DEPRESSION AMONG OLDER PEOPLE IN THE COMMUNITY; THE EFFECT OF INTERVENTION ON A SCREENED POPULATION

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THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF MEDICINE

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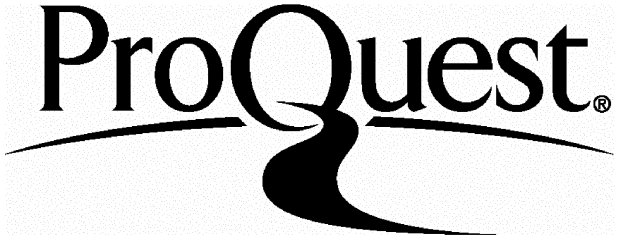
UNIVERSITY OF LONDON

1995



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QUITE UNDERGROUND; AS FLOWERS DEPART
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AND NOW IN AGE I BUD AGAIN,
AFTER SO MANY DEATHS I LIVE AND WRITE;
I ONCE MORE SMELL THE DEW AND RAIN,
AND RELISH VERSING.

GEORGE HERBERT (1593-1633)

ABSTRACT

There has been debate concerning the prevalence of depression among older people, but recent community studies using specially designed questionnaires indicate that it is the commonest psychiatric illness among this group. Little is known about the precise nature of depression encountered in the community; there is a lack of knowledge concerning factors associated with this depression, its prognosis and response to treatment.

96 older people screened and identified as cases of probable pervasive depression, by household enumeration in the Gospel Oak area of North London, were interviewed in detail using a valid, semistructured psychiatric assessment. In liaison with their general practitioners, they were then randomly entered into a case-controlled study. Half received standard, local primary care. The other half received this with the addition of a study nurse who worked with general practitioners and attempted to deliver management plans which had been developed by the local old age psychiatry multidisciplinary team. At the end of three months the subjects were interviewed with the original screening instrument by a worker outside the study.

Most of the depressed subjects were deemed by the local multidisciplinary team to require multifaceted interventions. Many of the pharmacological and social

interventions could not be implemented and this was mainly due to the subjects' unwillingness to accept them. Most psychological interventions could be delivered. There appeared to be no additional therapeutic activity on the control side despite general practitioners being informed of depression caseness. There was a significant difference in outcome at three months between subjects allocated to study nurse intervention and those in the control group.

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PREFACE

The investigations which form the basis of this thesis were undertaken by the author between March 1989 and November 1991, during a period of employment as a Research Worker and Honorary Senior Registrar at the Royal Free Hospital School of Medicine and the Institute of Psychiatry and Royal Bethlem and Maudsley Hospitals. Professor Anthony Mann acted as supervisor for this study. Analysis of results commenced from the end of 1991 to the end of 1993.

The subject of the thesis was decided upon by the author. He organised the day to day running of the study from which it originated. The subjects were recruited into the study by the author and the majority of data was collected by him, although the early screening and the final follow-up interview using the short-CARE were performed by other members of the Gospel Oak Research Group. The interventions were developed by an old-age psychiatry multi-disciplinary team following detailed presentations by the author and in his presence. These interventions were carried out by a study nurse employed for the study period. The general practitioners involved were approached by the author who explained the study to them and obtained their agreement. Analysis of data was performed by the author with advice from a statistician at the Institute of Psychiatry. The thesis presented here is entirely the work of the author.

ACKNOWLEDGEMENTS

The author gratefully acknowledges the assistance of the following people:

Professor Anthony Mann for encouragement, inspired thoughts and supervision.

Anna Waterreus for being an incredibly easy to work with and effective Study Nurse.

Dr. Nori Graham and her team for forming the management plans.

Karen Lefevre and other workers in the Gospel Oak Project for help with the short-CARE interviews.

Dr. Gill Livingston for paving the way with earlier work in the Gospel Oak Project.

Bob Blizard for the randomisation of the subjects and valuable advice on the statistical analysis.

Professor John Copeland for training on the GMS and for providing an early copy of the AGECAT package for interview analysis.

The general practitioners and residents of the Gospel Oak ward of North London for their cooperation and assistance.

The Department of Health and the Mental Health Foundation for funding the research project

Mrs Angela Thomas and Ms Jackie Moore for secretarial help

Mary and Charlotte Blanchard for tolerance and understanding of the need to complete this thesis.

PART ONE

LITERATURE REVIEW

CHAPTER 1. Definitions and Classification.

1.1 Older People: definition and demography

Within our society the definition of an older person is arbitrarily linked to the age at which someone is asked to retire from work. This is currently 65 years for men and 60 years for women; a time of major social changes, moving from a role of active participation in the work arena- having the potential to generate personal wealth through employment- to a role of dependency upon payments from the state and any other provisions which may have been made during employment. There is no real biological reason for this distinction; inevitably older people do suffer from age related infirmities but on the whole they remain mentally, socially and emotionally active through to death. Throughout this study the term older person refers to a person of pensionable age: men aged 65 years or more, women aged 60 years or more, unless otherwise specified.

The world population is constantly increasing; in 1988 it was estimated at 5100 million, and by the year 2000 it will be an estimated 6100 million (United Nations 1988). This growth will occur mainly in the less-developed countries and will be proportionately greater among those aged 75 years or more. Within the United Kingdom the proportion of the population over 65 years has increased from 5 to 16% over the last 100 years (Warnes 1989), and the Office of Population Census Statistics 1987 (OPCS 1987) predict that those

aged 60 years or more will increase from 20.8% to 26% by 2041, a relatively small increase, but those aged 85 years or over will virtually double in their numbers-an estimated increase of a million people.

