depression:

'The thing was, on the menopause I didn't have no problems. I was very busy. I never stopped, but I never had anything wrong, like. You know, I didn't notice what people had always said, this happens to you, that happens to you. Hot flushes and all things like that. I didn't have time to think. And I think that's one of the answers, you know. Being occupied. You see, I read. So, I think the answer, really, is to get into something to do, a hobby or read or something like that, so you can take your mind off everything.' {3/10/20-38}

'You've got to get yourself out of it, haven't you, but the only way I can think of would be to have some activity that you put your mind on that, then you wouldn't be thinking about it, would you. If you're more active, I don't think you get as depressed. Things like an activity or if you take vitamins would help at that time, and a good diet.' {3/13/4-27}

There are obvious contradictions between Mrs. Vine's thoughts and her behaviour. She stated that when depressed there is nothing that you can do to pull yourself together, but that the best thing to do is to keep busy, occupy yourself, and take your mind off it. She seriously neglected herself before her collapse, and yet she felt

nutrition to be an important part of maintaining good mental health. She considered keeping busy and having a hobby to be important, but seemed to only read, a socially isolating and inactive occupation.

Summary of explanations of aetiology

Half of the respondents apparently required and looked for reasons to explain their depression; to the others, seeking an explanation did not seem to be important. An explanation, not necessarily actual, but as perceived by the respondent, seemed particularly of value if it enabled the person to understand and thereby exert some measure of control. Even explanations that included inherent vulnerability seemed to offer the possibility of management, a trait that could be coped with.

Potentially the most difficult for the respondents, however, were explanations involving external, unavoidable stressors, usually cumulative to the point at which a threshold had been passed, exceeding their ability to cope. These seem to have been all the more difficult in spite, or even because, of their self-perceptions as able people unable to call on their internal resources to meet their current difficulties.

Relationships with health professionals

The recognition by these people of a depressed state as abnormal, and a willingness to consider depression as a disorder involving physiological causes and physical consequences, suggests that treatment of depression would be considered reasonable by a percentage of elderly people with physical illness. One respondent, Mrs. Rose, had been interviewed specifically because she had not been diagnosed as depressed while a hospital in-patient, but had presented to her family doctor with a complaint of depression. The others, however, in common with the majority of depressed people encountered during the study, had not actively sought treatment. Understanding help-seeking, or the lack of it, among depressed elderly people should aid health professionals in education, recognition and treatment. The single most important element with regard to help-seeking that emerged from the interviews was the perceptions of health professionals by the respondents.

Positive relationships

Mrs. Rose appeared to have a working relationship with her general practitioner that may have enabled her to bring up her concern about her mental state:

'I just told her that I was feeling depressed, that's all, just told her what it felt like. I think I had to go to the doctor for something else, and while I was there I told her about feeling depressed you see. I thought, well, I might as well while I'm here, tell her, and just asked her could she do anything for me.'

{7/5/10-20} *'When I feel as though I want to see her, I go. It's only lately that I've really, as far as I can think, I've been running to the doctor. I never was one for running to the doctor, you know, for anything, never been like that.'*

{7/6/11-17} *'I like her. She's all right. A lot of people don't like her because she's, I think she's [foreign].'* {7/6/6-7}

Mrs. Ryan also spoke comfortably of her GP:

'The doctor where I live, you know, here in Liverpool, he said to me there's no tablet we can give you that will cure the pain or arthritis, he said we can give you a new hip. I said, oh, my God, aren't I too old. No, he said, age doesn't make any difference, he said, but he said, we'll give you physio for about a month to see...' {8/2/12-21}

It is possible that, had she experienced depression when at home, she might have been able to communicate this to her GP, but the depression began immediately post-stroke, while she was an in-patient.

Mrs. Ball had a long-standing relationship with the doctor in her local practice, who retired; and a trusting relationship with her consultant which terminated when he moved to another job, which left her feeling she had no medical practitioner to rely upon: *'I started going to J because he [male GP] said, I think perhaps you'd be better if you went to, uh, cause she was the lady, you see. But on the day that Dr. D retired [sic], she retired, so I've lost both of them now, that I felt I could rely on.'* {5/11/17-20}

Difficulties in communicating emotional problems

However, Mrs. Vine felt that mental health problems were difficult to discuss even with health professionals. She expressed concern about mentioning her problems in case she was met with disdain: her own mother had had no patience with her problems, and she felt she wouldn't be able explain her feelings to some medical and nursing staff. She herself did not feel that mental problems were a sign of weakness or stigmatising, but felt many other people did not understand:

'You think if you spoke to anyone they'd think you were mad. That's your first thought. You know, that somebody wouldn't understand. So I thought, well, if you tried to tell anybody how you felt they might not understand, you know.

It's a great worry, whenever you're saying anything, whether they understand you or whether they think, oh, she should pull herself together. {3/9-10/43-6}

'I didn't like explaining it to, you know, the health, the care person, Julie. I don't know, there's no shame in having a breakdown, or anything like that, or having nervous trouble. People make you think there is. {3/6-7/30-7}

Seeking information on when and from whom she might ask for help in future, Mrs. Vine was asked: (If you felt like that again, what would make you get help? Is there anything that would?) *'I think I'd be a bit wiser after what happened, like. I think so. I would try and pick it out why, now, you know.'* {3/9/25-33} A lot of Mrs. Vine's information came from books, magazines and television, and she was quite knowledgeable about depression and other mental health problems. But her impression that other people would not understand her problems, combined with the anxiety that stops her wanting to interact, and the hopelessness that accompanied her depression, may be what mitigated against seeking help. In addition, she seems to be a person who wants to solve her difficulties herself rather than rely on others.

Doctors as unreliable sources of help

Mrs. Adams had not sought help for depression, and her attitude to doctors in general was not positive: consultations had, at times, been the cause of frustration and bemusement, and doctors the source of anxiety, untrusted and unreliable. For example, when swelling and pain in her knee, which occurred after a fall, prompted Mrs. Adams to attend the accident and emergency department, the resulting consultation was clearly unsatisfactory to her:

'Well, they didn't x-ray the knee part. They x-rayed me ankle. They said that, 'cause I was paining down there, but it wasn't. It was there [indicates knee], the pain, and it was all swelled round there and red. But that's what happened, and I never went back after. Stick, they gave me. Mad.' {1/3/24-33}

Prescriptions sent from the GP were also a source of confusion, which, however, Mrs. Adams felt able to query:

'I said, you sent me the wrong things. I said, you sent me a bottle last time. So she said, what are they. She said, oh, no, the same, only a tablet form. I'm not used to taking tablets. I hate taking tablets. But still, I'd rather take tablets than mixture.' {1/1/1-18}

The length of time it took for her to learn of her diagnosis of cancer, and the manner in which she was told, were the cause of anger, although when Mrs. Adams related this, it is from the point of view of another person with whom she agreed: *'She'll tell you all about how I got told, and she'll tell you she thought it was wrong. That, she said, was the wrong way to tell me. The hospital should have told me son. She was right [i.e. correct] there, you know.'* {1/12/2-5}

Mrs. Adams and her family had understood from consultations with the hospital doctors that arthritis was causing her back pain. Her own opinion was: *'They shouldn't say things are something else. You don't know what to do for the best, do you.'* {1/12/7-8} This implied that she felt it was not possible to deal with a problem without accurate information, the desire for which might be termed empowerment.

Mrs. Perry also described a situation of confusion involving her GP: *'[It started] When I was gassed, when I was first gassed, and he [GP] was treating me with the wrong stuff. Of course I didn't take it.'* The last comment suggested that the doctor was not someone whose opinion and advice was necessarily respected, and that there was a lack of reciprocal communication.

Dependent relationships with doctors

Mr. Elliot also had experience of what he perceived to be mistakes on the part of his GP: *'...he sent me the wrong medicine.'* {4/1/36-38} But Mr. Elliot also

expressed a lot of worry and anxiety over his relationship with his GP, on whom he felt dependent in his current state of health. He seemed to feel it was his own responsibility to maintain a good relationship with his doctor.

'This doctor, he only give me one week or a fortnight of them pills. I didn't want to interfere [i.e. ask for more] because I believe they're shifting surgeries cross the road under the management, and he's cutting a lot of the tenants out now, getting rid of them.' {4/1/3-11}

'So you're between the devil and the deep, then, aren't you. I mean, I don't want to cross swords with him.' {4/1/27-30} *I've just been trying to keep the waters flowing. I don't want to fall out with him, see.'* {4/1/35-36}

'He put me on this oxygen bottle, you know, but then every time you want it, you have to ring your doctor up for him to send a note to the chemist for the chemist to supply it, the consequence is when you want it, they haven't got enough to give me, so I have to do without it, haven't I? I can't be running round saying give me the oxygen. They give me the first and the second bottle all right and they got in touch. Gets him [the doctor] bad tempered at times, you know. So don't know what to do really.' {4/2/13-22}

'I've only been with this same surgery for 45 years. I've never changed. But it means if I want to see them now, I've got to get a taxi to the city and a taxi back up. I don't want to change, swap over and find that another fellow says 'you're not sticking with him, I don't want your troubles' you know. I've only had the doctor out once, since I last seen you, only the once. I don't call him out just because I've got a bit of a cough or something, 'cause I know he's got other people to see to.'

Mr. Elliot clearly had an unsatisfactory relationship with his GP, but felt helpless to do anything to improve the situation. He tried to be the 'good patient,' he didn't call the doctor out unnecessarily, had remained loyal to the same surgery for nearly half a century. He was severely ill and dependent upon his doctor to come out to him when necessary and to supply his prescriptions and his oxygen.

The severity of his illness and his dependence on this doctor may, in fact, have made it even more difficult for him to add other 'demands.' As well as striving to negotiate a working relationship with his GP, Mr. Elliot was also dealing with logistical problems.

Pragmatic difficulties

Mrs. Perry, too, mentioned the logistical difficulties involved in visiting her doctor. The siting of the surgery and the routine for dispensing repeat prescriptions were not user-friendly: *'I hate going to the surgery. It's a hill going up. It's steep. You feel it in your legs.'* And, regarding prescriptions: *'The only thing about the surgery, they make you go back the next day, they don't give you it right away.'* These types of obstacles to access may further weaken the relationship with the doctor.

Communication problems, whether due to hearing difficulties or unfamiliar accents, did nothing to encourage the sharing of sensitive information.

'I couldn't understand a word she said. It was [a foreign] doctor. I said, I couldn't understand, I had to tell her in the end, I don't know a word you're saying, sorry, I'm awful sorry, but I don't know what you're saying, could you speak slower. Oh, don't tell me I'm going to see her next Tuesday. A lot of people must have trouble with her.'

{2/6/203-221} (Mrs. Perry)

Mr. Mills, who was partially deaf, said *'I can't understand him when he does come [The foreign accent's] broad on him, you know.'* {4/1/36-37}

In her interview, Mrs. Vine discussed problems with anxiety related to her agoraphobia: *'I'm a bit worried about, I don't want to go to [the hospital], for that reason. There'll be a few people there.'* {3/6/24-26}

Mr. Lawrence mentioned no problem particular to his general practitioner, but his concern seemed to be with what doctors represented: increasing vulnerability, illness and hospitalisation:

(Wife: Well, you'd had [the cellulitis] for a while, really, and then you wouldn't go and have the doctor, wouldn't let me send for the doctor.)

'You could say I'm stubborn, you know, obstinate.' (I know I remember you saying you were afraid to go to hospital.) *'You see, that was in me mind.'* (Wife: and then we had a couple, you kept saying to them, relations, if you don't go you're going to have to have the leg off.) *'Well, it wasn't that bad.'* (Wife: but it was frightening.) *'They said these things, you see, but it wasn't that serious, only a skin complaint.'* {6/15-16/28-6}

Summary of respondents' relationships with health professionals

Whether people are able to seek help for depression from their health providers may depend partly and pragmatically on ease of access. Another practical issue is that of communication of emotional issues, which is enhanced if both parties share the same vocabulary of feelings. In people with age-related hearing deficits, ease of communication becomes an even more important issue.

A prior relationship with the health professional, during which trust has been established, will enable such a conversation to take place. Recently, a cross-cultural examination of the presentation of depression in primary care in 14 countries (five different continents) (Simon et al 1999) noted that a somatic presentation of depression was significantly more likely (95% confidence interval 1.2 to 2.7) in primary care centres that were *'characterized by unscheduled appointments and patient-physician relationships that were not ongoing.'*

Finally, for a person in frail health, the sense of the doctor's attention as a finite resource to be conserved for essential uses jeopardises the doctor as a source of help for emotional problems.

Discussion

Subjects

The strength of the sample of respondents interviewed in this study is that it represents those encountered in normal clinical practice. Although the respondents represented a select group in that all had agreed to be interviewed about their depression and therefore must have accepted the concept of depression (and seven had been drawn from a group taking part in an antidepressant treatment trial), an examination of the reasons for refusal to take part in the treatment trial suggests that the attitudes of the respondents were not atypical. Out of 107 people asked to participate in the treatment trial, 25 refused. Reasons offered included not wanting an 'experimental treatment' or to take part in a clinical trial or to sign a form; the patient's family did not like the idea, there was a dislike of taking any medication at all or of taking additional medications. Some people were too indecisive, anxious, irritable, miserable or uncooperative to consider giving consent. Five people described circumstances, which they considered were causing their depression, and which would change and therefore resolve their depression; some felt their depression was already resolving. Only three stated that they not 'believe in' the pharmacological treatment of depression, and two did not believe they had a depressive illness.

Bowling (1995) noted in her study of the '*pertinent domains of quality of life and health related quality of life*,' that there were important discrepancies between unprompted replies to inquiries regarding the effects of illness on life, and those replies given in response to showcards listing areas of importance preselected by the investigators. It might reasonably be assumed that, in the present study, the symptoms and effects of depression mentioned spontaneously would be those which, being uppermost in their minds, most concerned people; and that consideration should be given to emphasising those aspects in rating.

Symptoms

Low self-esteem was not apparent: almost all participants presented themselves as competent, motivated people frustrated by what they felt to be an uncharacteristic inability to function normally.

There are descriptions from several people representing the depressed self as different from the self not depressed:

I never had the decency to write and tell them I wouldn't be coming {Mr. Mills}

I shouldn't get bad tempered because I've never been bad tempered. I don't want to be sharp to people. I want to be me own self, such as now. {Mr. Mills}

I don't know what it is, when I go out I can't push myself onto people for company. {Mrs. Rose}

I mean, you should be able to sit down and write a letter, shouldn't you. I can't get started {Mr. Lawrence}

Normally I'd read that right through.' {Mr. Mills}

'I couldn't concentrate, no, no. Cause I could read all day [at home], newspapers.' {Mr. Lawrence}

These comments suggest that depression was experienced as qualitatively different, not only a more severe experience of a normal emotional state. This tends to argue for a categorical approach in the identification of depression, and may be functional in terms of assessing severity and response to treatment. Identifying depression therefore must depend on recognising the variation from normal for and by the individual. Indeed, it may be apodictic that this is precisely the point at which intervention is desirable.

The following symptoms were mentioned particularly by the interviewees as related to depression and were considered by the respondents to be abnormal and fundamentally related to the quality of their lives:

- anergia
- lassitude
- crying or feeling like crying
- irritability, short-temper and feelings of frustration
- somatic complaints including feelings of weakness, heaviness, and aching in limbs and head

- concern about weight loss and the appearance of frailty
- feeling old
- a loss of interest in food
- inability to concentrate (e.g. on reading)
- a sense of hopelessness (especially regarding the possibility of improvement from the depressed state)
- difficulty coping with day to day life and activities
- loss of interest in usually engaging activities, including social interaction
- seeking social interaction as a relief from depression and loneliness
- reported dysphoria, feeling 'fed up' and miserable
- thoughts about death, such as feeling life is not worth living and wanting to be dead.

Agosti et al (1991) concluded that psychosocial impairment in some depressives might well be a result of depression, rather than a manifestation of personality. Experience with the elderly people in the current study certainly suggests that this is so.

There is an argument for depression severity in this population to be measured by those symptoms which are distressing and which improve with recovery, and to be based on ways in which depression influences normal functioning and uniquely affects quality of life. The scores on the HAMD and MADRS do not adequately quantify the severity of depression the respondents were experiencing and the effects on their quality of life. The HAMD particularly failed to capture the distress in some: for example, Mrs. Ryan, who had few complaints of anxiety or worry, was probably the most severely depressed; and Mrs. Rose, who had no somatic complaints or anxiety and whose scores were lowest, had been suicidal. Neither scale gives sufficient weight to lassitude, or to feelings about death.

What constitutes improvement in a depressed elderly person who is physically ill and possibly disabled? In a placebo-controlled treatment trial for severe

congestive heart failure (mean age 66-67 years), those in the active treatment group had significantly higher mortality, so that the trial was terminated prematurely by the ethics committee (Cowley and Skene 1994). However, despite the reduction in survival, the authors suggested that improvements in quality of life might have been an acceptable trade-off. Significant improvements in physical mobility, ability to take part in social activities, and reduced need for rest were reported for the active treatment group. However, no significant differences were noted between groups regarding emotional state, home management, general symptoms, pain, sleep, social isolation, or energy. The paper did not discuss whether the quality of life dimensions measured were those which were most pertinent to the patients. In chronic illness, such as heart failure, where the long-term aim is not to cure the illness, quality of life is arguably the most important outcome to measure.

Depression interferes with any ability to enjoy life, to participate socially or take pleasure in any activities. Depression does not have to be severe; mild to moderate depression appears to have a significant impact on the ability to enjoy life. Critical signs of improvement for the respondents would include being able to fulfill their roles by activities such as letter writing and meal preparation, social functioning, reduced irritability and a possible associated improvement in family relationships, not crying or feeling like crying, being able to pursue usual interests such as reading the newspaper, taking an interest in other people, and feeling like being alive. It has been suggested that independence is highly prized by elderly people, but it could be argued that independence is relative: independence is not simply being able to function without help in any and all circumstances, but being able to function in the way in which one chooses to function.

The effects of depression on physical illness are strikingly apparent: a patient who feels they would rather be dead, or who experiences serious difficulty in performing even simple routine activities, who feels unmotivated, has little interest in life, or who has a sense of hopelessness, is in a poor position to maintain their health and participate in their own care and treatment. What was surprising were the efforts at self-care and maintaining normal routines and practices some individuals were still making.

Explanations of aetiology

Explanations of the aetiology of depression were usually multifactorial; half the respondents implicated three or more interacting elements. Physical illness itself was not blamed, but the consequences of illness were. A frustrating reduction in the ability to function as one would like was the most frequently mentioned explanation. Vulnerability was implicated: certain types of people were thought to be more likely to be depressed. There was a general acceptance of depression as a real and concrete disorder; and although possibly 'all in the mind,' that did not invalidate it as a legitimate problem. Most respondents observed that what they experienced emotionally or mentally affected them physically.

Socially, the respondents were almost all in what might be considered to be supportive environments, with supportive children. Some were actively involved in social activities, or were capable of being involved. Some maintained their social activities but found these unable to meet their emotional needs. Loneliness was unrelated to social contact, but was associated with the perceived lack of a confiding or personal relationship.

These lay theories of depression, and the previous sections describing symptoms and self-concepts, have implications for treatment. The acceptance of depression as a concrete disorder, a willingness to accept a biological explanation and to think analytically about mood and behaviour and acknowledge possible roots and behaviours which might be amenable to change, suggest that both pharmacological and psychotherapeutic treatments would be acceptable. Cognitive-behavioural therapy, with its emphasis on reattribution and the utilisation of the client's own inner resources, seems highly appropriate. Baldwin (1991), in comments on the psychological approaches to the management of late-life depression, suggests that cognitive therapy and interpersonal therapy seem appropriate as they '*promote a sense of mastery and achievement to counter the withdrawal and isolation so typical of late-life depressive illness*' and behaviour therapy is useful in increasing the frequency of positive experiences and pleasant mood states, management of anxiety, and in treating phobic avoidance.

Cognitive-behavioural therapy therefore would seem to have an important role in helping these people to identify potential positive reinforcers, to engage in activity,

to identify stressors and ways of managing. This does not mean that antidepressant drug treatment is not an option. Taking antidepressant drugs may be seen as one way in which the depressed person can engage in managing their own situation with the help and support of a concerned clinician.

Help-seeking

In order to seek help for a problem, it must first be recognised as an abnormal state. This did not seem to be a major difficulty, both judging by these accounts, and the quantitative data of 100 patients used in the statistical analyses, none of whom denied that they were depressed. Seeking help from a doctor in the circumstances might seem reasonable, as there was reason for frequent contact already, and the general practitioner might be assumed to be intimately familiar with the patient and his or her problems. Although general practitioners might be considered the ideal resource for identifying and treating depression in elderly people with chronic health problems, very few depressed people are diagnosed by their GP, and fewer still are treated. Even when people are admitted to hospital, which is more likely if there is concomitant depression, depression goes unrecognised in at least 50% of cases.

From these interviews, several possible contributing factors for low recognition of depression have emerged. On a most basic level, elderly people may actually see very little of their GPs due to practical difficulties in visiting the surgery, and a reluctance to ask the doctor for home visits. Home visits are felt to be a scarce resource to be used only when absolutely essential. Much contact may actually be by telephone as, for example, in requesting repeat prescriptions. The doctor may be perceived as a busy person who does not take kindly to unnecessary consultation. Blanchard et al (1994) found that among 57 people (mean age 74.9 years) with GMS-diagnosed depression, only one-third had declared their symptoms to their GP, and this was significantly associated with previous discussion of emotional symptoms with the GP, younger age, and knowledge of a relative with depression. Blanchard et al concluded that mental health education targeted at the elderly population would help *'enable patients to present psychological symptoms to their general practitioner.'* No doubt this is one area that could and should be addressed, but the entire interaction with the doctor is a complex relationship.

Communication can only take place if the parties can understand each other; and hearing difficulties, or gross differences in language, may impede communication to an extent that the subtleties of depressive symptoms are difficult to address. Depressed people may perceive an attitude of stigmatisation on the part of others, and be reluctant to discuss their emotional problems because of this.

The qualities of the doctor have been found to play a part in the rate of depression correctly diagnosed (Badger et al 1994, Giron et al 1998); doctors using 'patient-centred' interviewing techniques and active listening skills involving appropriate posture, eye contact and lack of interruptions, and the use of questions with psychological content more frequently recognised depression in their patients. Doctors have to be able to listen, and to ask questions concerning emotional as well as physical aspects of their patients, to take a holistic view. The patient must perceive the doctor as trustworthy and competent, as well as interested and sympathetic. The respondents on the whole considered themselves to be only temporarily inhibited in their functioning and unable to manage. The ideal response from the health professional should acknowledge the older person's extensive experience of living, and include a respect for the extent of their internal resources.

There may also be patient-characteristics that contribute to difficulties in identification of depression. In a study of general practitioners' recognition of depression among elderly patients, Crawford et al (1998) found that the least educated, the married, people with visual impairments or high levels of other physical handicap, and men were least likely to be identified as depressed. Among younger women, GPs were least likely to recognise depression in those who were physically ill or complained of tiredness; those who were seriously physically ill had a much-reduced chance of having their depression identified (Tylee et al 1993). General practitioners were better able to diagnose depression in patients who were experiencing identifiable psychosocial stressors, who mentioned sleep and appetite problems, and who appeared to be depressed (Badger et al 1994). These studies suggest that elderly men, particularly those with a stoical or undemonstrative demeanour, as well as anyone with serious physical illness, has a decreased chance of having their depression recognised by physicians.

The depression requires not only to be labeled, but also defined as a potentially treatable problem. In recent qualitative research with elderly people with congestive heart failure taking part in a study to assess the effectiveness of a special nurse-led heart failure clinic (Aimson 1999), there was striking evidence that the patients found communication with the heart failure nurse outstandingly successful. Many patients reported that they previously had not had any label for their heart failure, understanding it only as a vague collection of symptoms which included breathlessness and swollen ankles. They felt they had gained a working understanding of their physical condition and treatments for it from the nurse, and able to access the nurse either at the clinic or by telephone to obtain advice informally and discuss the management of their condition. One woman, whose husband had had a stroke as well as heart failure, had been withholding his diuretics in order to ease his need to visit the lavatory frequently, and unintentionally exacerbated his heart failure, resulting in his hospitalisation. After explanations from the heart failure nurse, she was pleased to have achieved an understanding enabling her to manage his condition, and felt she could consult the nurse by phone in future if she had any queries.

This 'enabling' seems to have been the key issue with the respondents in that study. Similar to the data reported by Salmon et al (1999) in their study of somatising disorders, the empowerment of the individual to manage their own conditions, and their own lives to the greatest possible extent seems pertinent when considering depressed patients with physical illness.

The recent trend towards the use of more specialist nurse-led services, such as Parkinson's Disease nurses, stroke specialist nurses, tissue viability nurses, alcohol specialist nurses and cardiac failure nurses, may provide a guide towards what might be beneficial. Nurses may well be better placed than doctors, who may be perceived as busy and important, and therefore lacking in the essential quality necessary for communication, i.e. time to listen and understand. There may be an argument for a more generic geriatric nurse specialist in the community, who can be quickly and easily accessible. Health visitors and practice nurses theoretically have this role of responsibility for elderly patients in the community, but among the respondents interviewed, and others from the study, there was no point of contact, other than the general practitioner, mentioned.

Is depression tolerated or expected by the elderly themselves? The implications from the interviews are that the depressed elderly do not accept depression as normal, but the state of depression itself reduces the ability and inclination of the depressed person to seek help. Depression may be felt to be appropriate, but that doesn't make it a desirable state. Anhedonia is a 'passive' rather than an 'active' state, a lack of interest and motivation as well as loss of pleasure, so it would not be surprising if people whose depression presented mainly with symptoms of anhedonia failed to seek help.

General discussion

Shortcomings of research

The patients in this study are representative of clinical practice in inner-city Liverpool, but the results are not necessarily applicable to other geographical areas. Based as it is on a small sample, any conclusions are tentative, and indicative of directions for further research.

Although in this sample a significant difference was shown between men and women for only one item, the numbers in this study were inadequate to accurately assess differences between sexes. There is evidence from other studies that presentations in men and women may differ (Kivela and Pahkala 1988). Pragmatically, it may be that the higher prevalence of depression among women, and the greater numbers of women among the elderly, indicate that research should first concentrate on women. However, the suicide rates among depressed elderly men are among the highest, and some research suggests that depression can be more difficult to recognise in men. There is, therefore, a need to conduct studies with stratified sampling which includes sufficient numbers of men and women to enable separate analysis.

The depressed patients in this sample may have been more severely physically ill than the non-depressed group, and/or may have had more congestive heart failure (Koenig 1998), either of which may have affected specific items such as general somatic symptoms, and work and interests. The depressed patients in this study were rated as having more chronic and acute illnesses, and were taking more medications (which could arguably be considered an objective criterion for severity of illness) than the non-depressed. The illness measures used in the study (e.g. frequency counts of diagnoses) were inadequate to enable constructive analyses of this element of patient characteristics. Further research might helpfully include patients matched for illness (i.e. patients with a primary or main diagnosis of congestive heart failure or chronic obstructive airways disease), and valid and reliable measures of illness and functional ability, which would allow comparisons on these aspects to be made between depressed and non-depressed patients, as well providing the potential to detect changes over time and possible effects of treatments. However, the association between illness and depression has already been established, and the presence of more

illness and more severe illness among the depressed would not affect the validity of the findings.

This research does not necessarily apply to the minority of very severely depressed elderly people, but to the considerable percentage of significantly depressed geriatric patients encountered in the practice of geriatric medicine who face substantial consequences from their depression. This study also does not explicitly pertain to persons with severe cognitive impairment, who were necessarily excluded from the research. There were, however, people with mild to moderate cognitive impairment included.

A major strength of the depressed sample is that they did not select into treatment for depression and therefore are representative of the depressed patients encountered in normal hospital practice.

There is a possibility of bias due to all screening, diagnostic interviews and follow-up interviews being carried out by single rater. However, interviews and ratings of symptoms were overseen throughout by a senior registrar (later consultant) psychogeriatrician who was available for consultation and clarification at all times. In addition, the use of the GMS, a standardised diagnostic interview for which recognised training was undertaken to minimise inter-rater differences, ensured minimal effects from idiosyncratic rating.

The sample of non-depressed patients included 8 patients from a specialist stroke unit who were comprehensively assessed as part of an investigation into depression and were included to complete an age- and sex-matched sample. The socio-demographic characteristics of the patients did not differ from the rest of the sample, and other possible sources of bias were considered and discarded.

Screening

Investigation into the identification of depression in geriatric medical patients suggests that although doctors may have a generally accurate idea of the prevalence of depression among their patients and a good grasp of the relevant symptoms, there is often no systematic attempt to identify depression. Although acknowledged to be useful, the recommended screening measure, the GDS, is thought by doctors to be too time consuming and too depressing.

The ideal protocol would involve the use of a very short and easily administered screening scale which would give a degree of certainty concerning the

presence of depression, and could then be followed by a brief interview, which covered the discriminating symptoms of depression and which was embedded within an algorithm for treatment and/or referral. This procedure has been suggested by Passik et al (1998) for use in oncology.

Several authors have noted that nurses are an under-utilised resource for depression recognition, but nurses have been reported as feeling reluctant to ask patients about depressive symptoms because of fear of upsetting them or worry of being suggestive and actually contributing to the patient's distress (Valente and Saunders 1997). Given their sustained opportunities for interaction with their patients, screening for symptoms and signs of depression could easily and appropriately be carried out by nurses, but that screening should be of a type with which nurses are comfortable to encourage regular use.

Initial screening: the observation of the patient

Evidence from the literature and from the present study indicates that motivational and behavioural signs and symptoms are important and useful indicators of depression in the physically ill elderly person.

Depressed people may well report that they feel depressed, particularly when asked directly. All evidence from the literature and from this study confirms that crying and tearfulness should be taken seriously. Crying is uncommon in non-depressed people, whether they are ill or elderly. Anhedonia may, however, be the more common presentation but one that is easily overlooked by both the patient and the professional. A depressed appearance is sensitive and specific in identifying depressed patients, and is associated with anhedonia as well as dysphoria. However, a non-depressed appearance may be a false-negative. This may be especially true in men.

Reported loss of concentration is related to anhedonia, depressed mood and retardation. It is not part of anxiety and agitation. People who normally read books or newspapers, or watch TV or listen to radio, may report they cannot concentrate. The subjective perception of difficulty with concentration is definitely related to depression and could be investigated in the context of pastimes enjoyed.

Retardation is also observable but less salient in the hospital situation, probably because it does not create acute problems. The withdrawn, unmotivated, listless patient who shows little interest in surroundings is identifiable by observation.

Feelings of lassitude and lethargy, especially when related to the initiation of activities identify depressed patients. Feeling slowed down, low in energy and easily fatigued do appear to be part of depression and should not be automatically be attributed to illness. There may be subtle differences among these symptoms which merit further exploration.

Anxiety, significantly more common among the depressed, is easy to observe, and in one study doctors' estimations of depression and their estimations of anxiety in patients were highly correlated with each other ($r = 0.78, p < 0.0001$) (Passik et al 1998). The authors suggested that doctors were attuned to distress generally, but it is also possible that anxiety is obtrusive and disturbing, while depression does not so readily impinge on awareness and is more easily ignored. Should the identification of anxiety in patients be more strongly encouraged? The prevalence of anxiety is high, it is a distressing condition, relatively easy for staff to identify, and predicts future depression in some patients. More attention should be given to anxiety, whether associated with depression or not, as problem-focused therapy and relaxation skills may be taught and are beneficial.

Symptoms that may not prove to be as useful in screening are those concerned with suicidal feelings and suicidal intent, feeling life not worth living, and wishing to be dead. In a screening instrument, they may be highly specific, but unnecessarily sensitive in an initial assessment. In routine use these questions feel provocative to staff. Indeed, they are powerfully provocative, and a person who is feeling suicidal may, when asked, divulge to the interviewer painful revelations which the nurse or doctor is ill-prepared to handle.

Symptoms for which there are major questions concerning their usefulness include appetite disturbance, which is influenced by depression but also by drugs, illness, hospitalisation, and unfamiliarity. Severe persistent loss of appetite does discriminate between depressed and non-depressed. Also, insomnia, if severe and persistent, does discriminate. Initial insomnia, at least as perceived by the depressed person, appears to be associated with depression. In routine screening these symptoms lack specificity. Interviewing experience suggests that questions about appetite and sleep are appropriate early questions in conversations aimed at identifying depression and allow a natural progression to what may be considered to be more sensitive areas.

Symptoms relating to guilt, self-blame, and self-reproach are uncommon even among the depressed and are therefore less useful for screening.

Anecdotal evidence suggests that, in some patients, irritability may be discriminating. Observer-rated irritability may be unreliable, and as a self-rated question, there is insufficient data from this study to draw conclusions. Forty-seven percent of depressed patients reported increased irritability, but there is no specific data from the non-depressed with which to compare this figure. Irritability among the non-depressed should be further explored. Related to irritability are feelings of being short-tempered or bad-tempered.

Feldman et al (1987) noted that some characteristics of patients were highly correlated with the presence of affective disorder, including pre-admission prescription of night sedation, dissatisfaction with living alone, and a past history of psychiatric disorder whether treated by a psychiatrist or general practitioner. A screening instrument might usefully include a minimum number of items that have been established as associated with depression.

House (1988) pointed out that a definition of depression should be operationally useful, in that it should define a condition which can be treated. The ultimate test of screening should be that it identifies treatable patients. This could be accomplished initially with an open-treatment trial, followed by a placebo-controlled trial.

Measuring severity of depression

This research has confirmed that the Hamilton Depression Rating Scale is an inappropriate instrument for measuring depression severity in elderly physically ill patients. The Montgomery-Asberg Scale, although in its 10-item form is arguably lacking in internal consistency, may be a better choice due to the fewer number of anxiety and somatic symptoms. However, neither scale appears to contain a sufficient number of relevant items. The HAMD lacks items to assess anhedonia, which may be of particular importance in this population. The MADRS insufficiently assesses dysphoria and retardation.

Psychometric theory suggests that the ideal construct scale should consist of approximately 10 items, measured on a five-point scale. Each item must specifically assess a single concept. Anchor points must be concrete, and a full range of scores

must be used; it is pointless having scale items for which the most extreme ends of the items are never used. In addition, scales for the assessment of depression must contain items that change with treatment.

Evidence from the factor analyses demonstrates the value of assessing anxiety symptoms separately from depression. It is important to measure anxiety symptoms as well as depression as they frequently co-occur and are a source of distress, and treatment of depression may also be anxiolytic. The effects of treatment on anxiety should, however, be measured independently from depressive symptoms. Ravindran et al (1994) noted that 'the central manifestations of anxiety' improved in treated elderly depressed psychiatric in-patients, but the somatic symptoms, although commonly present, did not alter.

There may also be a case for using two separate scales assessing both positive and negative affect in the measurement of depression severity. Items in a scale assessing dysphoria or negative affect would include reported feelings of depression. Questions concerning dysphoria might be expanded to include other manifestations. Watson et al (1995a) included in General Distress (depressive symptoms) items such as discouragement, hopelessness, feelings of disappointment with self, failure and self-blame, and pessimism about the future. Feelings concerning coping, and hopefulness in the context of illness and hospitalisation could be evaluated. Within General Distress (anxiety symptoms), Watson et al (1995a) included items such as tense or sore muscles, feeling tense, and inability to relax. The addition of items such as these to a negative affect scale should be investigated. In addition, the interview data suggests the possible value of introducing other items relating to somatic symptoms such as heaviness in the head, aching or weak limbs; and items concerning body image, frailty, or feeling old; bad temper or irritability, and negative evaluations of others.

Included within dysphoria might be all items relating to nihilistic or suicidal feelings. These require further exploration, because of the limited number of items relating to dysphoria that were present in the scale items. In terminally ill cancer patients, specific thoughts of suicide were more highly correlated with hopelessness than with depression as measured by the BDI and the Schedule for Affective Disorders. There is, however, still ambiguity in these results, as hopelessness was assessed by items including pessimism and discouragement as well as hopelessness,

which was defined to include *'the capacity to find purpose in living.'* (Chochinov et al 1998) The semantics of emotional language need to be considered. People may describe themselves as feeling 'fed up' or 'miserable' or 'terrible'.

The questions concerning the relative value of somatic signs and symptoms in the construct of depression in this population has been only partially resolved.

Constipation, loss of appetite, loss of libido, somatic anxiety, agitation, and possibly insomnia may not be as important in the construct of depression in older people as in younger adults. Insomnia and appetite are apparently so influenced by confounding variables that their usefulness is compromised in this context. Persistent feelings of loss of energy have, however, been confirmed as important, and should be measured.

Within a scale assessing the absence of positive affect, both depressed appearance and anhedonia must be assessed. Lassitude, lethargy, and low energy are important symptoms within this construct. Motor retardation is observable, but feelings of slow thinking are not necessarily so. Therefore, people need to be asked about their feelings of slowing of their thinking recently.

Further research should investigate the value of separate construct scales to assess anxiety, dysphoria and anhedonia, and explore the addition of items to a scale measuring dysphoria. Some symptoms require clarification, which can be carried out through interviews with a broad cross-section of elderly people, followed by the use of paired comparisons to establish weighting of severity.

Once scales were constructed, the change in symptoms as patients are treated for depression would enable the utility of the measures to be assessed. Further studies should include a global impression of severity, a global impression of change, measures of functional ability, and a self-rated quality of life scale.

Ideas for further research

The qualitative component of the study suggests that further qualitative research is required on the meaning of feeling old among elderly people: asking people do they feel old, how would they know if they felt old, and what constitutes feeling old?

As noted earlier, further study is necessary on feelings about death in order to construct appropriate measures: how bad is it to feel life isn't worth living, that you'd

be better off dead, that you wish you could go to sleep and not wake up in the morning. These questions could be addressed in the form of rank ordering or using q-sort methodology.

It is essential to address the process and changes experienced by elderly ill depressed people. Longitudinal qualitative study of the symptoms of depression in a clinically relevant sample of elderly people should be conducted to discover how people recognise depression in themselves and others, and how they recognise improvement or deterioration. In addition, more detailed research is required on how illness affects quality of life in the very old. In assessing depression severity and grading symptoms and their improvement, which signs and symptoms contribute, and can they be described in a Guttman-like hierarchy? What changes in which symptoms constitute improvement in depression?

Finally, from a health economics perspective, depressed people are greater users of health resources. A four-year prospective study in Seattle, Washington, in a group of over 2500 people mean age 73 years at baseline, found that even sub-clinical levels of depression resulted in an increase in health care costs of 50%, even controlling for age and severity of physical illness (Unutzer et al 1997). Initiating a specialist geriatric nurse working either from within GP practices or from the hospital department of geriatric medicine, visiting selected patients with serious chronic conditions such as heart failure and pulmonary obstructive disorder on a three-monthly basis over twelve months, to discuss illness management and to identify anxiety and depressive disorders, and comparing, for example, hospital admission rates, GP visits and use of medication, with matched patients from the same practices, may be the way to clarify the possible benefits of this approach.

Conclusions

Evidence continues to accumulate regarding the negative influence of even relatively minor levels of depression on the quality of life, functioning, morbidity and mortality of elderly people who are physically ill. The limited amount of clinical research so far indicates that most depression in elderly people who are physically ill is treatable. Depression is nevertheless poorly recognised and infrequently treated. The increasing numbers of elderly people, increased life expectancy and associated chronic illness, and the high prevalence of depression in the presence of illness makes the understanding of the presentation of depression in physically ill elderly people of considerable consequence, both in the identification and the evaluation of treatment.

This research has addressed the significance of such somatic symptoms in elderly physically ill people as sleep disturbance, appetite disturbance, weight loss, loss of energy, retardation, headaches, muscular aches, loss of libido; preoccupation with physical problems, cognitive symptoms of loss of concentration and memory loss; social withdrawal, and the importance of thoughts of death. The study has focused on the signs and symptoms that may identify depression in elderly ill people, with the intention of improving screening methods. It has also evaluated two currently used measures of depression severity, and examined the structure of the construct of symptoms in depressed elderly ill people in order to investigate in what ways the measurement of severity might be improved. The construct of depression in elderly physically ill people has been examined using the data from the depression rating scales, supported by more detailed information from the Geriatric Mental State Schedule interview and the personal accounts of a selected group.

The identification of depression in elderly physically ill people should take into account observations as well as reported symptoms. Reported sustained loss of interest in activities, or an inability to get enjoyment from activities or to anticipate with pleasure activities that were previously enjoyed, should be given considerable weight in this population. Reported dysphoric moods may include feelings of frustration, bad temper, persistent tension,

irritability and misery, as well as sadness or depression, and these should be further investigated. Suicidal feelings, overt or subtle, are highly discriminating. My own work with colleagues showed that the observation of a sad or depressed appearance, weepiness, social withdrawal and apparent lack of interest, apprehension, obvious agitation and anxiety, and lassitude, incorporated in a screening scale, was sensitive in identifying depression in elderly medical patients and was more likely to be used by hospital staff than the recommended Geriatric Depression Screening Scale.

The recognition of depression depends to a great extent on the relationship between the health professional and the patient. Both the mundane aspects such as access, availability, and practical elements of communication; and the more subtle elements of skilled listening and the rapport between professional and patient have important implications.

My work has revealed a serious flaw in the measurement of depression in elderly people with physical illnesses. Anhedonia and related symptoms must be assessed when evaluating severity and response to treatment of depression, and anxiety should be measured separately. The Hamilton Depression Rating Scale, which has been the most commonly used instrument to assess depression severity clinically and in research, has been found to be inappropriate in this population. The Montgomery Asberg Depression Rating Scale is an adequate alternative, but further work should be done on the construct of depression in elderly people with physical illness, with the intention of establishing a conclusive range of aspects of both negative and positive affect, as well as the separate assessment of anxiety, to comprehensively evaluate depression severity and response to treatment.

The combined items from the HAMD and the MADRS, used in the final factor analysis, suggest the basis for a new scale, which with possible additions to expand the measurement of dysphoria, and proper validation, could enhance the accuracy of treatment evaluation in this increasingly important population.

References

- Adshead F, Cody DD and Pitt B (1992)
BASDEC: a novel screening instrument for depression in elderly medical inpatients
BMJ 305: 397
- Agosti V, Stewart JW and Quitkin FM (1991)
Life satisfaction and psychosocial functioning in chronic depression: effect of acute
treatment with antidepressants
J Affective Dis 23: 35-41
- Agrell B and Dehlin O (1989)
Comparison of six depression rating scales in geriatric stroke patients
Stroke 20:1190-1194
- Aimson, P (1999)
Effects of nurse education on elderly congestive heart failure patients
(unpublished data)
- Alexopolous G (1992)
Geriatric depression reaches maturity
Int J Geriatr Psychiatr 7: 305-306
- Alexopoulos G (1990)
Clinical and biological findings in late-onset depression
in *Review of Psychiatry vol. 9*
Tasma A, Goldfinger SM and Kaufman CA (eds)
Washington DC: American Psychiatric Press
- Allen N, Ames D, Ashby D, Bennetts K, Tuckwell V and West C (1994)
A brief sensitive screening instrument for depression in late life
Age Ageing, 23: 213-218
- Allman P (1991)
Depressive disorders and emotionalism following stroke
Int J Geriatr Psychiatr 6: 377-383
- American Psychiatric Association (1980)
DSM-III Diagnostic and Statistical Manual of Mental Disorders (3rd edition)
Washington DC: American Psychiatr Association Press
- American Psychiatric Association (1987)
DSM-III-R Diagnostic and Statistical Manual of Mental Disorders (3rd edition,
revised)
Washington DC: American Psychiatr Assoc Press
- American Psychiatric Association (1994)
DSM-IV Diagnostic and Statistical Manual of Mental Disorders (4th edition)
Washington DC: American Psychiatr Assoc Press
- Ames D (1990)
Depression among elderly residents of local authority residential homes: its nature
and the efficacy of intervention
Br J Psychiatr 156: 667-675

- Anderson FW (1936)
Prognosis of the depressions of later life
J Ment Sci 82: 559-588
- Andreason NC and Black DW (1991)
Introductory Textbook of Psychiatry
Washington DC: American Psychiatr Press
- Anstey K and Brodaty H (1995)
Antidepressants and the elderly: double-blind trials 1987-1992
Int J Geriatr Psychiatr; 10: 265-279
- Aromaa A, Raitasalo R, Reunanen A, Impivaara O, Heliövaara M, Knekt P, Lehtinen V, Joukamaa M and Maatela J (1994)
Depression and cardiovascular diseases
Acta Psychiatr Scand suppl 377: 77-82
- Asberg M, Montgomery SA, Perris C, Schalling D and Sedvall G (1978)
A comprehensive psychopathological rating scale.
Acta Psychiatr Scand Suppl. (271): 5-27
- Avery D and Winokur G (1976)
Mortality in depressed patients treated with electroconvulsive therapy and antidepressants
Arch Gen Psychiatr 41: 1029-1037
- Badger LW, deGruy FV, Hartman J, Plant MA, Leeper J, Anderson R, Ficken R, Gaskins S, Maxwell A, Rand E and Templeton B (1994)
Patient presentation, interview content, and the detection of depression by primary care physicians
Psychosom Med 56:128-35
- Baldwin RC (1988)
Delusional and non-delusional depression in late life: evidence for distinct sub-types
Br J Psychiatr 152: 39-44
- Baldwin RC (1991)
Outcome for elderly depressives
Br J Psychiatr 159: 156-157
- Baldwin RC and Jolley DJ (1986)
The prognosis of depression in old age
Br J Psychiatr 149: 574-583
- Barracough BM (1971)
Suicide in the elderly
in *Recent Developments in Psychogeriatrics*
Kay DWK and Walk A (eds.)
Ashford: Headley
- Barsa J, Toner J, Gurland B and Lantigua R (1986)
The ability of internists to recognise and manage depression in the elderly
Int J Geriatr Psychiatry 1: 57-62
- Bartrop RW, Luckhurst E, Lazarus L, Kiloh LG and Penny R (1977)
Depressed lymphocyte function after bereavement
Lancet 1:834-836

- Bech P, Allerup P, Gram LF, Reisby N, Rosenberg R, Jacobsen O and Nagy A (1981)
The Hamilton Depression Scale: evaluation of objectivity using logistic models
Acta Psychiatr Scand 63: 290-299
- Beck AT (1961)
An inventory for measuring depression
Arch Gen Psychiatr 4: 53-63
- Beck AT (1967)
Depression: clinical, experimental and theoretical aspects
London: Harper and Row
- Beck AT and Weishaar ME (1990)
Suicide risk assessment and prediction.
Crisis 11: 22-30
- Beck AT, Brown G, Berchick RJ, Stewart BL and Steer RA (1990)
Relationship between hopelessness and ultimate suicide: a replication with
psychiatric out-patients
Am J Psychiatr 147: 190-195
- Beekman AT, Copeland JR and Prince MJ (1999)
Review of community prevalence of depression in later life
Br J Psychiatr 174: 307-311
- Bellies K and Stoudemire A (1998)
Psychopharmacologic treatment of depression in the medically ill
Psychosomatics 39: S2-S19
- Berkman LF, Berkman CS, Kasl S, Freeman DH, Leo L, Ostfel AM, Huntley JC and
Brody JA (1986)
Depressive symptoms in relation to physical health and functioning in the elderly
Am J Epidem 124: 372-387
- Blanchard MR, Waterrues A and Mann AH (1994)
The nature of depression among older people in inner London, and the contact with
primary care
Br J Psychiatr 164: 396-402
- Blazer DG (1982)
Depression in Late Life
St. Louis: C.V. Mosby
- Blazer D, Burchett B, Service C and George LK (1991)
The association of age and depression among the elderly: an epidemiologic
exploration
J Gerontol 46: M210-215
- Blazer D, Bachar JR and Hughes DC (1987)
Major depression with melancholia: a comparison of middle-aged and elderly adults
JAGS 35: 927-932
- Blazer D and Williams CD (1980)
Epidemiology of dysphoria and depression in an elderly population
Am J Psychiatr 137: 439-444

- Blumenthal MD (1975)
Measuring depressive symptomatology in a general population
Arch Gen Psychiatr 32: 971-978
- Bowler C, Boyle A, Branford M, Cooper S, Harper R and Lindesay J (1994)
Detection of psychiatric disorders in elderly medical inpatients
Age and Ageing 23: 307-311
- Bowling A (1995)
What things are important in people's lives? A survey of the public's judgements to inform scales of health related quality of life
Soc Sci Med 41:1447-62
- Bowling A (1990)
The prevalence of psychiatric morbidity among people aged 85 and over living at home. Associations with reported somatic symptoms and with consulting behaviour
Soc Psychiatry Psychiatr Epidemiol 25: 132-140
- Boyd JH, Burke JD Jr, Gruenberg E, Holzer CE 3d, Rae DS, George LK, Karno M, Stoltzman R, McEvoy L and Nestadt G (1984)
Exclusion criteria of DSM-III: a study of co-occurrence of hierarchy-free syndromes
Arch Gen Psychiatr 41: 983-989
- Boyd JH and Weissman MM (1982)
Epidemiology
In Paykel ES (ed.)
Handbook of Affective Disorders
New York: Guilford Press
- Braithwaite R (1982)
The pharmacokinetics of psychotropic drugs in the elderly
in Wheatley D (ed.)
Pharmacology of Old age
Oxford: Oxford University Press
- Brammah T (1998)
Muscular skeletal disability in the community
(personal communication)
- Bridges KW and Goldberg DP (1984)
Psychiatric illness in inpatients with neurological disorder: patients' views on discussion of emotional problems with neurologists
BMJ 289: 656-658
- Broadhead WE, Blazer DG, George LK and Tse CK (1990)
Depression, disability days, and days lost from work in a prospective epidemiologic survey
J Am Med Assoc 264: 2524-2528
- Brodaty H, Peters K, Boyce P, Hickie I, Parker G, Mitchell P and Wilhelm K (1991)
Age and depression
J Affective Dis 23: 137-149
- Brown RP, Sweeney J, Loutsch E, Kocsis J and Frances A (1984)
Involutional melancholia revisited
Am J Psychiatr 141: 24-28

- Bruce ML and Leaf PJ (1989)
Psychiatric disorders and 15 month mortality in a community sample of older adults
Am J Pub Health 79: 727-730
- Bukberg J, Penman D and Holland JC (1984)
Depression in hospitalized cancer patients
Psychosom Med 46:199-212
- Burke WJ, Nitcher RL, Roccaforte WH and Wengel SP (1992)
A prospective evaluation of the Geriatric Depression Scale in an out-patient geriatric assessment centre
J Am Geriatr Soc 40: 1227-1230
- Burn W, Davies K, Mckenzie F and Brothwell J (1993)
The prevalence of psychiatric illness in acute geriatric admissions
Int J Geri Psychiatr 8:171-174
- Burvill PW (1987)
An appraisal of the NIMH Epidemiologic Catchment Area Program
Aust NZ J Psychiatr 21: 175-184
- Burvill PW, Stampfer H and Hall W (1986)
Does depressive illness in the elderly have a poor prognosis?
Aust NZ J Psychiatr 20: 422-427
- Burvill PW and Hall WD (1994)
Predictors of increased mortality in elderly depressed patients
Int J Geriatr Psychiatr 9: 219-227
- Butler RN and Lewis M (1982)
Aging and Mental Health
St. Louis: Mosby
- Callahan EJ, Bertakis KD, Azari R, Helms LJ, Robbins J and Miller J (1997)
Depression in primary care: patient factors that influence recognition.
Fam Med 29:172-176
- Carroll BJ, Fielding JM, Blashki TG (1973)
Depression rating scales. A critical review
Arch Gen Psychiatry 28: 361-366
- Cattell RB (1978)
The scientific use of factor analysis in behavioral and life sciences
New York: Plenum
- Cavanaugh SV (1984)
Diagnosing depression in the hospitalized patient with chronic medical illness
J Clin Psychiatr 45: 13-16
- Cavanaugh S, Clark DC and Gibbons RD (1983)
Diagnosing depression in the hospitalised medically ill
Psychosomatics 24: 809-815
- Champion LA and Power MJ (1995)
Social and cognitive approaches to depression: towards a new synthesis.
Br J Clin Psychol 34: 485-503

- Chochinov HM, Wilson KG, Enns M and Lander S (1998)
Depression, hopelessness, and suicidal ideation in the terminally ill
Psychosomatics 39: 366-370
- Ciampi L (1969)
Follow-up studies on the evolution of former neurotic and depressive states in old age
Br J Psychiatr 3: 90-106
- Clark DA, Cook A and Snow D (1998)
Depressive symptom differences in hospitalized, medically ill, depressed psychiatric inpatients and nonmedical controls
J Abnorm Psychol 107: 38-48
- Clark LA and Watson D (1991)
Tripartite model of anxiety and depression: psychometric evidence and taxonomic implications
J Ab Psychol 100: 316-336
- Clark DC, Cavanaugh SV and Gibbons RD (1983)
The core symptoms of depression in medical and psychiatric patients
J Nerv Ment Dis 171: 705-713
- Cole MG and Bellevance F (1997)
Depression in elderly medical inpatients: a meta-analysis of outcomes
Can Med Assoc J 157: 1055-1060
- Cole MG and Yaffe MJ (1996)
Pathway to psychiatric care of the elderly with depression
Int J Geriatr Psychiatr 11: 157-161
- Comfrey AL (1978)
Common methodological problems in factor analytic studies
J Cons Clin Psychol 46: 648-659
- Copeland JMR, Gurland BJ, Dewey ME, Kelleher MJ, Smith AMR and Davidson IA (1987a)
The distribution of dementia, depression and neurosis in elderly men and women in an urban community: assessed using the GMS-AGECAT package
Int J Geriatr Psychiatr 2: 177-184
- Copeland JMR, Dewey ME and Griffiths-Jones HM (1986)
Computerised psychiatric diagnosis and case nomenclature for elderly subjects: GMS and AGECAT
Psychological Med 16: 89-99
- Copeland JMR, Dewey ME, Wood N, Searle R, Davidson IA and McWilliam C (1987b)
The range of mental illness amongst the elderly in the community: prevalence in Liverpool
Br J Psychiatr 150: 815-831
- Cowley AJ and Skene AM (1994)
Treatment of severe heart failure: quantity of quality of life? A trial of enoximone
Br Heart J 72: 226-230

- Costa P and McCrae R (1985)
Hypochondriasis, neuroticism and ageing: when are somatic complaints unfounded?
Amer Psychologist 40: 19-28
- Covinsky KE, Kahana E, Chin MH, Palmer RM, Rotinsky RH and Landefeld CS (1999)
Depressive symptoms and 3-year mortality in older hospitalized medical patients
Ann Intern Med 130: 563-569
- Crabtree, BF and Miller, WL (1992)
Doing Qualitative Research
in *Research methods for primary care* vol. 3
London: Sage
- Crawford MJ, Prince M, Menezes P and Mann AH (1998)
The recognition and treatment of depression in older people in primary care
Int J Geriatr Psychiatr 13: 172-6
- Cronbach LJ (1951)
Coefficient alpha and the internal structure of tests
Psychometrika 16: 297-334
- Cumming E and Henry WE (1961)
Growing Old
New York: Basic Books
- D'Ath P, Katona P, Mullan E, Evans S and Katona C (1994)
Screening detection and management of depression in elderly primary care attenders.
I: the acceptability and performance of the 15 item geriatric depression scale
(GDS15) and the development of shorter versions
Fam Prac 11: 206-266
- Davidson J, Turnbull CD, Strickland R, Miller R and Graves K (1986)
The Montgomery-Asberg Depression Scale: reliability and validity
Acta Psychiatr Scand 73: 544-548
- Davidson S and Macleod J (1972)
Principles and Practice of Medicine
Churchill Livingstone: Edinburgh and London
- De Florio ML and Massie MJ (1995)
Review of depression in cancer: gender differences
Depression 3: 66-80
- Dement WC, Miles LE and Carskadon MA (1982)
'White paper' on sleep and aging
J Am Geriatr Soc 30: 25-50
- Derogatis LR, Lipman RS and Covi L (1974)
SCL-90: an outpatient psychiatric rating scale - preliminary report
Psychopharmacology Bull 9: 280-289
- Dessonville C, Gallagher D, Thompson LW, Finnell K and Lewinsohn PM (1982)
Relation of age and health status of depressive symptoms in normal and depressed adults
Essence 5: 99-117

De Vanna M, Paterniti S, Milievich C, Rigamonti R, Sulich A and Faravelli C (1990)
Recent life events and attempted suicide
J Affect Disord 18:51-58

Dewey ME, Davidson IA and Copeland JRM (1993)
Expressed wish to die and mortality in older people: a community replication
Age Ageing 22: 109-113

Dhondt ADF (1995)
Iatrogenic origins of depression in the elderly: is medication a significant aetiologic factor in geriatric depression? Considerations and a preliminary approach (editorial comment)
Int J Geriatr Psychiatry 10: 1-8

Downes JJ, Davies ADM and Copeland JRM (1988)
Organization of depressive symptoms in the elderly population: hierarchical patterns and Guttman scales
Psychology and Aging 3: 367-374

Dworkin SF, Von Korff M, and LeResche L (1990)
Multiple pains and psychiatric disturbance: an epidemiologic investigation
Arch Gen Psychiatry 47:239-244

Ebrahim SA, Barer D and Nouri F (1987)
Affective illness after stroke
Brit J Psychiatry 151: 52-56

Endicott J (1984)
Measurement of depression in patients with cancer
Cancer 53(10 Suppl):2243-2249

Evans JG (1990)
How are the elderly different?
in Improving the Health of Older People: a world view
Kane RL, Evan JG and Macfadyen D (eds)
Oxford: Oxford University Press

Evans ME (1990)
Depression and physical illness in the elderly in the community
RC Psychiatry Annual Meeting Abstracts: 68

Evans ME (1993a)
Depression in elderly physically ill inpatients: a 12-month prospective study
Int J Geriatr Psychiatry 8: 587-592

Evans, ME (1993b)
Development and validation of a screening test for depression in the elderly physically ill
Int Clin Psychopharmacol 8:329-331

Evans M (1996)
Development of a screening test for depression in the elderly frail or physically ill
MD Thesis, Liverpool University

Evans M, Hammond M, Wilson K, Lye M and Copeland J (1997a)
Placebo-controlled treatment trial of depression in elderly physically ill patients
Int J Geriatr Psychiatry 12: 817-824

- Evans M, Hammond M, Wilson K, Lye M and Copeland J (1997b)
Treatment of depression in the elderly: effect of physical illness on response
Int J Geriatr Psychiatr 12: 1189-1194
- Fava GA, Pilowsky I, Pierfederici A, Bernadi M, and Pathak D (1982)
Depressive symptoms and abnormal illness behaviour in general hospital patients
Gen Hosp Psychiatr 4: 171-178
- Fava GA, Zielezny M, Pilowsky I and Trombini G (1984)
Patterns of depression and illness behaviour in general hospital patients
Psychopathology 17: 105-109
- Fedoroff JP, Lipsey JR, Starkstein SE, Forrester A, Price TR and Robinson RG (1991)
Phenomenological comparisons of major depression following stroke, myocardial infarction or spinal cord lesions
J Affective Disord 22: 83-89.
- Feldman E, Mayou R, Hawton K, Ardern M and Smith EBO (1987)
Psychiatric disorder in medical in-patients
Quar J Med 63: 405-412
- Fenton FR, Cole MG, Engelsmann F and Mansouri I (1997)
Depression in older medical inpatients: one-year course and outcome
Int J Geriatr Psychiatr 12: 389-394
- Fischer EH and Goethe JW (1997)
Measurement of depression and anxiety for hospitalized depressed patients
Psychiatr Serv 48: 705-707
- Fleck MP, Poirier-Litre MF, Guelfi JD, Bourdel MC and Loo H (1995)
Factorial structure of the 17-item Hamilton Depression Rating Scale
Acta Psychiatr Scand 92:168-72
- Fleminger S (1991)
Depressive motor retardation
Int J Geriatr Psychiatr 6: 459-468
- Folstein MF, Folstein SE and McHugh PR (1975)
'Mini-Mental State:' a practical method for grading cognitive state of patients for the clinician
J Psychiatric Res 47: 189-196
- Folstein MF and McHugh PR (1978)
Dementia syndrome of depression in Alzheimer's Disease
in Katzman R, Terry RD and Bick KL (eds)
Senile Dementia and Related Disorders
New York: Raven Press
- Folstein MF, Maiberger R and McHugh PR (1977)
Mood disorder as a specific complication of stroke
J Neurol Neurosurg Psychiatry 40: 1018-1020
- Ford DE and Kamerow DB (1989)
Epidemiological studies of sleep disturbances and psychiatric disorders: an opportunity for prevention?
J Am Med Ass 262: 1479-1484

- Forsell Y, Jorm AF, Fratiglioni L, Grut M and Winblad B (1993)
Application of DSM-III-R criteria for major depressive episode to elderly subjects with and without dementia
Am J Psychiatry 150: 1199-1202
- Fredman L, Schoenbach V, Kaplan BH, Blazer DG, James SA, Kleinbaum DG and Yankaskas B (1989)
The association between depressive symptoms and mortality among older participants in the Epidemiologic Catchment Area-Piedmont Health Survey
J Gerontol (Soc Sci): S149-S156
- Freedman N, Bucci W and Elkowitz E (1982)
Depression in a family practice elderly population
J Am Geriatr Soc 30: 372-377
- Gaitz CM and Scott J (1972)
Age and measurement of mental health
J Health Soc Behav 13: 55-67
- Georgotas A (1983)
Affective disorders in the elderly: diagnostic and research considerations
Age Ageing 12: 1-10
- Girling DM, Huppert FA, Brayne C, Paykel ES, Gill C and Mathewson D (1995)
Depressive symptoms in the very elderly - their prevalence and significance
Int J Geri Psychiatr 10: 497-504
- Giron M, Manjon-Arce P, Puerto-Barber J, Sanchez-Garcia E, Gomez-Beneyto M (1998)
Clinical interview skills and identification of emotional disorders in primary care
Am J Psychiatry 155: 530-535
- Gjerris A, Bech P, Bojholm S, Bolwig TG, Kramp P, Clemmesen L, Andersen J, Jensen E and Rafaelsen OJ (1983)
The Hamilton Anxiety Scale. Evaluation of homogeneity and inter-observer reliability in patients with depressive disorders.
J Affect Disord 5: 163-170
- Goldberg D (1979)
Detection and assessment of emotional disorders in a primary care setting
Int J Ment Health 8: 30-48
- Goldfarb AI (1974)
Masked depression in the elderly
in Lesse E (ed.)
Masked Depression
New York: Jason Aronson
- Goldney RD and Hugo M (1984)
Factors associated with 'masked' psychological illness in the elderly
Psychopathology 17: 228-232
- Good WR, Vlachonikolis P, Griffiths P and Griffiths RA (1987)
The structure of depressive symptoms in the elderly
Br J Psychiatr 150: 463-470
- Greene SM, O'Mahony PD and Rungasamy P (1982)
Levels of measured hopelessness in physically-ill patients
J Psychom Res 26: 591-593

- Gregory RL, Jimerson DC, Walton BE, Daley J and Paulsen RH (1992)
Pharmacotherapy of depression in the medically ill: directions for future research
Gen Hosp Psychiatry 14: 36-42
- Gullette EC, Blumenthal JA, Babyak M, Jiang W, Waugh RA, Frid DJ, O'Connor CM, Morris JJ and Krantz DS (1997)
Effects of mental stress on myocardial ischemia during daily life
J Am Med Assoc 277: 1521-1526
- Gurland B (1976)
The comparative frequency of depression in various adult age groups
J Gerontol 31: 283-292
- Gurland BJ, Copeland JRM, Kelleher MF, Kuriansky J, Sharpe L and Dean L. (1983)
The mind and mood of aging: the mental health problems of the community elderly in New York and London.
London: Croom Helm 1983
- Gurland BJ, Kuriansky J, Sharpe L, Simon R, Stiller P and Birkett P (1977)
The Comprehensive Assessment and referral Schedule (CARE): rationale, development and reliability
Int J Ageing Hum Dev 8: 9-42
- Gurland BJ, Wilder DE and Berkman C (1988)
Depression and disability in the elderly: reciprocal relations and changes with age
Int J Geriatr Psychiatr 3: 163-179
- Hall RCW, Popkin MK, Devaul RA, Faillace LA and Stickney SK (1978)
Physical illness presenting as psychiatric disease
Arch Gen Psychiatry 35: 1315-1320
- Hamilton M (1960)
A rating scale for depression
J Neurol Neurosurg Psych 23: 56-62
- Hamilton M. (1967)
Development of a rating scale for primary depressive illness
Brit J Soc Clin Psychiat 6: 278-286
- Hammond MF (2000)
Recognising depression: doctors' practice and the GDS (abstract)
Age Ageing (in press)
- Hammond MF, Evans ME and Lye M (1993)
Depression in medical wards (letter)
Int J Geriatr Psychiat 8: 957-958
- Hammond MF, Evans ME, O'Keefe S and Lye M (1997)
Influence of depression on Mini Mental State Exam scores in elderly in-patients
Age Ageing 26 (supp 1):
- Hammond MF, O'Keefe ST and Barer D (2000)
Development of an observer-rated screening scale for depression in elderly medical patients
Age Ageing (in press)

- Hare DL and Davis CR (1996)
 Cardiac Depression Scale: validation of a new depression scale for cardiac patients
J Psychosomatic Res 40: 379-386
- Harper RG, Kotik-Harper D, Kirby H (1990)
 Psychometric assessment of depression in an elderly general medical population. Over- or under-assessment?
J Nerv Ment Dis 178: 113-119
- Harris RE, Mion LC, Patterson MB and Frenghley JD (1988)
 Severe illness in older patients: the association between depressive disorders and functional dependency during the recovery phase
J Amer Geriatr Soc 36: 890-896
- Hawton K, Mayou R and Feldman E (1990)
 Significance of psychiatric symptoms in general medical patients with mood disorders
Gen Hosp Psychiatr 12: 296-302
- Henderson AS (1990)
 Epidemiology of dementia disorders
Adv Neurol 51: 15-25
- Henderson AS, Jorm AF, Mackinnon A, Christensen H, Scott LR, Korten AE and Doyle C (1993)
 The prevalence of depressive disorders and the distribution of depressive symptoms in later life: a survey using Draft ICD-10 and DSM-III-R
Psychol Med 23: 719-729
- Henry JA and Martin AJ (1987)
 The risk-benefit assessment of antidepressant drugs
Medical Toxicology 2: 445-462
- Herrmann C, Brand-Driehorst S, Kaminsky B, Leibing E, Staats H and Ruger U (1998)
 Diagnostic groups and depressed mood as predictors of 22-months mortality in medical inpatients
Psychosomatic Med 60: 570-577
- Himmelhoch JM, Auchenbach R and Fuchs CZ
 The dilemma of depression in the elderly
J Clin Psychiatry 43: 26-32
- House A (1987)
 Mood disorders after stroke: a review of the evidence
Int J Geriatr Psychiatr 2: 211-221
- House A (1988)
 Mood disorders in the physically ill--problems of definition and measurement
J Psychosom Res 32: 345-353
- House A, Dennis M, Hawton K and Warlow C (1989)
 Methods of identifying mood disorders in stroke patients; experience in the Oxfordshire Community Stroke Project
Age Ageing 18: 371-379

Ineichen B (1987)
Measuring the rising tide
Br J Psychiatr 150: 193-200

Jablensky A (1987)
Prediction of the course and outcome of depression
Psychol Med 17: 1-9

Jackson R and Baldwin B (1993)
Detecting depression in elderly medically ill patients: the use of the Geriatric Depression Scale compared with medical and nursing observations
Age Ageing 22: 349-353

Jacoby RJ (1981)
Depression in the elderly.
Br J Hosp Med 25: 40-7

Jarvik LF (1976)
Aging and depression: some unanswered questions
J Gerontol 31: 324-326

Jarvik L and Perl M (1981)
Overview of physiologic dysfunctions related to psychiatric problems in the elderly in Levenson AJ and Hall RCW (eds.)
Neuropsychiatric Manifestations of Psychological Disease in the Elderly
New York: Raven

Johnson CL and Barer BM (1997)
Life Beyond 85 Years: the Aura of Survivorship
New York: Springer Publishing company

Jorm AF, Scott R, Cullen JS and MacKinnon AJ (1991)
Performance of the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) as a screening test for dementia
Psychol Med 21: 785-790

Kafonek S, Ettinger WH, Roca R, Kittner S, Taylor N and German PS (1989)
Instruments for screening for depression and dementia in a long-term care facility
J Am Geriatr Soc 37: 29-34

Kahn RL, Zarit SH, Hilbert NM and Niederehe G (1975)
Memory complaint and impairment in the aged. The effect of depression and altered brain function.
Arch Gen Psychiatry 32: 1569-1573

Kathol RG, Noyes R, Williams J, Mutgi A, Carroll B and Perry P (1990a)
Diagnosing depression in patients with medical illness
Psychosomatics 31: 434-440

Kathol RG, Mutgi A, Williams J, Clamon G and Noyes R Jr (1990b)
Major depression diagnosed by DSMIII, DSMIIIR, RDC, and Endicott criteria in patients with cancer
Am J Psychiatry 147: 1021-1024

Katon W (1984)
Depression: relationship to somatization and chronic medical illness
J Clin Psychiatr 45: 4-12

Katona CLE (1991)
Psychiatry of old age: Depression in old age
Rev Clin Gerontol 1: 371-384

Katona CLE. (1994)
Depression in Old Age
Chichester: John Wiley and Sons Ltd.

Katona CLE and Aldridge CR (1985)
The dexamethasone suppression test and depressive signs in dementia
J Affective Dis 8: 83-89

Kay DWK (1988)
Anxiety in the elderly
in Noyes R, Roth M and Burrows GD (eds.)
Handbook of anxiety, vol.2
Amsterdam: Elsevier

Kearns NP, Cruickshank CA, McGuigan KJ, Riley, SA, Shaw SP and Snaith RP
(1982)
A comparison of depression rating scales
Br J Psychiat 141: 45-49

Kennedy GJ, Kelman HR, Thomas C, Wisniewski W, Metz H and Bijur PE (1989)
Hierarchy of characteristics associated with depressive
symptoms in an urban elderly sample.
Am J Psychiatr 146: 220-225

Kennedy, GJ, Kelman HR and Thomas C (1990)
The emergence of depressive symptoms in late life: the importance of declining
health and increasing disability
J Comm Health 15: 93-104

Kennedy GJ, Kelman HR and Thomas C (1991)
Persistence and remission of depressive symptoms in late life
Am J Psychiatr 148: 174-178

Keshavan MS (1997)
Iatrogenic depression
in Robertson MM and Katona CLE (eds.)
Depression and Physical Illness
Chichester: John Wiley and Sons Ltd.

Kiecolt-Glaser JK, Marucha PT, Malarkey WB, Mercado AM and Glaser R (1995)
Slowing of wound healing by psychological stress
Lancet 346:1194-6

Kiloh G (1961)
Pseudodementia
Acta Psychiatr Scand 37: 336-351

Kishi U, Robinson RG and Kosier JT (1996)
The validity of observed depression as a criteria for mood disorders in patients with
acute stroke
J Affective Disord 40: 53-60

- Kivela S-L (1994)
Depression and physical and social functioning in old age
Acta Psychiatr Scand supp 377: 73-76
- Kivela S-L and Pakkala K (1988)
Factor structure of the Hamilton rating scale for depression among depressed elderly Finns
Zeitschrift Gerontol 21: 257-263
- Klein DF (1974)
Endogenomorphic depression
Archives of Gen Psychiatry 31: 447-454
- Klerman GL (1983)
Problems in the definition and diagnosis of depression in the elderly
in Breslau LO and Haig MR (eds)
Depression and Ageing: causes, care and consequences
New York: Springer
- Kline P (1994)
An Easy Guide to Factor Analysis
London: Routledge
- Koder D, Brodaty H and Anstey K (1996)
Cognitive therapy for depression in the elderly
Int J Geriatr Psychiatry 11: 97-107
- Koenig HG (1998)
Depression in hospitalized older patients with congestive heart failure
Gen Hosp Psychiatry 20: 29-43
- Koenig HG, Cohen HJ, Blazer DG, Krishnan KRR and Sibert TE (1993)
Profile of depressive symptoms in younger and older medical inpatients with major depression
J Am Geri Soc 41: 1169-1176
- Koenig HG, George LK, Larson DB, McCullough ME, Branch PS and Kuchibhatla M (1999)
Depressive symptoms and nine-year survival of 1001 male veterans hospitalized with medical illness
Am J Geriatr Psychiatry 7: 124-131
- Koenig H, Goli V, Shelp F, Kudler H, Cohen H, and Blazer D (1992)
Major depression in hospitalized medically ill older men: documentation, management and outcome
Int J Geri Psychiatry 7: 25-34
- Koenig HG, Goli V, Shelp F, Kudler HS, Cohen HJ, Meador KG and Blazer D (1989a)
Antidepressant use in elderly medical inpatients: lessons from an attempted clinical trial
J Gen Int Med 4: 498-505
- Koenig HG, Shelp F, Goli V, Cohen HJ and Blazer DG (1989b)
Survival and health care utilization in elderly medical inpatients with major depression
J Am Geriatr Soc 37: 599-606

- Koenig H, Meador K, Cohen H, and Blazer D (1988a)
Depression in elderly hospitalized patients with medical illness
Arch Int Med 148: 1929-1936
- Koenig HG, Meador KG, Cohen HJ and Blazer DG (1988b)
Self-rated depression scales and screening for major depression in the older hospitalized patient with medical illness
JAGS 36:699-706
- Koenig HG, Pappas P, Lholsinger T and Bachar JR (1995)
Assessing diagnostic approaches to depression in medically ill older adults: how reliably can mental health professionals make judgements about the cause of symptoms?
J Am Geriatr Soc: 43: 472-478
- Kraepelin E (1913)
Psychaitre 8, Auflage, Bond 3
J. Bark: Leipzig
- Kral VA and Emery OB (1989)
Long term follow-up of depressive pseudodementia of the aged
Can J Psychiatr 34: 445-456
- Kukell WA, Koepsall TD, Inui TS, Borson S, Okimoto J, Raskind MA and Gale JL (1986)
Depression and physical illness among elderly general medical clinic patients
J Affective Disord 10: 153-162
- Lampic C, von Essen L, Peterson VW, Larsson G and Sjoden PO (1996)
Anxiety and depression in hospitalized patients with cancer: agreement in patient-staff dyads
Cancer Nurs 19: 419-428
- Langer KG (1994)
Depression in disabling illness: severity and patterns of self-reported symptoms in three groups
J Geriatr Psychiatry Neurol 7:121-8.
- Lawton MP, Parmelee PA, Katz IR and Nesselroade J (1996)
Affective states in normal and depressed older people
J Gerontol 51B: P309-P316
- Leibenluft E and Goldberg RL (1988)
The suicidal, terminally ill patient with depression
Psychosomatics 29: 379-386
- Levkoff SE, Cleary PD and Wette T (1987)
Differences in the appraisal of health between aged and middle-aged adults
J Gerontology 42: 114-120
- Lewisohn PM and MacPhillam DJ (1974)
The relationship between age and engagement in pleasant activities
J Gerontol 29: 290-294
- Lewisohn P, Rohde P, Seeley J and Fischer S (1991)
Age and depression: unique and shared affects
Psychology and Aging 6: 247-260

- Lindesay J (1989)
Nonsuicidal mortality in late-life depression.
J Geriatr Psychiatry 22: 53-65
- Lindesay J (1990)
The Guy's/Age Concern survey: physical health and psychiatric disorder in an urban elderly community
Int J Geri Psychiat 5: 171-178
- Lindesay J, Briggs K and Murphy E (1989)
The Guy's/Age Concern survey. Prevalence rates of cognitive impairment, depression and anxiety in an urban elderly community
Br J Psychiatry 155: 317-329
- Lipowski ZJ (1969)
Psychosocial aspects of disease.
Ann Intern Med 71:1197-206
- Lloyd GG and Cawley RH (1983)
Distress or illness? A study of psychological symptoms after myocardial infarction
Br J Psychiatry 142:120-125
- Lofland J and Lofland LH (1983)
Analyzing Social Settings
Belmont: Wadsworth
- Loke B, Nicklason F and Burvill P (1996)
Screening for depression: clinical validation of geriatricians' diagnosis, the Brief Assessment Schedule depression cards and the 5-item version of the Symptom Check List among non-demented geriatric patients
Int J Geri Psychiat 11: 461-465
- Lykouras E, Ioannidis C, Voulgari A, Jemos J and Tzonou A (1989)
Depression among general hospital patients in Greece
Act Psychiatr Scand 79: 148-152
- Lyons JS, Strain JJ, Hammer JS, Ackerman AD and Fulop G (1989)
Reliability, validity, and temporal stability of the geriatric depression scale in hospitalized elderly.
Int J Psychiatry Med. 19: 203-209.
- MacDonald AJD (1986)
Do general practitioners 'miss' depression in elderly patients?
Br Med J 292: 1365-1367
- McDonald MV, Passik SD, Dugna W, Rosenfeld B, Theibald DE and Edgerton S (1999)
Nurses' recognition of depression in their patients with cancer
Oncol Nurs Forum 26: 593-599
- Macdonald A, Mann A, Jenkins R, Richard L, Godlove C and Rodwell G (1982)
An attempt to determine the impact of four types of care upon the elderly in London by the study of matched groups
Psychol Med 12: 193-200
- Magni G, de Leo D and Shifano F (1985)
Depression in geriatric and adult medical inpatients
J Clin Psychol 41: 337-344

Maguire GP, Hopwood P, Tarrier N and Howell T (1985)
Treatment of depression in cancer patients
Act Psychiatr Scand 72 (supp 320): 81-84

Maguire GP, Julier DL, Hawton KE and Bancroft JHJ (1974)
Psychiatric morbidity and referral on two general medical wards
BMJ 1: 268-270

Mahoney J, Drinka TJ, Abler R, Gunter-Hunt G, Matthews C, Gravenstein S and
Carnes M (1994)
Screening for depression: single question versus GDS.
J Am Geriatr Soc 42: 1006-1008

Maier W, Philipp M, Heuser I, Schlegel S, Buller R and Wetzel H (1988a)
Improving depression severity assessment--1. Reliability, internal validity and
sensitivity to change of three observer depression scales
J Psychiatr Res 22: 3-12.

Maier W, Heuser I, Philipp M, Frommberger U and Demuth W (1988b)
Improving depression severity assessment--II. Content, concurrent and external
validity of three observer depression scales
J Psychiat Res 22: 13-19

Manela M, Katona C and Livingston G (1996)
How common are the anxiety disorders in old age?
Int J Geriatr Psychiatr 11: 65-70

Mathew RJ, Weinman ML and Mirabi M (1981)
Physical symptoms of depression
Br J Psychiatr 139: 293-296.

Mayou R and Hawton K (1986)
Psychiatric disorder in the general hospital
Br J Psychiatr 149: 172-190

Mays N and Pope C (1995)
Rigour and qualitative research
Br Med J 311: 109-112

Meats P, Timol M and Jolley D (1991)
Prognosis of depression in the elderly
Br J Psychiatr 159: 659-663

Mehta DK (ed.) (1997)
British National Formulary
London: British Medical Association and Royal Pharmaceutical Society of Great
Britain

Moffic JS and Paykel ES (1975)
Depression in medical in-patients
Brit J Psychiatr 126: 346-353

Moldin SO, Scheftner WA, Rice JP, Nelson E, Knesevich MA and Akiskal H (1993)
Association between major depressive disorder and physical illness
Psychol Med 23:755-61

- Montgomery SA and Asberg M (1979)
A new depression scale designed to be sensitive to change
Brit J Psychiat 134: 382-389
- Morris RG and Morris LW (1991)
Cognitive and behavioural approaches with the depressed elderly
Int J Geriatr Psychiatr 6: 407-413
- Morris PL, Raphael B and Robinson RG (1992)
Clinical depression is associated with impaired recovery from stroke.
Med J Aust 157: 239-242
- Morris PLP, Robinson RG, Andrzejewski P, Samuels J and Price TR (1993)
Association of depression with 10-year poststroke mortality
Am J Psychiatr 150: 124-129
- Murphy E (1983)
The prognosis of depression in old age
Brit J Psychiat 142: 111-119
- Murphy E, Smith R, Lindsay J and Slattery J (1988)
Increased mortality rates in late-life depression
Br J Psychiatr 152: 347-353
- Musetti L, Perugi G, Soriani A, Rossi, VM, Cassan GB and Akiskal HS (1989)
Depression before and after age 65: a re-examination
Br J Psychiatr 155: 330-336
- Nelson JC and Charnley DS (1981)
The symptoms of major depressive illness
American Journal of Psychiatry 138: 1-13
- Neugarten BL (1975)
The future and the young-old.
Gerontologist 15(1 Pt. 2): 4-9
- Newmann JP (1989)
Aging and depression
Psychol Aging 4: 150-165
- Newmann JP, Engel RJ and Jensen JE (1991)
Age differences in depressive symptom experiences
J Gerontol 46: P224-P235
- Norusis MJ (1990)
SPSS advanced statistics: user's guide
Chicago: SPSS
- Norusis MJ (1988)
SPSS-X advanced statistics guide (2nd ed)
Chicago: SPSS
- Nunnally JC (1978)
Psychometric Theory (2nd edition)
New York: McGraw Hill
- O'Connor DW, Pollitt PA, Hyde JB, Brook CP, Reiss BB and Roth M (1988)
Do general practitioners miss dementia in elderly patients?
Brit Med J 297: 1107-1110

Okimoto JT, Barnes RF, Veith RC, Raskind MA, Inui TS and Carter WB (1982)
Screening for depression in geriatric medical patients
Am J Psychiatry 139:799-802

Onega LL and Abraham IL (1997)
Factor structure of the Hamilton Rating Scale for depression in a cohort of
community-dwelling elderly
Int J Geriatr Psychiatry 12: 760-764

O'Riordan TG, Hayes JP, O'Neill D, Shelley R, Walsh JB and Coakley D (1990)
The effect of mild to moderate dementia on the Geriatric Depression Scale and on
the General Health Questionnaire
Age Ageing 19: 57-61

O'Riordan TG, Hayes JP, Shelley R, O'Neill D, Walsh JB and Coakley D (1989)
The prevalence of depression in an acute geriatric medical assessment unit
Int J Geriatr Psychiatry 4: 17-21

Ouslander JG (1982)
Physical illness and depression in the elderly.
J Am Geriatr Soc 30: 593-599

Oxman TE, Barrett JE, Barrett J and Gerber P (1990)
Symptomatology of late-life minor depression among primary care patients
Psychosomatics 31: 174:180

Palinkas LA, Wingard DL and Barrett-Connor E (1990)
The biocultural context of social networks and depression among the elderly
Soc Sci Med 30: 441-447

Parikh RM, Lipsey JR, Robinson RG and Price TR (1988)
A two year longitudinal study of poststroke mood disorders: prognostic factors
related to one and two year outcome
Int J Psychiatr Med 18: 45-56

Parikh RM, Robinson RG, Lipsey JR, Starkstein SE, Fedoroff JP and Price TR
(1990)
The impact of poststroke depression on recovery in activities of daily living over a 2-
year follow-up
Arch Neurol 47: 785-789

Parmalee PA, Katz IR and Lawton MP (1989)
Depression among institutionalized aged: assessment and prevalence estimation
J Gerontol 44: M22-M29

Parmalee PA, Katz IR and Lawton MP (1991)
The relation of pain to depression among institutionalized aged
J Gerontol 46: 15-21

Passik SD, Dugan W, McDonald MV, Rosenfeld B, Theobald DE and Edgerton S
(1998)
Oncologists' recognition of depression in their patients with cancer
J Clin Oncol 16: 1594-1600

Patton MQ (1990)
Qualitative Evaluation and Research Methods
Newbury Park: Sage

Penninx BWJH, Beekman ATF, Ormel J, Kriegsman DMW, Boeke AJP, van Eijk JThM and Deeg DJH (1996)
Psychological status among elderly people with chronic diseases: does type of disease play a part?
J Psychosom Res 40: 521-534

Penninx BWJH, Guralnik JM, Ferrucci L, Simonsick EM, Deeg DJH and Wallace RB (1998)
Depressive symptoms and physical decline in community-dwelling older persons
J Am Med Assoc 279: 17720-1726

Phanjoo AL, Wonnacott S and Hodgson A (1991)
Double-blind comparative multicentre study of fluvoxamine and mianserin in the treatment of major depressive episode in elderly people.
Acta Psychiatr Scand 83: 476-479

Philpot MP (1986)
Biological factors in depression in the elderly
In Murphy E (ed.)
Affective Disorders in the Elderly
Edinburgh: Churchill-Livingstone

Pierce D (1987)
Deliberate self-harm in the elderly
Int J Geriatr Psychiat 2: 105-110

Pilowsky I (1978)
A general classification of abnormal illness behaviours
Br J Med Psychol 51: 131-137

Pilowsky I and Spence ND (1983)
Manual for the Illness Behaviour Questionnaire (IBQ) 2nd Edition
Adelaide: University of Adelaide

Pitt B (1991)
Depression in the general hospital setting
Int J Geriatr Psychiat 6: 363-370

Pitt BM (1988)
Lofepamine in the elderly
Int Clin Psychopharmacol 3 Suppl 2: 49-54

Poon LW (1985)
Differences in human memory with aging: Natures, causes and implications
In Birren JE and Schaie KW (eds.)
Handbook of the Psychology of Aging
New York: Van Nostrand Reinhold

Popkin MK, Callies AL, and Mackenzie TB (1985)
The outcome of antidepressant use in the medically ill
Arch Gen Psychiatr 42: 1160-1163

Post F (1962)
The Significance of Affective Disorders in Old Age
Maudsley Monographs No: 10
London: Oxford University Press

Post F (1972)

The management and nature of depressive illnesses in late life: a follow-through study.
Br J Psychiatry 121: 393-404

Proffitt C, Augspurger P, Byrne M (1996)

Geriatric depression: a survey of nurses' knowledge and assessment practices.
Issues Ment Health Nurs 17:123-30

Radloff LS (1977)

The CES-D scale: a self-report depression scale for research in the general population
App Psychol Meas 1: 385-401

Rahman MK, Akhtar MJ, Savla NC, Sharma RR, Kellett JM and Ashford JJ (1991)

A double-blind, randomised comparison of fluvoxamine with dothiepin in the treatment of depression in elderly patients.
Br J Clin Pract 45: 255-258.

Ramsey R, Wright P, Katz A, Bielawska C and Katona C (1991)

The detection of psychiatric morbidity and its effect on outcome in acute elderly medical admissions
Int J Geriatr Psychiatr 6: 861-866

Rapp SR, Parisi SA, Walsh DA and Wallace CE (1988a)

Detecting depression in elderly medical in-patients
J Cons Clin Psychol 56: 509-513

Rapp SR, Parisi SA and Walsh DA (1988b)

Psychological dysfunction and physical health among elderly medical inpatients
J Cons Clin Psychol 56: 851-855

Rapp SR and Vrana S (1989)

Substituting nonsomatic for somatic symptoms in the diagnosis of depression in elderly male medical patients
Am J Psychiatr 146: 1197-1200

Ravindran AV, Welburn K and Copeland JRM (1994)

Semi-structured depression scale sensitive to change with treatment for use in the elderly
Br J Psychiatr 164: 522-527

Regier DA, Myers JK, Kramer M, Robins LN, Blazer DG, Hough RL, Eaton WW and Locke BZ (1984)

The NIMH Epidemiologic Catchment Area program. Historical context, major objectives, and study population characteristics.
Arch Gen Psychiatry 41:934-941

Rehm LP and O'Hara (1985)

Item characteristics of the Hamilton Rating Scale for Depression
J Psychiatric Res 19: 31-41

Reifler BV, Larson E, Teri L and Poulsen M (1986)

Dementia of the Alzheimer's type and depression.
J Am Geriatr Soc 34: 855-859

Rennie DL, Phillips JR and Quartaro GK (1988)

Grounded theory: a promising approach to conceptualization in psychology?
Canadian Psychol 29: 139-150

Renshaw DC (1973)
Depression in the 1970s
Dis Nerv Syst 34: 241

Richelson E (1993)
Treatment of acute depression
Psychiatr Clin North Am 16: 461-478

Ribot T (1896)
La Psychologie des Sentiments
Felix Alcan: Paris

Rifkin A, Reardon G, Siris S, Karagji B, Kim YS, Hackstaff L and Endicott N
(1985)
Trimipramine in physical illness with depression
J Clin Psychiatry 46: 4-8

Roach MJ, Connors AF, Dawson NV, Wenger NS, Wu AW, Tsevat J, Desbiens N,
Covinsky KE and Schubert DS (1998)
Depressed mood and survival in seriously ill hospitalized adults
Arch Int Med 158: 397-404

Robins LN, Helzer JE, Weissman MM, Orvaschel H, Gruenberg E, Burke JD Jr and
Regier DA (1984)
Lifetime prevalence of specific psychiatric disorders in three sites
Arch Gen Psychiatr 41: 949-958

Robinson JR (1989)
The natural history of mental disorder in old age: a long-term study
Br J Psychiatr 154: 783-789

Robinson RG and Benson DF (1981)
Depression in aphasic patients: frequency, severity and clinical-pathological
correlation
Brain Language 14: 282-291

Robinson RG, Bolduc P and Price TR (1987)
A two-year longitudinal study of post-stroke depression. Diagnosis and outcome at
one and two-year follow up
Stroke 18: 837-843

Robinson R and Starkstein S (1989)
Mood disorders following stroke: new findings and future directions
J Geriatr Psychiatr 22: 1-15

Robinson RG, Starr LB, Kubos KL and Price TR (1983)
A two-year longitudinal study of post-stroke mood disorders: findings during the
initial evaluation
Stroke 14:736-741

Rodin G and Voshart K (1986)
Depression in the medically ill: an overview
Am J Psychiat 143: 696-705

Roohanna R and Pitt R (1989)
Psychiatric morbidity in patients admitted to geriatric wards
in *The 4th Congress of the International Psychogeriatric Association Program and
Abstracts*
Tokyo: International Psychogeriatric Association

Rosenberg SJ, Peterson RA, Hates JR, Hatcher J and Headen S (1988)
Depression in medical in-patients
Br J Med Psychol 61: 245-254

Rossmann I (1979)
Mortality and morbidity overview
in Rossmann I (ed.)
Clinical Geriatrics
Philadelphia: Lippincott

Royal College of Physicians (1992)
Standardised assessment scales for elderly people. Report of joint workshops of the Research Unit of the Royal College of Physicians and the British Geriatrics Society
London: Royal College of Physicians of London

Ruegg RG, Zisook S and Swerdow NR (1988)
Depression in the aged, an overview
Psychiatr Clin N Am 11: 83-99

Ryan DH, Blackburn P, Lawley D, Ellis A, Musil J and Kendrick DC (1995)
Depression and dementia in geriatric inpatients: diagnostic comparisons between psychiatrists, geriatricians and test scores
Int J Geriatr Psychiatr 10: 447-456

Sadavoy J, Smith I, Conn DK and Richards B (1990)
Depression in geriatric patients with chronic medical illness
Int J Geri Psychiatr 5: 187-192

Salamero M and Marcos T (1992)
Factor study of the Geriatric Depression Scale
Acta Psychiatr Scand 86:283-286

Salmon P, Peters S and Stanley I (1999)
Patients' perceptions of medical explanations for somatisation disorders: qualitative analysis
Br Med J 318: 372-376.

Salthouse TA (1985)
Speed of behaviour and its implications for cognition
in Birren JE and Schaie KW (eds.)
Handbook of the Psychology of Aging
New York: Van Nostrand Reinhold

Salzman C and Shader RI (1978)
Depression in the elderly. I. Relationship between depression, psychologic defense mechanisms and physical illness
J Am Geriatr Soc 26: 253-260

Saunders PA, Copeland JRM, Dewey ME, Gilmore C, Larkin BA, Phaterpekar H and Scott A (1993)
The prevalence of dementia, depression and neurosis in later life: the Liverpool MRC-ALPHA study
Int J Epidemiol 22: 838-847

Schein RL and Koenig HG (1997)
The Center for Epidemiological Studies-Depression (CES-D) Scale: assessment of depression in the medically ill elderly
Int J Geriatr Psychiatr 12: 436-446

- Schleifer SJ, Macari-Hinson MM, Coyle DA, Slater WR, Kahn M, Gorlin R and Zucker HD (1989)
The nature and course of depression following myocardial infarction
Arch Intern Med 149:1785-1789
- Schuckit MA, Miller PL and Hahlbohm D (1975)
Unrecognized psychiatric illness in elderly medical-surgical patients
J Gerontology 30(6) 655-660
- Schubert DS, Taylor D, Lee S, Mentari A and Tamaklo W (1992)
Physical consequences of depression in the stroke patient
Gen Hosp Psychiatr 14: 69-76
- Schwab JJ, Bialow M, Clemmons R, Martin P and Holzer CE 1967
The Beck Depression Inventory with medical inpatients
Acta Psychiatrica Scand 43: 255-66
- Series HG (1991)
Drug treatment of depression in medically ill patients
J Psychosom Res 36:1-16
- Shah A (1998)
Can depression and depressive symptoms predict mortality at 18-month follow-up in acutely medically ill inpatients over the age of 80 years?
Int J Geriatr Psychiatr 13: 240-243
- Shah A and Gray T (1997)
Screening for depression on continuing care psychogeriatric wards
Int J Geriatr Psychiatr 12: 125-127
- Shah A, Herbert R, Lewis S, Mahendran R, Platt J and Bhattacharyya B (1997)
Screening for depression among acutely ill geriatric inpatients with a short geriatric depression scale
Age Ageing 26: 217-212
- Shapiro S, Skinner EA, Kessler LG, Von Korff M, German PS, Tischler GL, Leaf PH, Benham L, Cottler L and Regier DA (1984)
Utilization of health and mental health services: three epidemiologic catchment area sites
Arch Gen Psychiatr 41: 971-978
- Sheikh JA and Yesavage JA (1986)
Geriatric Depression Scale (GDS): recent evidence and development of a shorter version
Clin Gerontol 5: 165-173
- Shulman KI (1989)
Conceptual problems in the assessment of depression in old age
Psychiatr J Univ. Ottawa 14: 364-366
- Siegel S and Castellan NJ (1988)
Nonparametric Statistics for the Behavioral Sciences
New York: McGraw-Hill
- Silverstone PH (1990a)
Depression increase mortality and morbidity in acute life-threatening illness
J Psychosom Res 34: 651-657

- Silverstone PH (1990b)
Changes in depression scores following life-threatening illness
J Psychosom Res 34: 659-663
- Silverstone PH (1991)
Measuring depression in the physically ill
Int J Methods Psychiat Res 1: 3-12
- Silverstone PH (1994)
Poor efficacy of the Hospital Anxiety and Depression Scale in the diagnosis of major depressive disorder in both medical and psychiatric patients
J Psychosom Res 38: 441-450
- Silverstone PH (1996a)
Concise Assessment for Depression (CAD): a brief screening approach to depression in the medically ill
J Psychosomatic Res 41: 161-170
- Silverstone PH (1996b)
Prevalence of psychiatric disorders in medical inpatients
J Nerv Ment Dis 184: 43-51
- Silverstone PH, Lemay T, Elliott J, Hsu V and Starko R (1996)
The prevalence of major depressive disorder and low self-esteem in medical inpatients
Can J Psychiatr 41: 67-74
- Simon GE, VonKorff M, Piccinelli M, Fullerton C and Ormel J (1999)
An international study of the relation between somatic symptoms and depression
N Engl J Med 341: 1329-1335
- Small GW (1991)
Recognition and treatment of depression in the elderly
J Clin Psychiatr 52: 11-22
- Smith A, Maynard A, Evans JG and Harris J (1989)
The ethics of resource allocation - proceedings of a symposium held at the University of Manchester during the 33rd annual scientific meeting of the Society for Social Medicine, September 1989
J Epidemiol Community Health 44: 187-190
- Snaith RP, Harrop RM, Newby DA and Teale C (1986)
Grade scores of the Montgomery-Asberg Depression and the Clinical Anxiety Scales.
Br J Psychiatry 148: 599-601
- Song F, Freemantle N, Sheldon TA, House A, Watson P, Long A and Mason J (1993)
Selective serotonin reuptake inhibitors: meta-analysis of efficacy and acceptability.
Br Med J 306: 683-687
- Spitzer RL, Endicott J and Robins E (1978)
Research Diagnostic Criteria: rationale and reliability
Arch Gen Psychiatr 35:773-782
- Spurrell MT and Creed FH (1993)
Lymphocyte response in depressed patients and subjects anticipating bereavement
Br J Psychiatry 162:60-64

- Starkstein SE and Robinson RG (1989)
Affective disorders and cerebral vascular disease
Br J Psychiatr 154: 170-182
- Steinberg H, Torem M and Saravay SM (1980)
An analysis of physician resistance to psychiatric consultations
Arch Gen Psychiat 37: 1007-1012
- Steuer J, Bank L, Olsen EJ and Jarvik L (1980)
Depression, physical health and somatic complaints in the elderly: a study of the
Zung Self-Rating Depression Scale
J Gerontology 35: 683-688
- Stewart M, Drake F and Winokur G (1965)
Depression among medically ill patients
Dis Nerv Syst 26: 479-484
- Stoppe G, Sandholzer H, Huppertz C, Duwe H and Staedt J (1999)
Gender differences in the recognition of depression in old age
Maturitas 32:205-212
- Strauss AL and Corbin J (1990)
Basics of Qualitative Research: Grounded Theory Procedures and Techniques
Newbury Park: Sage
- Streiner DL (1993)
A checklist for evaluating the usefulness of rating scales
Can J Psychiat; 38:140-148
- Streiner DL and Norman GR (1995)
*Health Measurement Scales: a practical guide to their development and use (2nd
edition)*
Oxford: Oxford University Press
- Stroudmire A and Thompson TL (1983)
Medication noncompliance: systematic approaches to evaluation and intervention
Gen Hosp Psychiatr 5: 133-139
- Sullivan M, LaCroix A, Russo J, Swords E, Sornson M and Katon W (1999)
Depression in coronary heart disease: what is the appropriate diagnostic threshold?
Psychosomatics 40: 286-292
- Tannock C and Katona CLE (1995)
Minor depression in the aged: concepts, prevalence and optimal management
Drugs and Ageing 6: 278-292
- Turner BA (1981)
Some practical aspects of qualitative data analysis: one way of organising some of
the cognitive processes associated with the generation of grounded theory
Quality and Quantity 15: 225-247
- Tylee AT, Freeling P and Kerry S (1993)
Why do general practitioners recognize major depression in one woman patient yet
miss it in another?
Br J Gen Pract 43: 327-330

- Unutzer J, Patrick DL, Simon G, Grembowski D, Walker E, Rutter C and Katon W (1997)
Depressive symptoms and the cost of health services in HMO patients aged 65 years and older
J Am Med Assoc 277: 1618-1623
- Upadhyaya AK and Stanley I (1997)
Detection of depression in primary care: comparison of two self-administered scales
Int J Geriatr Psychiatr 12: 35-37
- Valente SM and Saunders JM (1997)
Diagnosis and treatment of major depression among people with cancer
Cancer Nurs 20:168-77
- Van Hemert AM, Hawton K, Bolk JH and Fagg J (1993)
Key symptoms in the detection of affective disorders in medical patients
J Psychosom Res 37: 397-404
- Verbosky LA, Franco KN and Zrull JP (1993)
The relationship between depression and length of stay in general hospital patients
J clin Psychiatry 54: 177-181v
- Von Knorring L (1965)
The experience of pain in depressed patients
Neuropsychobiology 1: 155-165
- Wade DT, Legh-Smith J and Hewer RA (1987)
Depressed mood after stroke: a community study of its frequency
Br J Psychiatr 151: 200-205
- Watson D, Clark LA, Weber K, Assenheimer JS, Strauss ME and McCormick RA (1995a)
Testing a tripartite model: II. exploring the symptom structure of anxiety and depression in student, adult, and patient samples
J Ab Psychol 104: 15-25
- Watson D, Weber K Assenheimer JS, Clark LA, Strauss ME and McCormick RA (1995b)
Testing a tripartite model: I. Evaluating the convergent and discriminant validity of anxiety and depression symptom scales
J Abnorm Psychol 104: 3-14
- Waxman HM and Carner EA (1984)
Physicians' recognition, diagnosis, and treatment of mental disorders in elderly medical patients
Gerontologist 24: 593-597
- Weiss IK, Nagel CL and Aronson MK (1986)
Applicability of depression scales to the old old person
JAGS 34: 215-218
- Weissman MM, Leaf PJ, Tischler GL, Blazer DG, Karno M, Bruce ML and Florio LP (1988)
Affective disorders in five United States communities.
Psychol Med 18: 141-153

- Weissman MM, Myers JK and Thompson WD (1981)
 Depression and its treatment in a US urban community 1975-1976
 Arch Gen Psychiatry 38: 417-421
- Wells CE (1979)
 Pseudodementia
 Am J Psychiatr 136: 895-900
- Wells KB, Stewart A, Hays RD, Burnam MA, Rogers W, Daniels M, Berry S,
 Greenfield S and Ware J (1989)
 The functioning and well-being of depressed patients: results from the Medical
 Outcomes study
 J Am Med Ass 262: 914-919
- Wetzler S, Van Praag HM and Katz MM (1991)
 Diagnosing depression: a two-tier approach
 in Feighner JP and Boyer WF (eds.)
Diagnosis of Depression
 Chichester: John Wiley and Sons
- Whooley MA and Browner WS (1998)
 Association between depressive symptoms and mortality in older women
 Arch Intern Med 158: 2129-2135
- Wing JK, Cooper JE and Sartorius N (1974)
*The description and classification of psychiatric symptoms: an instruction manual
 for the PSE and CATEGO System*
 London: Cambridge University Press
- Wise TN and Rosenthal JB (1982)
 Depression, illness beliefs and severity of illness
 J Psychosom Res 26: 247-253
- World Health Organization (10th edition)
International Classification of Diseases
 Geneva: WHO (1992)
- Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M and Leirer VO (1983)
 Development and validation of a geriatric depression screening scale: a preliminary
 report
 J Psychiatr Res 17: 37-49
- Zigmond AS and Snaith RP (1983)
 The hospital anxiety and depression scale
 Acta Psychiatr Scand 67:361-370
- Zung WWK (1965)
 A self-rating depression scale
 Arch Gen Psychiatr 12:63-70
- Zung W (1980)
 Affective disorders
 in Busse EW and Blazer DG (eds)
Handbook of Geriatric Psychiatry
 New York: Van Nostrand Reinhold

Appendices

Table showing results of independent t-tests for equality of means between 92 non-depressed elderly medical in-patients and 8 non-depressed elderly stroke patients used as the age- and sex-matched control group. These results demonstrate that there were no statistically significant differences between these patients on any of the scale items

Scale item	95% confidence interval of the difference	
	Lower	Upper
H1 Depressed mood	-.875	.562
H2 Guilt	-.551	.225
H3 Suicide	-.900	.346
H4 Early insomnia	-.419	.843
H5 Middle insomnia	-.493	.764
H6 Late insomnia	-.143	.741
H7 Work and interest	-.104	.734
H8 Retardation	-.733	.167
H9 Agitation	-.465	.411
H10 Psychic anxiety	-.429	.863
H11 Somatic anxiety	-.231	.372
H12 Gastrointestinal	-1.013	.394
H13 General somatic	-.283	1.000
H15 Hypochondriasis	-.294	.305
M1 Apparent sadness	-.996	.757
M2 Reported sadness	-1.903	.783
M2 Inner tension	-1.184	.619
M4 Reduced sleep	-.64	1.944
M5 Reduced appetite	-.822	1.170
M6 Concentration loss	-.944	.737
M7 Lassitude	-.434	1.141
M8 Inability to feel	-.583	.681
M9 Pessimism	-.815	.435
M10 Sulcidal feelings	-.761	.489

International Journal of Geriatric Psychiatry
Vol. 8: 957-958
Letters to the Editor
Depression in Medical Wards

Dear Editor,

Burn et al (1993), using the Geriatric Mental State Schedule (GMS) and AGE-CAT diagnostic system (Copeland et al 1986) in their study of the prevalence of psychiatric illness in acute geriatric admissions, found a prevalence rate of 23% for depression (male: female = 1: 1.1). Using a similar diagnostic procedure in a comparable sample of hospitalised physically ill elderly patients, we recorded a prevalence of 28.7%. Although similar, our sample had a significantly greater percentage of patients with severe depression (as diagnosed by AGE-CAT), the difference being due to an increased number of severely depressed females.

During the first 20 weeks of a current placebo-controlled double-blind trial of antidepressants in the elderly physically ill, 209 (25.8%) of the admissions to the acute geriatric medical wards of the Royal Liverpool University Hospital were randomly selected for screening. Case notes and drug charts were examined for study exclusion criteria and 34% excluded. One hundred and fifty patients (45 male, 105 female) were screened for depression using ELDRS, a 15-item scale developed for use in the elderly physically ill which includes both interview and informant items. (Evans 1993) Patients scoring above the cut-off for depression were interviewed using the GMS-AGE-CAT system to obtain a diagnosis.

Case-level AGE-CAT diagnosis of depression (i.e. that level at which most clinicians would agree that treatment is of benefit) was found for 43 patients (male: female = 1:1.9), mean age 80.8 years). In the study by Burn et al, 26% of the diagnostic syndrome cases were depressive psychosis; in our sample, this more severe depression accounted for 55% of the cases. Seventeen additional patients had previously diagnosed depressive illness and were currently taking prescribed antidepressants.

The finding that, out of the sample of 209 patients, 43 (20.6%) were suffering from untreated depressive illness and a further 17 (8.1%) were already receiving treatment supports previous research concerning the prevalence of depression in the physically ill elderly. The prevalence of severe depression in our sample is important in terms of both prognosis and treatment: major depression is most likely to affect morbidity and mortality, and is also most likely to respond to somatic treatment.

It is a common assumption that depression in physically ill patients is reactive and will resolve with improvement of the physical condition, but we have noted that, of the first 50 patients with AGE-CAT case-level diagnosis of depressive illness entered into our current study, 50% dated the onset of their depression at least 6 months prior to their hospitalisation; 38% had symptoms 12 months or longer. Only two patients had received any treatment prior to the study.

We are pleased that Burn et al have drawn attention to the prevalence of depressive illness in this population, but would like to stress the high proportion of severely depressed found in our sample.

Margaret F. Hammond
Mavis E. Evans
Michael Lye
Royal Liverpool University Hospital

122

ASSESSING TESTAMENTARY CAPACITY IN ALZHEIMER'S DISEASE

N.R.C. KIDD, S. FAHY, R.F. COEN, C. CUNNINGHAM, I. BRUCE, F. BUGGY, J.B. WALSH, D. COAKLEY AND B.A. LAWLOR

Mercers Institute for Research on Ageing, St James Hospital, Dublin, Ireland

Introduction

The assessment of testamentary capacity in Alzheimer's Disease is likely to become more common in the coming years due to the ageing population and probable increase in AD sufferers. Many authors suggest that the cognitive reasoning that underlies competency is closely related to frontal lobe dysfunction. The present study examines the ability of selected neuropsychological tests to assess testamentary capacity in AD.

Methods

17 AD patients (NINCDS-ADRDA, mean age 71 yrs) and 13 controls (mean age 72 yrs) were assessed using the Mini-Mental State Examination (MMSE), the Executive Interview (EXIT), Category and Letter Fluency. Each subject and a primary informant were also interviewed by a psychiatrist who assessed the testamentary capacity of the subjects. The optimum sensitivity and specificity were obtained using receiver operating curve characteristics. The association between each psychometric test and testamentary capacity was obtained using a series of analysis of covariance models, adjusted for the relevant demographic variables.

Results

Using a cut-off of 18/19 out of 30, the MMSE was 100% sensitive and 86% specific in assessment of testamentary capacity of this population. In comparison the EXIT was 78% sensitive and 85% specific. The letter fluency test obtained 78% sensitivity and 91% specificity. The MMSE ($F=36.0$, $p \leq 0.0001$) was the only psychometric test able to differentiate patients with and without testamentary capacity.

Conclusions

Whilst the cognitive tests were comparable in distinguishing patients and controls, the MMSE, a test measuring global cognitive impairment, was the best discriminator of competent and incompetent patients. Using these tests, there does not seem to be an close association between testamentary capacity and frontal (executive) dysfunction.

123

RECOGNISING DEPRESSION: DOCTORS' PRACTICE AND THE GDS

M.F. HAMMOND

Dept of Geriatric Medicine, University of Liverpool

Introduction

Although the prevalence of depression in geriatric in-patients is estimated to be approximately 20%, less than half of depressed patients are recognised in hospital. Routine screening using the Geriatric Depression Scale (GDS) is recommended by the British Geriatrics Society, but few departments implement this in practice. This study investigated doctors' identification of depression, and their attitudes to using the GDS.

Methods

Interviews with two rotations of doctors from one geriatric medicine department were conducted. Doctors were asked if they felt able to recognise depression, and what symptoms made them suspect depression. They were asked to read and comment on the 15-item GDS.

Results

Seven house officers, five SHOs, and 8 Specialist Registrars were interviewed. Two doctors said they seldom looked for depression; 4 felt unconfident, 7 felt they could recognise obvious cases, and seven felt they could identify most depression. One hundred and twenty-seven symptoms were mentioned, categorised as follows: observations of mood and behaviour (55), somatic symptoms (22), psychological symptoms (26), informants (14), and history (10). One hundred and nineteen comments were made on GDS items; five items in particular (1, 2, 3, 4, 8, 11) attracted negative comments. Only two doctors said they would use the GDS routinely; seven definitely would not use it. Although they would like an objective method of depression screening, 10 felt the GDS was too "depressing"; others said it was insensitive or unspecific, artificial, and too long. Most preferred to incorporate some GDS items naturally into their examination of the patient.

Conclusions

Doctors rely mainly on observations of patients' mood and behaviour to identify depression. A more clinically appropriate and less cumbersome method than the GDS may improve screening practice.

Age and Ageing
Volume 26 (Supplement No 1)
1997

**BRITISH
GERIATRICS SOCIETY**

Communications to the Autumn Meeting of the
British Geriatrics Society

3rd to 4th October 1996
Westminster Central Hall, London

**TEXT BOUND INTO
THE SPINE**

SCREENING FOR EXCESSIVE ALCOHOL CONSUMPTION IN OLDER PEOPLE

46

WITRELL, V WATKIN, G LIVINGSTON, Z WALKER, P PATEL, S SHERGILL, A DAIN, C BIELAWSKA and PATONA

Department of Health Care for Older People, Whittington Hospital, London

CAGE and the Michigan Alcoholism Screening Test-Geriatric (MAST-G) are screening instruments for alcohol dependence. They have been validated in an older population in the United States. We aimed to evaluate whether the CAGE, MAST-G or an abnormally high mean corpuscular volume (MCV) are effective screening instruments for excess alcohol intake and dependence in older patients in the UK.

Patients of 65 and over were randomly selected from those admitted as emergency to the medical, surgical, elderly care, orthopaedic and geriatric wards of two district general hospitals. Patients were excluded if they were too unwell, too confused or unwilling to consent. They were assessed by a doctor who documented whether they drank excessive amounts of alcohol (>21 units per week in men and >14 units per week in women), whether they suffered alcohol dependence (AMIIR) and their MCV. They were screened independently using the CAGE and MAST-G. 210 patients consented to the study. 48 patients failed to complete the assessment because they became too unwell or too cognitively impaired, were discharged or withdrew consent. In those patients who completed the assessments the prevalence of excess alcohol intake and alcohol dependence were 8% and 5% respectively. The CAGE, the MAST-G and an abnormally high MCV had high specificity for excess alcohol intake (0.99, 0.90, 0.83) and alcohol dependence (0.98, 0.93, 0.82). However, all had low sensitivities, (0.15, 0.14, 0.15) and (0.13, 0.5, 0.13) respectively.

Thus, the CAGE, MAST-G and an abnormally high MCV are sensitive screening instruments for in-patients aged 65 and over. By using regression analysis we have developed a modified 4 question screening instrument, comprising questions 2,7,10 and 23 of the MAST-G, which now needs validation.

THE INFLUENCE OF DEPRESSION ON MINI-MENTAL STATE EXAM SCORES IN ELDERLY IN-PATIENTS

47

RAMMOND, M. EVANS, S. O'KEEFE and M. LYE

Department of Geriatric Medicine, Royal Liverpool University Hospital, Liverpool

The Mini Mental State Exam (MMSE) (Folstein et al 1975, *J Psychiat Res* 12:189-198) is commonly used to screen elderly patients for cognitive impairment. Depression is associated with impaired cognitive function, and antidepressant drug treatment may result in improved cognitive function (Sadavoy et al. 1990, *Int J Geri Psychiat* 5:187-192; Robinson et al. 1986, *Br J Psychiat* 148:541-547). Whether improvement in cognitive function as measured by the MMSE is drug mood dependent can only be determined in a placebo controlled antidepressant trial.

Forty-two elderly in-patients (mean age 80) with DSM-IV-TR (Copeland et al. 1986, *Psychol Med* 16:89-96) case level diagnosis of depression taking part in a placebo-controlled trial with fluoxetine were assessed using the MMSE (median 23) and the Hamilton Depression Rating Scale (HDS) (Hamilton 1967, *Br J Soc Psychol* 6:278-296) (median 20) at baseline, and 8 weeks. Recovery from depression was defined as

priori as a final HDS score of 10 or less, or a reduction of at least 50%.

Analysis of variance with change in MMSE score as the dependent variable, and treatment group (placebo v fluoxetine) and depression outcome as dependent variables showed a significant main effect between depression outcome and MMSE score change ($F=6.08$, $p=0.02$). There was no significant interactive effect between change in MMSE scores and treatment group/depression outcome ($p=0.25$), or significant main effect for treatment group ($p=0.25$).

The evidence from this study is in favour of improved affect resulting in significantly better performance on the MMSE. Depression may detrimentally affect MMSE scores, and potential for improvement in cognitive function through treatment of possible depression should be considered before decisions regarding placement in residential care are taken.

48

Diagnosis of Dementia by General Practitioners: a Meta-Analysis

H. van Hout, M. Vernooij-Dassen, R. Grol, W. Hoefnagels, Y. Kuin and P. Poels

The Department of Geriatric Medicine and the Department of General Practice, University Hospital Nijmegen, PO Box 9101, 6500 HB Nijmegen, The Netherlands

Background: General practitioners (GPs) are frequently confronted with patients suffering from dementia. It is not clear whether GPs are capable of diagnosing dementia adequately. **Aim:** To gain insight into the ability of GPs to diagnose dementia.

Data sources: A MEDLINE and PSYCHLIT search for meta-analysis of 28 studies on the diagnosis of dementia by general practitioners (period 1980-1995).

Results: In 7 high quality studies the GP's clinical diagnosis of dementia was compared with psychometric tests or geriatric assessments. The median sensitivity of the GP's diagnosis was 76% (range 52% to 91%). The median specificity was 85% (range 65% to 99%). In 14 other studies the GP's knowledge, diagnostic routines and attitudes were investigated. GP's reproduction of knowledge of dementia was poor. Nevertheless, they were able to correctly recognize dementia symptoms from a list. GPs rarely used diagnostic criteria such as DSM-III-R. There was a wide variety in the type and number of diagnostic procedures used.

Conclusion: The ability of GPs to diagnose dementia is fairly good. This is remarkable given their limited knowledge of symptoms and criteria. Better use of the diagnostic possibilities might further improve their diagnostic ability.

**Development and Validation of a Brief Observer-Rated Screening Scale for
Depression in Elderly Medical Patients**

Mrs. Margaret F. Hammond (correspondence)

Geriatric Medicine, University Clinical Department, The Duncan Building,
Daulby Street, Liverpool L69 3GA

Tel: 0151-706-4062 Fax: 0151-706-4064

email: mhammond@liverpool.ac.uk

Dr. Shaun T. O'Keeffe,

Department of Geriatric Medicine, St. Michael's Hospital

Dun Laoghaire, Co. Dublin, Republic of Ireland

Prof. David H. Barer,

Professor of Clinical Geriatric Medicine, Queen Elizabeth Hospital,

Sheriff Hill, Gateshead, Co. Durham NE9 65X

(a report on work carried out at the Royal Liverpool University Hospital)

Presented as a poster at the British Geriatrics Society Conference, October 1998

(abstracted in Age and Ageing:

Hammond MF, Barer D, O'Keeffe ST (1999)

Development of an observer-rated screening scale for depression in elderly medical patients

Age Ageing 28 (supp. 1): 37)

word count: 1817 excluding references and abstract

**Development and Validation of a Brief Observer-Rated Screening Scale for
Depression in Elderly Medical Patients**

Abstract

Objective: to develop a depression screening scale that does not rely on verbal communication

Setting: acute geriatric unit in a teaching hospital

Subjects: 96 patients (mean age 81 years, range 68-92, 59 female); 40% in the initial study group and 22% in the validation group were diagnosed as depressed

Methods: a scale was devised using nine items which could be rated by an observer; inter-rater reliability, sensitivity, specificity and predictive values for each item compared with a GMS-AGECAT diagnosis of depression were determined; a final scale of six items was validated

Results: Inter-rater reliability was poor for two items (irritability and sleep disturbance); two items (sleep disturbance and night sedation) had poor sensitivity; these items were omitted in a revised scale. Re-analysis of data from the initial study showed that a cut-off of 3 or more on the revised scale gave a sensitivity of 83%, specificity of 95%, a positive predictive value of 0.89 and a negative predictive value of 0.90. Spearman's correlation coefficient between the 6-item questionnaire and the Hamilton rating scale was 0.79. In the validation study, the cut-off score of 3 or more on the revised 6-item scale had a sensitivity of 90%, specificity of 72%, a positive predictive value of 0.69 and a negative predictive value of 0.96.

Conclusions: This simple short observation-based screening scale completed by primary nurses is sensitive and specific in identifying depression in elderly medically ill patients, and may be a useful addition to clinical practice.

Key words: depression, screening scales, older people

Running heading: An observer-rated screening scale for depression

Key points

- **Nurses reliably recognise signs of depression in their elderly patients**
- **The six-item observation-based scale shows good sensitivity and specificity for depression in geriatric in-patients**

Introduction

Studies of elderly medical in-patient populations have found prevalence rates for depression of up to 50% [1-5]. Depression in this population has been shown to be associated with increased mortality and duration of hospital stay [6,7]. Nevertheless, depression is often unrecognised [4,8].

Satisfactory sensitivity and specificity have been reported for self-rated 'paper and pencil' screening instruments for depression in medical in-patients [3,9,10]. As a result, it has been suggested that these tests should be used in routine clinical practice. The Geriatric Depression Scale (GDS) [11] is recommended by the Royal College of Psychiatrists and the British Geriatrics Society for depression screening in elderly in-patients [12]. However, although usually acceptable to patients, these tests are rarely utilised by physicians on busy hospital wards [10]. Anecdotal evidence suggests the low use of depression screening scales may be due to the reluctance of clinical staff to ask 'difficult' or 'sensitive' questions, the time taken to complete scales, and the inappropriateness of 'paper and pencil' instruments in clinical practice. In addition, although depression is strongly associated with cognitive impairment and communication disorders in geriatric patients [3] and in stroke patients [13,14] (particularly those with non-fluent aphasia [15]), assessment instruments which rely on patient replies are not suitable for use in sick patients with communication disturbances [16,17]. Patients with dysphasia, dysarthria, organic brain syndromes, and visual or hearing impairment, or who are illiterate, constitute up to one-third of the population of elderly medical patients, and have been excluded from systematic studies of depression because of the problems in rating [3, 8,18].

An alternative approach to detecting depression, which has not yet been examined in detail, is to use the observational skills of nursing staff who are in daily contact with patients. In this study we sought to develop and validate a brief observer-based screening test for depression.

Patients and Methods

Development of scale

An initial scale was constructed using observable behaviour from the Diagnostic and Statistical manual 3rd edition revised (DSM-3R) criteria for depression [19] and from symptoms known to discriminate depression in the physically ill [20-22]. Nursing and medical notes were examined for phrases and wording used by staff when describing behaviour of patients with depression. Nurses were asked to comment on the behaviour of named patients identified as depressed. Items considered included crying, restlessness, agitation, irritability, unco-operativeness, hostility, aggressiveness, disinterest in food, social withdrawal, lack of reactivity, difficulty getting to sleep, disturbed sleep, early waking, diurnal mood change, and weight loss. Early evaluation suggested that questions regarding appetite, food intake or weight loss would be of little value in screening for depression in our in-patient population due to their poor specificity. It was decided in advance that the scale should have a yes/no format to avoid the ambiguity inherent in multiple response scales. The initial 9-item questionnaire is shown in Figure 1.

Patients

Sample sizes of 50 were planned for both the initial and the validation studies. Consecutive patients admitted to the acute geriatric wards were considered for inclusion. Patients with communication problems (e.g. deafness, aphasia), severe cognitive impairment (defined as an Abbreviated Mental Test score <5/10),

or delirium (according to the Confusion Assessment Criteria) [23], and patients taking anti-depressant medications were excluded, as were patients who were unwilling or were considered too ill to participate.

Methods

In the initial study, the screening scale was completed separately by two nurses familiar with the patient, one of whom was always the primary nurse responsible for the patient's care. Patients were then interviewed, using the Geriatric Mental State Schedule (GMS) [24], by an experienced research psychologist who was unaware of the nurses' assessments, and a diagnosis was made using the GMS-AGECAT diagnostic syndrome case level criteria. The Hamilton Depression Rating Scale (HDS) [25] was completed by this interviewer for the first 24 patients assessed.

The Kappa statistic was used to determine inter-rater reliability between the two nurses for each of the individual items on the 9-item scale; Kappa has a value of 1.0 when agreement is perfect, -1.0 when disagreement is perfect, and a value of zero when agreement is no better than chance. Guidelines for interpreting values between zero and 1.0 are: $< .20$ = poor agreement; $0.21-0.40$ = fair agreement; $0.41-0.60$ = moderate agreement; $0.61-0.80$ = good agreement; and $0.81-1.0$ = excellent agreement [26]. The sensitivity, specificity and positive and negative predictive values of individual items were calculated using standard formulae from the ratings of the primary nurse only. Items with poor inter-rater reliability or with sensitivity or specificity less than 50% were omitted from the revised scale. Optimal cut-off points were selected to maximise the sum of sensitivity and specificity. The revised scale was tested in a further 50 patients from a consecutive

series of patients admitted to the acute geriatric wards. The same procedure was followed, except that the screening scales were completed only by the patients' primary nurses.

Results

Details of patients considered for the study and reasons for exclusions are shown in Table 1. The scores on the scale did not differ between the 29 patients for whom a subsequent psychological assessment was not performed for logistical reasons and the remaining 96 patients. The mean (SD) age of the 96 patients with complete assessments was 81 (6) years; there were 59 women and 37 men. Primary diagnoses in these patients included cardiac disease (25), respiratory disease (19), gastrointestinal disease (16), cancer (10), cerebrovascular disease (8) and falls (6).

Twenty patients (40%) in the initial study group were diagnosed as depressed (14 women, median age 80 (range 68-92)). Inter-rater agreement, sensitivity, specificity and positive predictive values for the 9 items included in the initial scale are shown in Table 2. A cut-off of 4 or more on this questionnaire gave a sensitivity of 90%, specificity of 77%, a positive predictive value of 0.72 and a negative predictive value of 0.92. Spearman's correlation coefficient between the 9-item questionnaire and the HDS was 0.76.

Inter-rater reliability was poor for item 5 regarding irritability and item 8 regarding sleep disturbance; item 8 and item 9 (night sedation) had poor sensitivity for depression. Accordingly, these three questions were omitted in a revised 6-item scale. A re-analysis of data from the initial study showed that a cut-off of 3 or more on the revised scale gave a sensitivity of 83%, specificity of 93%, a positive predictive value of 0.89 and a negative predictive value of 0.90. Spearman's correlation coefficient between the 6-item questionnaire and the HDS was 0.79.

Ten (22%) of the 46 patients in the validation group were depressed (median age 78, range 67-90 years, 6 women). In this group, the cut-off of 3 or more on the

6-item scale gave a sensitivity of 90%, specificity of 72%, a positive predictive value of 0.69 and a negative predictive value of 0.96.

Discussion

Although self-rated screening scales have proved effective in identifying depression in medically ill patients, our experience and that of others is that they are rarely used by physicians [4,10]. Observations by nursing staff, who are most intimately involved in day-to-day patient care, might be a useful approach to screening for depression [4]. Indeed, in units that do not use formal screening tests, recognition of depression is usually triggered by staff observations. In most cases, an initial suspicion of depression can be further investigated by questioning the patient. However, in patients with stroke or major communication or cognitive disturbance due to another cause, antidepressant medications are frequently started solely on the basis of the observational impression of staff.

Studies that have examined nurses' identification of depression in their patients have had generally disappointing results. When patients' key nurses were asked to make an assessment of depression along a four-point scale from 'definitely not depressed' to 'definitely depressed' in a study of 59 elderly medical in-patients, the nurses' ratings of 'definite or probable' depression compared with AGE-CAT diagnoses had a sensitivity of only 38% and a specificity of 79%. [4] Similarly, research nurses who visited stroke patients at home had a sensitivity of 55% and a specificity of 93% for the detection of depression [17]. In oncology patients, the concordance between nurses' ratings of depression severity and patients' own estimates were little better than chance ($Kappa = 0.17$) [27]

Poorly developed observational skills are not necessarily the reason for the poor recognition of depression in these previous studies. Staff may lack confidence in making a diagnosis of depression, or symptoms consistent with depression may be discounted as normal effects of illness or of hospitalisation [10]. In at least some

cases of depression not recognised by nurses, the signs and symptoms of depression had indeed been identified but had been considered by nurses to be understandable in view of patients' social problems [1]. Similarly, Jackson and Baldwin suggested that nurses seemed able to recognise the symptoms, if not the syndrome, of depression [4].

One way of improving nurses' recognition of depression would be to provide specific training regarding the features of depression. An alternative approach, which the results of the present study suggest may be applicable in clinical practice, would be to ask nursing staff for their observations of specific behaviours or symptoms rather than seeking a diagnosis. Our study indicates that a simple scale completed by primary nurses is sensitive and specific in identifying depression in elderly medically ill patients. Inter-rater reliability for the individual scale items was reasonable. The revised scale takes less than a minute to complete.

The prevalence of depression in our study population was high, in accordance with previous reports. The diagnosis was made using a standardised and well-validated diagnostic instrument by an experienced examiner. However, there are some important limitations to this study. Our unit had recently conducted studies into the treatment of depression; hence, nursing awareness of the importance of individual features of depression may have been greater than in other units. We acknowledge that a number of patients who admit to depression on questioning may not exhibit behavioural clues. Conversely, studies of stroke patients suggest that some patients with 'observed depression' deny low mood [14]. Although a purely observer-rated scale would be of most value in detecting depression in patients with communication problems due to stroke, deafness or major cognitive impairment, such patients were, of necessity, omitted from the present study. Our scale would

not necessarily perform as well in these populations. For example, crying (question 2) is a feature of emotional lability after stroke; also, many other consequences of stroke other than depression influence mobility and 'motivation' in stroke patients (questions 4 and 6) [13]. However, the behavioural and motivational manifestations of depression [20-22] and a depressed appearance [14] have been noted by others to reliably indicate depression in physically ill patients.

The sensitivity and specificity of this scale compare very favourably with the GDS [5]. An observation-based screening scale that can be quickly completed as part of nursing care may be a valuable contribution to the recognition of depression in elderly patients.

References

1. Koenig HG, Meador KG, Cohen HJ, Blazer DG.

Depression in elderly hospitalized patients with medical illness.

Arch Intern Med 1988; 148:1929-1936.

2. O'Riordan TG, Hayes JP, Shelley R, O'Neill D, Walsh JB, Coakley D.

The prevalence of depression in an acute geriatric medical assessment unit.

Int J Geriatr Psychiatry 1989; 4:17-21.

3. Ramsay R, Wright P, Katz A, Bielawka C, Katona C.

The detection of psychiatric morbidity and its effect on outcome in acute elderly medical admissions.

Int J Geriatr Psychiatry 1991; 6:861-866.

4. Jackson R, Baldwin B.

Detecting depression in elderly medically ill patients.

Age Ageing 1993; 22:349-353.

5. Shah, A, Herbert R, Lewis S, Mahendran R, Platt J, Bhattacharyya B.

Screening for depression among acutely ill geriatric inpatients with a short geriatric depression scale.

Age Ageing 1997; 26: 217-221

6. Katona CLE.

Depression in Old Age 1994

Chichester: John Wiley and Sons Ltd.

7. Murphy E.

Increased mortality rates in late-life depression.

Br J Psychiatr 1988; 152:347-353.

8. Rapp S, Parisi S, Walsh D, Wallace CE.

Detecting depression in elderly medical in-patients.

J Cons Clin Psychol 1988; 56: 509-513.

9. Shah A, Phongsathorn V, Bielawska C, Katona C.

Screening for depression among geriatric inpatients with short versions of the Geriatric Depression Scale.

Int J Geriatr Psychiatry 1996; 11:915-918.

10. Meakin CJ.

Screening for depression in the medically ill. The future of paper and pencil tests.

Br J Psychiatr 1992; 100:212-216.

11. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Day M, Leiver VO.

Development and validation of a geriatric depression scale: a preliminary report.

J Psychiatr Res 1983; 17: 37-49

12. Royal College of Physicians

Standardised assessment scales for elderly people. Report of joint workshops of the Research Unit of the Royal College of Physicians

and the British Geriatrics Society

1992. London: Royal College of Physicians of London

13. Ramasubbu R, Kennedy SH.

Factors complicating the diagnosis of depression in cerebrovascular disease.

Can J Psychiatry 1994; 39:596-607.

14. Kishi Y, Robinson RG, Kosier JT.

The validity of observed depression as a criteria for mood disorders in patients with acute stroke.

J Affect Disord 1996; 40:53-60.

15. Robinson RG, Benson DF

Depression in aphasic stroke patients: frequency, severity and clinical-pathological correlations

Brain Lang 1981; 14: 282-291

16. Hermann M, Bartels C, Wallech C-W

Depression in acute and chronic aphasia: symptoms, pathoanatomical-clinical correlation and functional implication

J Neurol Neurosurg Psychiat 1993; 56: 672-678

17. House A, Dennis M, Hawton K, Warlow C.

Methods of identifying mood disorders in stroke patients: experience in the Oxfordshire Community Stroke Project.

Age Ageing 1989; 18:371-379.

18. Allman P.

Depressive disorders and emotionalism following stroke.

Int J Geriatr Psychiatr 1991; 6: 377-383

19. American Psychiatric Association.

Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, Revised.

1987. Washington D.C.: American Psychiatric Association

20. Rapp SR, Vrana S.

Substituting nonsomatic for somatic symptoms in the diagnosis of depression in elderly male medical patients.

Am J Psychiatr 1989; 146:1197-1200

21. Okimoto JT, Barnes RF, Veith RC, Raskind MA, Inui TS, Carter WB.

Screening for depression in geriatric medical patients.

Am J Psychiatr 1982; 139:799-802.

22. Clark DC, Cavanagh SV, Gibbons RD.

The core symptoms of depression in medical and psychiatric patients.

J Nerv Ment Disord 1983; 171:705-713.

23. Inouye SK, van Dyck CH, Alessi CA, Balkin S, Siegel AP, Horwitz RI

Clarifying confusion: the confusion assessment method. A new method for detection of delirium.

Ann Intern Med 1990 Dec 15;113(12):941-8.

24. Copeland JMR, Dewey ME, Griffiths-Jones HM.

Computerized psychiatric diagnosis and case nomenclature for elderly subjects: GMS and AGE-CAT.

Psychol Med 1986;16:89-99.

25. Hamilton M. Development of a rating scale for primary depressive illness.

Br J Soc Clin Psychol 1967; 6:278-296

26. Altman DG. *Practical Statistics for Medical Research.*

1991. London: Chapman and Hall

27. McDonald MV, Pakkis SD, Dugan W, Rosenfeld B, Theobald DE,

Edgerton S

Nurses' recognition of depression in their patients with cancer

Onc Nurs For 1999; 26: 593-599

Figure 1. Original questionnaire

1. **Does the patient sometimes look sad, miserable or depressed?**
2. **Does the patient ever cry or seem weepy?**
3. **Does the patient seem agitated, restless or anxious?**
4. **Is the patient lethargic or reluctant to mobilise?**
5. Is the patient demanding or irritable?
6. **Does the patient need a lot of encouragement to do things for him/herself?**
7. **Does the patient seem withdrawn, showing little interest in the surroundings?**
8. Is the patient having problems sleeping?
9. Is the patient taking night sedation?

Items retained in the final questionnaire are shown in bold print

Table 1: Patients considered for inclusion, numbers and reasons for exclusions

	<i>Initial study</i>	<i>validation study</i>
Patients considered:	107	98
<u>Exclusions:</u>		
cognitive impairment	15	13
Antidepressants	12	11
Critical illness	5	6
Aphasia	4	3
Deafness	4	2
Refusal	2	3
Incomplete assessments	15	14
Total patients studied	50	46

Table 2 Kappa values, sensitivity, specificity and positive and negative predictive values of individual questions for the detection of depression.

<u>Question</u>	<u>Kappa (% agreement)</u>	<u>Sensitivity</u>	<u>Specificity</u>	<u>PPV</u>	<u>NPV</u>
		%	%		
1	0.77 (86%)	85	80	0.74	0.89
2	0.51 (77%)	60	87	0.75	0.76
3	0.66 (83%)	70	73	0.64	0.79
4	0.57 (80%)	80	60	0.59	0.86
5	0.15 (66%)	50	77	0.59	0.70
6	0.37 (69%)	70	73	0.64	0.79
7	0.55 (77%)	80	83	0.76	0.86
8	0.13 (66%)	40	73	0.50	0.65
9	0.77 (86%)	15	60	0.20	0.51

PLACEBO-CONTROLLED TREATMENT TRIAL OF DEPRESSION IN ELDERLY PHYSICALLY ILL PATIENTS

MAVIS EVANS^{1*}, MARGARET HAMMOND², KENNETH WILSON³, MICHAEL LYE⁴ AND JOHN COPELAND⁵

¹Consultant, Psychiatry of Old Age, Wirral and W Cheshire Community Healthcare NHS Trust, Bebington, Wirral, UK

²Research Associate, University of Liverpool, Liverpool, UK

³Professor, Psychiatry of Old Age, University of Liverpool, Liverpool, UK

⁴Professor, Geriatric Medicine, University of Liverpool, Liverpool, UK

⁵Professor, Psychiatry, Institute of Human Ageing, University of Liverpool, Liverpool, UK

ABSTRACT

Objectives. To determine the response of physically ill elderly depressed patients to treatment.

Design. Acute geriatric medical inpatients with depression, randomly assigned to an 8-week double-blind placebo-controlled trial of fluoxetine.

Main outcome measure. Response rate as defined by the 17-item Hamilton Depression Rating Scale.

Results. Eighty-two patients entered the trial; 62 patients (all those who had completed at least 3 weeks of treatment) were included in the efficacy analysis. Forty-two completed the full 8 weeks (21 in each group) with response rates of 67% in the fluoxetine group and 38% in the placebo group. No significant difference was found between the responses of the two groups ($p = 0.12$). There was a trend for results in the fluoxetine group to continue to improve with time. On secondary analysis those patients with serious physical illness who completed 5 or more weeks ($N = 37$) showed a significant improvement in mood if treated with fluoxetine ($p = 0.02$).

Conclusions. The main benefit of antidepressants is to approximately double the chances of recovery. This trial showed the response rate of the fluoxetine treated group was increased by a factor of 1.8 over the placebo group in an 8-week period. The presence of physical illness, often severe and/or multiple, did not reduce the effectiveness of the medication, which was well tolerated overall. Those with serious physical disease responded significantly better to drug treatment; this will require further work. Psychological support was also considered to be important.

© 1997 John Wiley & Sons, Ltd.

Int. J. Geriatr. Psychiatry, 12, 817-824 (1997)

No. of Figures: 0. No. of Tables: 4. No. of References: 45.

KEY WORDS—old age; depression; physically ill; treatment; liaison psychiatry; fluoxetine

Depression in elderly people is strongly correlated with physical illness, especially chronic progressive disease (Gurland *et al.*, 1983; Murphy, 1983) and there is evidence that the over-75s are especially vulnerable (Koenig *et al.*, 1988; Harper *et al.*, 1990). The prevalence of depression in elderly medical inpatients is over 20% (O'Riordan *et al.*, 1989; Burn *et al.*, 1993; Hammond *et al.*, 1993), approximately twice that found in the community

(Copeland *et al.*, 1987; Lindsay and Murphy, 1989). The prevalence of physical problems is high—over 80% of people aged 70 years or more suffer from a significant (i.e. in need of treatment) physical illness (Rossman, 1979) and over 50% have a disorder which interferes with independent functioning (Jarvik and Perl, 1981). Murphy's study (1982) of community and hospital mentally ill patients found that approximately 40% had chronic physical illnesses.

Outcome studies of treatment of depression in the elderly have shown response to be generally good but have emphasized the association between poor response to treatment and serious physical illness (Murphy, 1983; Baldwin and Jolley, 1986;

*Correspondence to: Mavis Evans, Wirral and West Cheshire Community NHS Trust, Clatterbridge Site, Bebington, Wirral L63 4JY, UK.

Contract grant sponsor: Lilly Industries Limited; Contract grant number: B1Y BP HC55.

Meats *et al.*, 1991). Mortality among the depressed is at least double that expected, even when controlled for physical illness and age (Cole, 1983; Murphy *et al.*, 1988; Evans, 1993a). Physically ill depressed patients are more likely to be admitted to hospital than those not depressed (Kay *et al.*, 1964) and they have increased inpatient mortality and significantly more days in hospital, both during the index and subsequent admissions (Koenig *et al.*, 1989b). Psychiatric intervention has been shown to increase recovery rate, reduce duration of hospital stay and the need for residential care after discharge and therefore also reduce costs (Levitan and Kornfeld, 1981; Verbosky *et al.*, 1993).

Confusion over the cause of somatic symptoms such as anorexia, insomnia and anergia may confound the diagnosis. It is often assumed that depression in the presence of physical illness is reactive and therefore less amenable to medication, and will resolve with treatment of the medical condition. Concerns about multiple drug therapy and potential side-effects in a frail population may persuade many physicians against attempting antidepressant therapy. Anticholinergic and cardiotoxic side-effects may be a contraindication for the use of tricyclic antidepressants or may cause unacceptable side-effects (Koenig, 1990). Koenig *et al.* (1992) concluded that the disinclination of physicians to treat was due to their worries over the risk-benefit ratio of known therapies.

Treatment trials which do not exclude people with acute or unstable chronic physical conditions are rare, and treatment trials in specific physical illnesses have had differing results. Doxepin was found to be no better than placebo in a small group of depressed patients with chronic obstructive airways disease (Light *et al.*, 1986). House *et al.* (1991) concluded that persistent depression requiring intervention was rare in the first year after stroke, although a report of two placebo-controlled studies (Fedoroff and Robinson, 1989) showed significant enhancement of both physical and cognitive recovery as well as of emotional state with active treatment. Koenig *et al.* (1989a), in an attempted placebo-controlled trial with nortriptyline, found that 90% of elderly acutely physically ill patients meeting the criteria for depression had major or minor medical contraindications to the use of tricyclic antidepressants; this trial was discontinued after 10 months' duration as only seven patients had been randomized. Evans (1993a) conducted an open treatment study with the selective serotonin reuptake inhibitor (SSRI) fluoxetine of

patients diagnosed as depressed during inpatient treatment for physical illness, and found no problems with tolerability or side-effects. Remission or improvement in depression was noted on follow-up in all treated patients.

Elderly patients with mild to moderate cognitive impairment are usually excluded from antidepressant trials (Burvill *et al.*, 1991), although there is a significant correlation between cognitive impairment and depression in elderly ill patients (Sadavoy *et al.*, 1990). Cognitive impairment has been implicated, along with active physical illness, in promoting chronicity in depression (Alexopoulos and Chester, 1992).

The exclusion of both the physically ill and the cognitively impaired from studies of depression means that drug treatment in the very people whom primary care workers and general physicians most often meet has not been adequately assessed. To assess the efficiency of drug treatment for depression in elderly inpatients, most of whom had at least one acute and one or more chronic health problems including cognitive impairment, a randomized placebo-controlled trial of SSRI treatment was undertaken.

METHOD

Men and women aged 65 years and over admitted under the care of a geriatrician or general physician to the Royal Liverpool University Hospital between July 1992 and December 1993 were defined as eligible for the study. Hospital case notes were examined for exclusion criteria resulting in approximately 35% of patients being eliminated at this stage. Exclusion criteria were as follows: suicidal intent or severe depression requiring ECT, other serious mental illness or already receiving psychotropic medication other than hypnotics, and unstable epilepsy. Patients had to be able to understand the purpose of the study and give informed consent, thus patients with severe cognitive impairment (MMSE < 10; Folstein *et al.*, 1975) were excluded.

The method chosen was a double-blind, randomized parallel-group study. Patients meeting entry criteria were randomly allocated within blocks of four to receive either placebo or fluoxetine 20 mg in the morning for a target period of 8 weeks. The primary outcome variable was the severity of depression measured using the 17-item Hamilton Depression Rating Scale (HAMD), with a good

response defined as a reduction in score of 50% and/or a final score of 10 or less (Hamilton, 1960).

Patients were assessed by the same research worker throughout the trial. They were screened for depression using the Evans Liverpool Depression Rating Scale (ELDRS) (Evans, 1993b), a 15-item interview and observer-rated screening scale which has been validated for use with the hospitalized physically ill elderly. Patients with a score of 5 or more were interviewed using the Geriatric Mental State (GMS)/AGECAT (Copeland *et al.*, 1976, 1986), a semi-structured computerized interview and diagnostic package. The criterion variable for entry to the study was a GMS-AGECAT case level of depression with a duration of at least 4 weeks.

Details of family and personal history of depression, duration of current depression, days in hospital, concomitant medication, use of services and social circumstances were recorded. Physical history and examination was extracted from all available medical case notes, with results of laboratory tests and other investigations. Physical illnesses were rated as mild, moderate or severe, acute or chronic (Burvill, 1990). Ratings were done on entry to the study, relapse or new illness was recorded as it occurred as an adverse event.

Informed consent was obtained from all patients in the study. General practitioners were informed by letter when the patient was entered into the trial, and were informed of outcome and treatment recommendations at the end of 8 weeks. Ethical approval for the study was given by the Royal Liverpool University Hospital Ethical Committee.

Patients were assessed at weeks 1, 3, 5 and 8 either in hospital or at home after discharge. Depressive symptoms were evaluated and scored using the HAMD; pulse and blood pressure, medication and contact with medical professionals were also recorded; details of any adverse experiences were sought from the patient using non-leading questions. At the 8-week visit, patients were reinterviewed using the GMS to obtain an AGECAT diagnosis and the MMSE was repeated. Patients were examined a final time by the psychogeriatrician after all trial ratings had been completed, to assess the need for further treatment or follow-up of their depressive illness.

A minimum ($\alpha = 0.05$, power = 0.8) sample size of 58 patients completing the study per group with a placebo response of 45% and a treatment response of 70% was calculated before

the trial began. Parametric tests were used for normally distributed interval scale data (paired and unpaired *t*-tests) and non-parametric tests for categorical or ordinal scale and non-normally distributed data (Fisher's exact test, Wilcoxon signed-rank test within groups, Wilcoxon rank sum test between groups). All tests were two-tailed and significance was defined as $p < 0.05$.

Patients were included in the 'intention to treat' efficacy analysis if they had completed at least 3 weeks of treatment (ie visit 3) ($N = 62$), as it was considered that any difference in efficacy between fluoxetine and placebo after only 1 week of treatment would not be valid. A subgroup of patients with serious physical illness was also analysed. Serious physical illness was defined from the Burvill ratings as cardiac or respiratory disease rated as moderate or severe on entry to the trial or diagnosis of neoplastic disease, i.e. illness involving 'life threat' to the patient.

RESULTS

During the recruitment period approximately 3000 patients were admitted to the target wards. Due to rapidity of throughput and logistics, 530 were prescreened for willingness to take part and excluded if terminally ill or with a communication problem; 323 were screened and 161 were given the GMS interview. One hundred and forty patients were diagnosed as suffering from depression by GMS-AGECAT, of whom 58 (mean age 79 years, SD 7.3) were not included in the trial for the following reasons: refusal (25), physician's decision to prescribe open treatment (15), medical contra-indication (5), concomitant medication exclusion (5), depression considered to be resolving or due to digoxin toxicity or hypothyroidism (5), and logistical problems such as discharge before consent was obtained (3). There was no significant difference in severity of depression in those who were not included in the trial.

Eighty-two patients (20 men and 62 women, mean age 80.4 years, SD 6.6) were randomized to placebo or treatment groups; 76 had complete baseline data. Patients in the study were predominantly inner city residents on low income; 12% were married, 72% lived alone; 16% lived in sheltered housing, residential or nursing homes. There was no significant difference in age, sex or severity of illness between the two groups (Table 1), and there were also no significant differences in these

Table 1. Patients with complete baseline data, $N = 76$

	Fluoxetine ($N = 38$)		Placebo ($N = 38$)	
	Median	Interquartile range	Median	Interquartile range
Age (yr)	82	75-85	81	76-85
Sex	31 female		28 female	
Hospital stay (days)	8	6-14	7	5-12
HAMD (completers)	20.5	18-24	21	20-24
<i>Length of current episode (months)</i>				
<6	9		14	
6-12	9		6	
12+	20		18	

Table 2. Acute and chronic illnesses in the patients entered into the trial (most patients had multiple pathologies)

	Fluoxetine ($N = 39$)	Placebo ($N = 43$)
Cardiovascular	34	35
Respiratory	16	22
Cerebrovascular/neurological	14	14
Musculoskeletal	19	21
Malignancies	6	6
Urogenital	11	15
Endocrine/haematological	12	10
Gastrointestinal	16	22

variables between those patients who withdrew early from the study and those who were entered for analysis. Patients had on average two acute physical problems on admission and three chronic health problems (Table 2).

Fourteen patients (seven fluoxetine, seven placebo) had previously been prescribed antidepressant medication; two (both placebo) felt they had recovered with the treatment.

Sixty-two patients completed 3 weeks of the trial and entered efficacy analysis. They were taking among them 166 different types of medication on a regular basis (median 6.0 fluoxetine group, 5.0 placebo group). There was no change in the number of drugs taken in the fluoxetine group ($N = 29$, $p = 0.98$), but there was a significant rise in the placebo group ($N = 33$, $p = 0.001$) (Wilcoxon signed-rank test). The difference between groups with respect to the change was also significant (Wilcoxon test $p = 0.005$).

Forty-two patients completed the trial. Four patients in each group died, two in the placebo group were withdrawn due to lack of efficacy at week 5. Fifty per cent of all withdrawals occurred in the first 3 weeks, 30% in week 1. Patients were defined as responders or non-responders according to their HAMD score at 8 weeks (those who completed) or at the last recorded visit after 3 weeks of treatment (Table 3). In the efficacy analysis the fluoxetine group showed 55% response compared with 36% of the placebo group. In those completing 8 weeks, the figures were 67% and 38% respectively. There was no significant difference between groups although there was a trend towards a better response in the fluoxetine group at 8 weeks, with the number of responders in the fluoxetine group increasing with time. Percentage of responders in the placebo group remained static after 5 weeks.

A secondary analysis of patients with serious physical illness showed that of those completing 5 weeks or more of treatment ($N = 37$), those receiving fluoxetine were significantly more likely to recover from their depression: 63% on fluoxetine compared with 24% on placebo, $p = 0.023$.

The Mini Mental State was also recorded at baseline and at the last assessment. There was no significant difference between the two groups of those who completed ($N = 42$) at baseline (fluoxetine group median 23, interquartile range 21-24; placebo group median 23, interquartile

Table 3. Percentage response (number in group) as defined by HAMD total

Illness	Whole group			+ Serious physical		
	Fluoxetine	Placebo	Probability*	Fluoxetine	Placebo	Probability*
3 weeks	48 (29)	33 (33)	0.30	53 (19)	29 (24)	0.21
5 weeks	43 (23)	44 (27)	1.00	53 (15)	38 (21)	0.50
8 weeks	67 (21)	38 (21)	0.12	64 (14)	24 (17)	0.033
LV 3-8 wk	55 (29)	36 (33)	0.20	58 (19)	25 (24)	0.058
LV 5-8 wk	63 (24)	37 (27)	0.095	63 (16)	24 (21)	0.023

LV, last visit brought forward, ie survival analysis.

*Fisher's exact test, 2-tailed.

range 19–27) or at 8 weeks (fluoxetine group median 26, interquartile range 22–27; placebo group median 23, interquartile range 19–27), but a trend to a rise in score in the fluoxetine group was seen ($p = 0.06$).

Two hundred and sixty-four adverse events were recorded for all patients, 130 in the fluoxetine group and 134 in the placebo group (Table 4). In patients with gastrointestinal diagnoses at baseline, there were significantly more adverse events in the fluoxetine group for all events at all levels of severity (32 fluoxetine, 19 placebo, $p = 0.049$). There were no other significant differences between the two drug groups.

No patient reported the emergence of suicidal ideation during the trial, although one patient (placebo group) was withdrawn by the supervising psychogeriatrician (ME) due to worsening depression.

Two possible drug interactions were recorded; both (one placebo, one fluoxetine) were patients on warfarin whose anticoagulant control altered. Four patients in each group were on warfarin; no others had any difficulties in anticoagulant control.

DISCUSSION

The patients in this study were identified while they were inpatients on a medical ward. The physically ill sample and the inclusion of those with moderate cognitive impairment make this trial directly relevant to clinical practice. The number completing was below our required target. Estimated recruitment rate (35 every 3 months) was based upon a prior open treatment study with a similar patient population using the same drug (Evans, 1993a) and failed to take into account pre- and post-randomization losses involved in clinical trials using placebos (physician and patient refusal, protocol requirements) which necessitate identifying at least twice the number needed (Charleson and Horwitz, 1984). The 50% attrition rate seen in this trial appears to be normal for 8-week antidepressant trials with elderly subjects (Feighner *et al.*, 1990; Tiller *et al.*, 1990).

A placebo group was important for this study, both to answer the question of necessity for treatment, but also to assess adverse effects in this already ill population: 'it is particularly difficult to assess adverse effects without a placebo group since many symptoms that are rated as side effects may simply be symptoms of depression' (Rockwell *et al.*,

Table 4. Adverse events reported

	Fluoxetine (N = 39)	Placebo (N = 43)
Anxiety/agitation	9	6
Gastrointestinal	20	18
Anorexia	3	0
Headaches	7	4
Myalgia	4	0
Arrhythmias	6	2
Dyspnoea	4	5
Pruritis	1	3
Dizziness/vertigo	4	4
Accidents/falls	7	5
Infections	7	21
Other	58	66
Total	130	134

1988). The adverse events recorded appear to show the expected high rate of gastrointestinal symptoms from an SSRI until the similar figure in the placebo group is noted. The only significant difference was in the number of infections recorded between the groups (chi-squared + Yates correction $p < 0.05$) but this was felt to be a chance finding.

The response rate to fluoxetine, measured by the HAMD, during the 8-week trial period is similar to that found in most antidepressant trials (Georgotas and McCue, 1989) despite the high physical morbidity of this group. Placebo response was high but follow-up was very close (at least six visits in 8 weeks), and some psychological support and counselling was inevitable. Response rate in the treatment group increased with time throughout the trial; this delay in response to antidepressant treatment in the elderly has already been described (Georgotas and McCue, 1989); physical illness may also be a factor in delaying response. This may be a factor in the therapeutic nihilism prevailing among physicians treating this age group.

The group of patients entered into this trial was heterogeneous, with differing physical conditions representing the reality of clinical practice. Acute illnesses recorded as reason for admission varied from myocardial infarction or cardiac failure to constipation or falls. Our results have shown that there are subgroups within the whole group with differing response to treatment. All patients received similar visits and support from the research team, but those with serious physical illness as defined earlier appeared to benefit from the addition of active antidepressant medication, unlike other outcome studies (Murphy, 1983;

Baldwin and Jolley, 1986; Meats *et al.*, 1991). However, these studies are not directly comparable: Murphy's study was of community patients, Baldwin and Jolly's a retrospective review of psychiatric patients and Meats *et al.*'s a prospective review of psychiatric admissions.

The elderly have a tendency not to admit to feelings of depression and relatives may be unaware of the condition (Hanley and Baikie, 1984). They accept low levels of psychological well-being as 'normal' and have a disturbingly low expectation of quality of life. All illnesses except the very trivial involve an element of psychological adjustment. Serious medical illness is likely to be a potent psychological stressor affecting body image, self-esteem, sense of identity, capacity to live independently and to maintain social and family relationships (Rodin and Voshart, 1986), therefore treatment needs to involve psychological support as well as medication. This study design with frequent follow-up visits by the same investigator allowed psychological support to occur. However, those with serious medical illness on fluoxetine showed a significantly improved response over those on placebo. Psychological support did not appear as effective in the severely ill without active antidepressant treatment.

It may be postulated that depression in physically ill patients is reactive. Where the illness is minor or treatable, the response to antidepressants is similar to that to placebo as treatment of the physical problem will have removed the maintaining factor for the depression. Where the illness is serious, the use of antidepressants shows a significant response over placebo, treatment of the physical illness being able to modify rather than cure.

There were eight deaths in the 82 patients randomized to the trial, four in the first week. The average death rate for a population of this age without physical or psychiatric illness is approximately 5% per year (Murphy, 1983). However, the increase in mortality in patients with both depression and physical illness is well documented (Murphy, 1983; Koenig *et al.*, 1989b; Evans, 1993a). Depression may affect the course and outcome of, or the reaction to, the physical illness as much as it affects the quality of life (Koenig, 1990). Although the follow-up period in this study was too short to demonstrate any differences in mortality between the groups, the effect of successful treatment with SSRIs on mortality over a 12-month period has been shown in open treatment of a similar population (Evans, 1993a) to reduce

the rate from the significantly higher levels of the depressed and physically ill back to the rate of the non-depressed physically ill. Treatment with SSRIs can be considered safer than leaving the condition untreated.

Seventy-two per cent of patients entering the study dated their onset of symptoms to over 3 months and a third to over 1 year. As few patients had previously considered their symptoms to be due to a treatable condition, the lack of previous psychiatric treatment is not surprising.

The improvement in MMSE score is more obvious in the fluoxetine group. Fluoxetine is an SSRI, thus it increases the level of this particular monoamine in the synaptic cleft. Serotonin can have an alerting effect and thus may improve scoring through increased attention and concentration, there may be a direct effect on cognition, or the greater percentage of patients recovering from their depression on active treatment may have had a direct effect. Future research in this area will be helpful.

Series (1992) considers the main benefit of drug treatment is to approximately double the chances of recovery from depression with possible associated improvements in the physical condition. This trial shows the response rate of the fluoxetine treated group was increased by a factor of 1.8 over the placebo group. The presence of physical illness, often severe or multiple, did not reduce the effectiveness of the medication, which was well tolerated overall; indeed, it appeared to increase the response in those who completed 8 weeks. A trial of nortriptyline in a similar population (Koenig *et al.*, 1989a) had extreme difficulties with recruitment due to medical contraindications to the tricyclic antidepressant which were not a problem in this study.

This study has shown that drug treatment of depression in the physically ill with fluoxetine is well tolerated. Psychological treatment and support is also of benefit. The placebo group appeared to continue to complain of somatic symptoms, showing a significant rise in the number of concomitant medications taken overall. It is possible the 'placebo effect' may only be seen in the psychological symptoms of a depressive illness, not the somatic ones. This also deserves further study.

ACKNOWLEDGEMENTS

Thanks to Jackie Turner at Pharmakopius International, Reading, for statistical support; and to

Lilly Industries Limited for funding the study, number B1Y BP HC55.

REFERENCES

- Alexopoulos, G. S. and Chester, J. G. (1992) Outcomes of geriatric depression. *Clin. Geriatr. Med.* 8, 363-376.
- Baldwin, R. C. and Jolley, D. J. (1986) The prognosis of depression in old age. *Brit. J. Psychiat.* 149, 574-583.
- Burn, W. K., Davies, K. N., McKenzie, F. R. and Brothwell, J. A. (1993) The prevalence of psychiatric illness in acute geriatric admissions. *Int. J. Geriatr. Psychiat.* 8, 171-174.
- Burvill, P. W. (1990) Quantification of physical illness in psychiatric research in the elderly. *Int. J. Geriatr. Psychiat.* 5, 161-170.
- Burvill, P. W., Hall, W. D., Stampfer, H. G. and Emmerson, J. P. (1991) The prognosis of depression in old age. *Brit. J. Psychiat.* 158, 64-71.
- Charleston, M. E. and Horwitz, R. I. (1984) Applying results of randomised trials to clinical practice: Impact of losses before randomisation. *Brit. Med. J.* 289, 1281-1284.
- Cole, M. G. (1983) Age, age of onset, and course of primary depressive illness in the elderly. *Can. J. Psychiat.* 28, 102-104.
- Copeland, J. R. M., Dewey, M. E. and Griffiths-Jones, H. M. (1986) A computerised diagnostic system and case nomenclature for elderly subjects: GMS and AGE-CAT. *Psychol. Med.* 16, 89-99.
- Copeland, J. R. M., Dewey, M. E., Wood, N., Searle, R., Davidson, I. A. and McWilliam, C. (1987) Range of mental illness among the elderly in the community: Prevalence in Liverpool using the GMS-AGE-CAT package. *Brit. J. Psychiat.* 150, 815-823.
- Copeland, J. R. M., Kelleher, M. J., Kellett, J. M., Gourlay, A. J., Gurland, B. J., Fleiss, J. L. and Sharpe, L. (1976) A semi-structured clinical interview for the assessment of diagnosis and mental state in the elderly. The Geriatric Mental State Schedule I: Development and reliability. *Psychol. Med.* 6, 439-449.
- Evans, M. E. (1993a) Depression in elderly physically ill inpatients: A 12-month prospective study. *Int. J. Geriatr. Psychiat.* 8, 587-592.
- Evans, M. E. (1993b) Development and validation of a screening test for depression in the elderly physically ill. *Int. Clin. Psychopharmacol.* 8(4), 329-331.
- Fedoroff, J. P. and Robinson, R. G. (1989) Tricyclic antidepressants in the treatment of post-stroke depression. *J. Clin. Psychiat.* 50(7), 18-23.
- Feighner, J. P., Boyer, W. F., Hendrickson, G. G., Pambekian, R. A. and Doroski, V. S. (1990) A controlled trial of adiazolam vs desipramine in geriatric depression. *Int. J. Clin. Psychopharmacol.* 5, 227-232.
- Folstein, M. F., Folstein, S. E. and McHugh, P. R. (1975) 'Mini Mental State'. A practical method for grading the cognitive state of patients for the clinician. *J. Psychiat. Res.* 12, 189-198.
- Georgotas, A. and McCue, R. E. (1989) The additional benefit of extending an antidepressant trial past 7 weeks in the depressed elderly. *Int. J. Geriatr. Psychiat.* 4, 191-195.
- Gurland, B. J., Copeland, J. R. M., Kelleher, M. J., Kuriansky, J., Sharpe, L. and Dean, L. (1983) *The Mind and Mood of Ageing: The Mental Health Problems of the Community Elderly in New York and London*. Haworth Press, New York; Croom Helm, London.
- Hamilton, M. (1960) A rating scale for depression. *J. Neurol. Neurosurg. Psychiat.* 23, 56-62.
- Hammond, M., Evans, M. E. and Lye, M. (1993) Depression in medical wards. *Int. J. Geriatr. Psychiat.* 8, 957-958.
- Hanley, I. and Baikie, E. (1984) Understanding and treating depression in the elderly. In *Psychological Approaches to the Care of the Elderly* (I. Hanley and J. Hodge, Eds). Methuen, New York.
- Harper, R. G., Kotik-Harper, D. and Kirby, H. (1990) Psychometric assessment of depression in an elderly general medical population. *J. Nerv. Ment. Dis.* 178, 113-119.
- House, A., Dennis, M., Mogridge, L., Warlow, C., Hawton, K. and Jones, L. (1991) Mood disorders in the year after first stroke. *Brit. J. Psychiat.* 158, 83-92.
- Jarvik, L. and Perl, M. (1981) Overview of physiologic dysfunction related to psychiatric problems in the elderly. In *Neuropsychiatric Manifestations of Physical Disease in the Elderly* (A. J. Levenson and R. C. W. Mill, Eds). Raven Press, New York.
- Kay, D. W. K., Beamish, R. and Roth, M. (1964) Old age mental disorders in Newcastle upon Tyne. Part I. A study of prevalence. *Brit. J. Psychiat.* 110, 146-158.
- Koenig, H. G. (1990) Reply to: depressed or just sick. *Arch. Intern. Med.* 150, 1349-1350.
- Koenig, H. G. and Breitner, J. C. S. (1990) Use of antidepressants in medically ill older patients. *Psychosomatics* 31(1), 22-32.
- Koenig, H. G., Goli, V., Shelp, F., Kudler, H. S., Cohen, H. J. and Blazer, D. G. (1992) Major depression in hospitalised medically ill older men: Documentation, management and outcome. *Int. J. Geriatr. Psychiat.* 7, 25-34.
- Koenig, H. G., Goli, V., Shelp, F., Kudler, H. S., Cohen, H. J., Meador, K. G. and Blazer, D. G. (1989a) Antidepressant use in elderly medical inpatients: Lessons from an attempted clinical trial. *J. Gen. Int. Med.* 4, 498-505.
- Koenig, H. G., Meador, K. G., Cohen, H. J. and Blazer, D. G. (1988) Self rated depression scales and screening for major depression in the older hospitalised patient with medical illness. *J. Am. Geriatr. Soc.* 36, 699-706.
- Koenig, H. G., Shelp, F., Goli, V., Cohen, H. J. and Blazer, D. G. (1989b) Survival and health care utilisation in elderly medical inpatients with major depression. *J. Am. Geriatr. Soc.* 37, 599-606.

RATING DEPRESSION SEVERITY IN THE ELDERLY PHYSICALLY ILL PATIENT: RELIABILITY AND FACTOR STRUCTURE OF THE HAMILTON AND THE MONTGOMERY-ASBERG DEPRESSION RATING SCALES

MARGARET F. HAMMOND*

Research Associate, Department of Geriatric Medicine, University of Liverpool, Liverpool, UK

SUMMARY

Objectives. To assess the appropriateness of the Hamilton Depression Rating Scale and the Montgomery-Asberg Depression Rating Scale in depressed elderly physically ill patients.

Design. Depression scale scores from depressed medical inpatients were assessed for internal consistency using Cronbach's α , and subjected to exploratory principal components factor analyses.

Subjects. 100 medical inpatients, aged 65 years and over (median age 80.5 years, range 66-99), 74 female, with Geriatric Mental State Schedule-AGECAT case level diagnoses of depression.

Materials. The 17-item Hamilton Depression Rating Scale (HDS) and the Montgomery-Asberg Depression Rating Scale (MADRS).

Results. Coefficient α for the HDS was 0.46; for the MADRS 0.61. Successive deletion of HDS items to maximize α resulted in a six-item scale ($\alpha = 0.60$); after deletion of five MADRS items, α was 0.77. Factor analysis of the HDS yielded a four-factor solution accounting for 57% of the variance, the majority due to anxiety and insomnia items; the MADRS yielded a two-factor solution explaining 60% of the variance.

Conclusions. Coefficient α for both scales is well below the minimum necessary for the total score to be used to represent a single construct. The HDS appears to be an unreliable measure of depression severity in elderly people with physical illness, as the major variance in the scores is due to anxiety and insomnia. The MADRS performs better, and with modification may be an appropriate measurement of depression severity in this population.
© 1998 John Wiley & Sons, Ltd.

Int. J. Geriatr. Psychiatry, 13: 257-261, 1998.

KEY WORDS—depression; elderly; depression rating scales; factor analysis

The prevalence of depressive illness is high in elderly people and in medical inpatients (Saunders *et al.*, 1993; Mayou and Hawton, 1986). However, depressive symptoms may occur in the absence of depressive illness in hospitalized patients (Silverstone, 1991) and elderly people (Dessonville *et al.*, 1982), and the symptomatology of depression in both the elderly and the medically ill may differ from that seen in physically healthy younger adults (Ouslander, 1982; Cavanaugh *et al.*, 1983; Blumenthal, 1980). Nevertheless, scales which were

developed and validated in younger and physically well samples are commonly used to assess depression severity and response to treatment in elderly and physically ill patients without validation in these populations.

The Hamilton Depression Rating Scale (HDS) (Hamilton, 1960, 1967) is considered to be the gold standard among depression rating scales and is the most commonly used outcome measure in antidepressant trials in elderly patients (Anstey and Brodaty, 1995). However, the HDS includes many somatic items which may inflate the total score among both physically ill and elderly patients (Silverstone, 1991; Katona, 1994). The Montgomery-Asberg Depression Rating Scale (MADRS) (Montgomery and Asberg, 1979) may

*Correspondence to: Ms M. F. Hammond, Geriatric Medicine, University Clinical Department, The Duncan Building, Daulby Street, Liverpool L69 3GA, UK. Tel: 0151-706-4064. Fax: 0151-706-4064.

be a better alternative in these populations (Katona, 1994; Kearns *et al.*, 1982) as it includes fewer somatic items.

Principal components factor analysis (PCA) is a means of understanding the correlations between items in a scale, and can be applied to a scale with good internal consistency to determine the underlying dimensions of a hypothetical construct (Nunnally, 1978) such as depression. If PCA is applied to scales with low internal consistency, each factor may demonstrate the presence of separate constructs measured by the scale (Nunnally, 1978). There are no studies published regarding the factor structure of the MADRS in elderly people. Factor analyses of the HDS in depressed, otherwise physically healthy people over the age of 60 (Kivela and Pakkala, 1988) and in relatively healthy elderly people (12.5% of whom were depressed) (Good *et al.*, 1987) demonstrated structures different from that found in younger adults (Hamilton, 1967).

This study examined the internal consistency and factor structure of the HDS and MADRS in depressed elderly physically ill patients to assess the usefulness of these scales for this population.

SUBJECTS AND METHODS

Acute medical admissions aged 65 and over to three geriatric wards were consecutively screened for depression using the Evans Liverpool Depression Rating Scale (ELDRS), which was developed and validated in acute geriatric medical inpatients (Evans, 1993). The cutpoint used (5/6) has a sensitivity of 90.6% and specificity of 85.1% with psychiatric interview. Patients who scored above 5 on the ELDRS completed the Geriatric Mental State (GMS) (Copeland *et al.*, 1986) interview, the 17-item HDS and the MADRS. Patients who were too severely physically ill or too cognitively impaired to give consent for interview were excluded. Acute and chronic illnesses were itemized for each patient. The local Ethics Committee approved the study.

Analyses

Coefficient α assesses the internal consistency of a scale by determining item homogeneity (Cronbach, 1951), and should be at least 0.70 for a short scale, and up to 0.90 for a longer scale, if a scale is to be used as a measure of a single construct and

reported as a global score (Streiner, 1993). In this study, α coefficients were determined for each scale using SPSS procedure 'Reliability'. Items with the lowest correlations with the total scores were then successively deleted to produce the maximum coefficient α .

Exploratory principal components factor analyses with both oblique and orthogonal rotations were performed using SPSS procedure 'Factor', rotations 'Oblimin' and 'Varimax'. The correlation matrices were examined before factor extraction and items which failed to correlate at 0.30 or greater with any other item (Kline, 1994) or which failed to achieve sampling adequacy were excluded. The number of factors to extract was determined using the eigenvalue greater than 1 criterion combined with the scree test to yield a solution explaining at least 50% of the variance in the scores (Streiner, 1993).

A heterogeneous study population of 100 patients, fulfilling the main criterion of depressive illness determined by GMS-AGECAT, was determined to meet the minimum ratio necessary for reliable factor analyses (Streiner, 1993; Kline, 1994).

RESULTS

There were 74 female and 26 male subjects, median age 80.5 years (range 66-99), with Geriatric Mental State Schedule-AGECAT diagnoses of depressive illness (DN3 or DP3 and above). Subjects had a median of two (range 1-7) acute and a median of three (range 0-10) chronic illnesses (mainly cardiovascular, respiratory, gastrointestinal and musculoskeletal).

The median HDS score was 20 (range 11-32). The initial coefficient α was 0.46. Where the removal of items would increase α , these were successively eliminated to maximize coefficient α : lack of insight, work and interests, retardation, general somatic symptoms, depressed mood, suicidal feelings, guilt feelings, loss of libido, gastrointestinal symptoms, early insomnia and loss of weight were eliminated in that order. This resulted in a six-item scale with a coefficient α of 0.60. The final scale retained middle and late insomnia, agitation, psychic and somatic anxiety and hypochondriasis.

The median MADRS score was 26 (range 9-44). The initial coefficient α was 0.61. Successive deletion of items (reduced sleep, inner tension, pessimistic thoughts, reduced appetite and suicidal

thoughts) to maximize α resulted in a five-item scale containing apparent and reported sadness, inability to concentrate, lassitude and inability to feel, with a final coefficient α of 0.77.

Examination of the HDS correlation matrix showed that three items (feelings of guilt, suicidal feelings and insight) failed to correlate at 0.30 or greater with any other item and these items were dropped from the factor analysis. The libido item failed to achieve sampling adequacy and was also dropped. Principal components analysis with Varimax rotation of the remaining 13 items yielded four factors accounting for 57.1% of the variance in the scores (Table 1). Oblique rotation produced an almost identical structure and demonstrated the absence of correlations between factors.

Validation of the anxiety factor from this analysis was undertaken by correlating the total scores on the three main items loading the factor (agitation, somatic and psychic anxiety) from 50 randomly selected subjects in the original sample with their GMS-AGECAT anxiety scores, 14 of which were case level and 32 subcase level. The median HDS anxiety factor score was 4 (maximum possible score = 12) with a range of 0-9. Spearman's correlation coefficient between HDS anxiety factor and AGECAT score was $r = 0.43$, $p = 0.002$ (95% CI 0.17-0.63).

Principal components factor analysis with Varimax rotation of the MADRS scores yielded a two-factor solution, accounting for 60.2% of the total variance in the scores (Table 2). Three items (reduced sleep, reduced appetite and pessimistic thoughts) were dropped from the analysis as they failed to correlate at 0.30 or above with any other items. Oblique rotation resulted in the same uncorrelated factor structure.

DISCUSSION

In this sample the HDS had a low level of internal consistency, which suggests that it is not measuring a single construct even when maximized by deletion of 11 of the 17 items. When a scale with inadequate reliability is used as a measure of change, the amount of error present in the measurement tends to increase (Streiner and Norman, 1995). In this case, the HDS should not be used to measure treatment effects.

The HDS items comprising the most homogeneous scale appear to be measuring anxiety, and the first factor extracted in the analysis is one

Table 1. Factor structure of the HAMD

Factor	Variance %	HAMD item	Loading
1 'anxiety'	20.4	Agitation	0.80
		Psychic anxiety	0.76
		Somatic anxiety	0.66
		(Hypochondriasis) (Work and interests)	(0.41) (-0.30)
2 'insomnia'	15	Late insomnia	0.80
		Middle insomnia	0.73
		Early insomnia	0.66
3 'illness'	12.9	Work and interests	0.60
		Hypochondriasis	0.59
		Gastrointestinal	0.58
		General somatic	0.54
		Weight loss	0.51
		(Retardation)	(0.36)
4 'affect'	8.8	Depressed mood	0.84
		Retardation	0.59
		(Somatic anxiety)	(-0.43)
		(Work and interests)	(0.34)

Note: Items in brackets are secondary loadings.

Table 2. Factor structure of the MADRS

Factor	Variance %	MADRS	Loading
1 'anhedonia'	41.1	Lassitude	0.85
		Inability to feel	0.80
		Apparent sadness	0.71
		Concentration loss	0.70
		(Reported sadness)	(0.41)
2 'dysphoria'	19.1	Inner tension	0.76
		Reported sadness	0.72
		Suicidal feelings	0.66

Note: Items in brackets are secondary loadings.

measuring anxiety. Although anxiety is undoubtedly an important aspect of depressive illness in some individuals, as an outcome measure a scale in which almost one-quarter of the possible total score can be derived from anxiety items allows for the situation in which, for example, a mildly depressed patient with high anxiety levels has an equivalent score to that of a suicidal patient with loss of insight and severe retardation but no anxiety. In this hypothetical case, a drug with good anxiolytic effects could result in a reduction of 50% in the score of the first patient without affecting cardinal symptoms of depression.

Alternatively, these homogeneous scale items may represent a so-called 'masked depression' where the main clinical features are somatic

preoccupation with psychological and physical anxiety symptoms. However, it seems unlikely that the best scale to measure depression in a physically ill elderly population would be one which assessed agitated masked depression. Although frank hypochondriasis is an important symptom in severe depression in the elderly, among this group hypochondriasis is more likely to represent the degree of real physical illness present (Costa and McCrae, 1985) and associated worrying or preoccupation with symptoms. Physical illnesses were recorded for the sample, but the complexity of quantifying severity of illness and the effects of comorbidity precluded attempting to measure any association between the HDS scores and physical illness. Further study, using a reliable method of quantifying illness, would enable a possible correlation to be examined.

The second factor is insomnia; the different loading values for the three insomnia items indicate that they are not simply duplicates of one another, but they show no association with other symptoms. It is possible that the assessment of sleep difficulties in depression is not adequately covered by the HDS items.

The third factor, containing somatic symptoms, may represent symptoms and signs of physical rather than psychological illness. Depressed mood correlates positively solely with retardation in factor four, which is responsible for only 8.8% of the variance, and a factor with only two items should probably be disregarded (Kline, 1994; Streiner, 1994). The salient loadings for four items on more than one factor further negate the usefulness of the global HDS scale score.

Two previously published studies of the factor structure of the HDS in elderly people (Kivela and Pakkala, 1988; Good *et al.*, 1987) both reported four factors; neither reported a measure of internal consistency. The first analysis (Good *et al.*, 1987), in community elderly people, accounted for 60.7% of the variance in the scores; the first factor, with 30% of the total variance, loaded all insomnia and anxiety items; and, as in the present study, all somatic items loaded the same factor. A second study, of depressed elderly subjects (Kivela and Pakkala, 1988), accounted for only 40% of the total variance in the scores, with factors termed 'depressed mood with loss of interest' (19% of the variance), which included psychic anxiety and general somatic symptoms, 'somatic anxiety and hypochondriasis', 'guilt versus loss of insight' and 'loss of weight', each with less than 8% of the total

variance. Both of these suggest that anxiety and somatic symptoms may not have a straightforward association with depression in elderly people.

Coefficient α for the MADRS in this study is also inadequate to allow the total score to be used with confidence. However, after deletion of items, the maximized coefficient α of the resulting five-item scale is very good and suggests that these items may represent important features of depression in this sample. In the PCA, the first factor could represent features of physical illness; without external validation on a measure of either depression severity or physical illness, it is not possible to draw firm conclusions. The failure of reduced sleep and reduced appetite to correlate with other items, however, implies that the first factor is not somatic. It has been suggested that poor concentration and lassitude, as well as reduced appetite and sleep, are somatic items which should be ignored when using the MADRS to assess depression in the physically ill (Silverstone, 1990), but this has not been confirmed in this study. It has previously been noted (Nyth *et al.*, 1992) that treatment response rates in elderly physically ill depressed patients, according to the MADRS, corresponded well with the Clinical Global Impression Scale (Guy, 1976) while HDS response rates did not, further supporting the MADRS as an appropriate measure of depression severity.

Items which are endorsed infrequently or have poor power to discriminate among subjects contribute little to a scale (Streiner, 1993). This has been recognized as a problem with the HDS for use in the elderly, in which menstrual disturbances and loss of libido are assessed (Hamilton, 1967; Katona, 1994). This study confirmed the universally low endorsement of the libido item, which failed to achieve sampling adequacy. The MADRS pessimism item, and the equivalent HDS guilt item, were both discarded due to lack of correlation with any other items. Pessimism and/or guilt, as well as suicidal feelings, have been noted to be relatively infrequent in depressed medically ill patients (Moffic and Payke, 1975; Cavanaugh *et al.*, 1983), although they become discriminatory in very severe depression (Clarke *et al.*, 1983).

CONCLUSION

The HDS global score is inappropriate as a measure of depression severity in the physically ill elderly patient. Although it may be useful in

assessing change in individual symptoms, the HDS has an unacceptably low coefficient α to uphold its use as a global score in this population. Only by deleting the main diagnostic symptoms of major depression can an α approaching an acceptable level be achieved; what remains appears to be a scale measuring anxiety. Items other than those used in the HDS are necessary for an overall measure of depression severity in elderly people with physical illness.

The MADRS may be a better choice. Those MADRS items with the maximum internal consistency may provide a useful measure of depression severity in this population. This conclusion requires replication and validation in further studies of physically ill and depressed old people.

ACKNOWLEDGEMENTS

Thanks to Dr Shaun O'Keeffe for helpful comments regarding earlier drafts of this paper.

The paper was presented at the British Geriatric Society Autumn meeting, November 1995.

REFERENCES

- Anstey, K. and Brodaty, H. (1995) Antidepressants and the elderly: Double-blind trials 1987-1992. *Int. J. Geriatr. Psychiat.* 10, 265-279.
- Blumenthal, M. D. (1980) Depressive illness in old age: Getting behind the mask. *Geriatrics* 35, 34-43.
- Cavanaugh, S., Clarke, D. C. and Gibbons, R. D. (1983) Diagnosing depression in the hospitalised medically ill. *Psychosomatics* 24, 809-815.
- Clarke, D. C., Cavanaugh, S. V. and Gibbons, R. D. (1983) The core symptoms of depression in medical and psychiatric patients. *J. Nerv. Ment. Dis.* 171, 705-713.
- Copeland, J. R. M., Dewey, M. E. and Griffiths-Jones, H. M. (1986) A computerised psychiatric diagnostic system and case nomenclature for elderly subjects: GMS and AGE-CAT. *Psychol. Med.* 16, 88-99.
- Costa, P. T. and McCrae, R. R. (1985) Hypochondriasis, neuroticism, and aging: When are somatic complaints unfounded? *Am. Psychol.* 40, 19-28.
- Cronbach, L. J. (1951) Coefficient alpha and the internal structure of tests. *Psychometrika* 16, 297-334.
- Dessonville, C., Gallagher, D., Thompson, L. W. et al. (1982) Relation of age and health status of depressive symptoms in normal and depressed older adults. *Essence* 5, 99-117.
- Evans, M. E. (1993) Development and validation of a screening test for depression in the elderly physically ill. *Int. Clin. Psychopharmacol.* 8, 329-331.
- Good, W. R., Vlachonikolis, P., Griffiths, P. et al. (1987) The structure of depressive symptoms in the elderly. *Brit. J. Psychiat.* 150, 463-470.
- Guy, W. (Ed.) (1976) *ECDEU Assessment Manual for Psychopharmacology. Clinical Global Impressions (028-CGI)*. US GPO, Washington, DC, pp. 216-222.
- Hamilton, M. (1960) A rating scale for depression. *J. Neurol. Neurosurg. Psychiat.* 23, 56-62.
- Hamilton, M. (1967) Development of a rating scale for primary depressive illness. *Brit. J. Soc. Clin. Psychol.* 6, 278-296.
- Katona, C. L. E. (1994) *Depression in Old Age*. Wiley, Chichester.
- Kearns, N. P., Cruickshank, C. A., McGuigan, K. J. et al. (1982) A comparison of depression rating scales. *Brit. J. Psychiat.* 141, 45-49.
- Kivela, S-L. and Pakkala, K. (1988) Factor structure of the Hamilton rating scale for depression among depressed elderly Finns. *Zeitschr. Psychol.* 21, 257-263.
- Kline, P. (1994) *An Easy Guide to Factor Analysis*. Routledge, London.
- Mayou, R. and Hawton, K. (1986) Psychiatric morbidity in the general hospital. *Brit. J. Psychiat.* 149, 172-190.
- Moffic, H. and Paykel, E. (1975) Depression in medical in-patients. *Brit. J. Psychiat.* 126, 346-353.
- Montgomery, S. and Asberg, M. (1979) A new depression scale designed to be sensitive to change. *Brit. J. Psychiat.* 134, 382-389.
- Nunnally, J. C. (1978) *Psychometric Theory*. McGraw-Hill, New York.
- Nyth, A. L., Gottfries, C. G., Lyby, K. et al. (1992) A controlled multicenter clinical study of citalopram and placebo in elderly depressed patients with and without concomitant dementia. *Acta Psychiatr. Scand.* 86, 138-145.
- Ouslander, J. G. (1982) Illness and psychopathology in the elderly. *Psychiat. Clin. N. Am.* 5, 145-158.
- Saunders, P. A., Copeland, J. R. M., Dewey, M. E. et al. (1993) The prevalence of dementia, depression and neurosis in later life: The Liverpool MRC-ALPHA study. *Int. J. Epidemiol.* 22, 838-847.
- Silverstone, P. H. (1990) Changes in depression scores following life-threatening illness. *J. Psychosom. Res.* 34, 653-659.
- Silverstone, P. H. (1991) Measuring depression in the physically ill. *Int. J. Methods. Psychiat. Res.* 1, 3-12.
- Streiner, D. L. (1993) A checklist for evaluating the usefulness of rating scales. *Can. J. Psychiat.* 38, 140-148.
- Streiner, D. L. (1994) Figuring out factors: The use and misuse of factor analysis. *Can. J. Psychiat.* 39, 135-140.
- Streiner, D. L. and Norman, G. R. (1995) *Health Measurement Scales: A Practical Guide to their Development and Use*, 2nd edn. Oxford University Press, Oxford.

LIVERPOOL
UNIVERSITY
LIBRARY