1.2 Definitions of depression

The term depression has a broad range of meanings. It is generally viewed as a subjective experience involving feelings, some of which can be described as: sadness, lowness in spirits, hopelessness, dejection, unhappiness and loneliness. While it is accepted that depression involves a lowering of mood, for some the depressed individual may need to acquire certain other symptoms, or a particular level of mood change in order to attain their concept of status. An opinion may be taken by clinicians: that depression is a serious mental health problem, an illness with a biological basis quite separate and distinct from the reactive mood changes experienced by everybody from time to time. Thus Checkley (1986) would view depression as a morbid sadness, quantitatively and qualitatively distinct from sadness normally accompanying loss, with a discontinuity between a normal depressed mood and clinical depression, and the belief that biological markers will be found for clinical depression. But other workers do not believe that the situation is as definite as this, for instance Murphy (1986) states:

"the boundaries of "normal" sadness are not clear."

Another view of depression can be expressed: "depression...is the common cold of psychopathology, a ubiquitous affliction to which most or all of us are subject from time to time" (Coyne 1985). This view assumes that the onset of depression is determined by the psychological background of an individual and by their current social circumstances. Thus the alternative hypothesis is that depressed mood in otherwise normal people is quantitatively but not qualitatively different from the depression found in patients referred for psychiatric care. The additional features of clinically recognised depression arise when low mood becomes prolonged or intensified. That certain individuals with depression consult general practitioners or psychiatrists, and therefore become apparent cases, is argued to be dependent upon the presentation of their depression; their behavioural reaction to antecedents and the symptoms which may ensue. Thus while depression may be ubiquitous and a continuum, becoming a patient with depression may be related not only to severity of symptoms but to particular personality traits and early childhood experiences (Brown, Craig and Harris 1985).

The various symptoms of depression can be divided into four spheres: emotional, motivational, cognitive and vegetative. Emotional manifestations include sadness, anxiety, irritability, anger and anhedonia.

Snaith (1987) regards the feeling of anhedonia as critical in the distinction between depression as an illness and depressive symptoms within the community. Some individuals with depression deny sadness, feeling instead inhibited in their feelings.

Motivational aspects manifest as inertia, difficulty in functioning, and sometimes, in even performing the most basic daily activities. Depressed people avoid the world in a search for refuge from responsibility or demands upon their attention. In severe depression this may be demonstrated by "psychomotor retardation".

Cognitive features have been considered by some researchers and theorists (e.g. Beck 1967) to be causal in depression, whereas many see them as manifestations of an underlying disorder. The depressed person views themself, the world around them, and the future, in negative, pessimistic terms. They see themselves as inadequate and perceive little hope for change to the better. Occasionally they will express the wish to die or to end their own existence. As well as these "negative cognitions" the depressed person may have a slowing of thoughts and complain of difficulty in concentrating, and difficulty and uncertainty in making decisions.

The presence of vegetative symptoms is sometimes taken to indicate the presence of a "clinical" depression. These features are felt to have a

biological basis and therefore believed to be more amenable to pharmacological treatment. They include: fatigue, sleep disturbance (including difficulty getting off to sleep, restless sleep, early morning wakening, and occasionally excessive sleeping), appetite disturbance (usually a decrease in appetite and enjoyment of food with occasional evidence of weight loss, but sometimes an increase in eating with concomitant weight gain), there may be associated nausea and constipation, loss of sexual interest and enjoyment, non-specific somatic symptoms including headaches and a decreased tolerance of any minor ailments.

1.3 Classification systems

It is important to try to classify depression according to the current state of knowledge derived from research. Only then are we able to study the epidemiology of depresson, its natural history, its impact on people's lives, its response to possible management strategies, possible etiological factors, and then be able to communicate these findings. At the present time the classificatory systems have to be based upon phenomenology, response to treatment, and prognosis, that is until the ignorance of etiology is removed (Kendall 1983).

Epidemiology as a science must remain the cornerstone of enquiry to ensure that a true picture

of disease is studied and that these particular findings are then included into the development of future classification. Studies of non-representative populations may have limited implications but should not, as is unfortunately often the case, be allowed to influence completely our beliefs about the true nature of a syndrome or disease. The concept of "caseness" is the current methodological technique used to advance enquiry. A case can be what ever an investigator wishes. Its utility is in the process of definition and therefore replicability for comparative studies. Currently the most useful definitions of caseness have some pragmatic value, indicating need for treatment or type of treatment required, or helping to distinguish depression from other conditions with some similarity in symptoms such as dementia (Reding et al.1985), bereavement (Parkes 1965), schizophrenia (Hirsch 1982) or medical illness (Baldwin 1991). Other definitions of caseness are devised for research purposes in order to collect subtypes of a syndrome felt to be relevant for the investigation of etiological factors.

The simplest form of classification is severity-taking depression as a continuum, constructing a list of symptoms, and then assigning a person a depression score according to the number of symptoms present. Caseness can be arbitrarily defined by definition of a cut-point on any particular scale. It is then possible to validate such a measure against a

particular gold-standard e.g. psychiatrist's opinion, if this is required. Examples of such depression scales are the Beck Depression Inventory (Beck et al. 1961), the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff 1977) and the Zung Self-Rating Depression Scale (Zung 1965).

However, diagnostic systems are more complex, developing from the early work of Kraepelin, who separated psychoses into the two broad syndromes of dementia praecox and manic-depressive illness (affective disorders). Leonhard (1959) proposed the now widely accepted differentiation between bipolar depression (with manic episodes) and unipolar depression (in the absence of manic episodes). Beyond this there has developed a debate between categorical and dimensional approaches to classification within the notion of unipolar depression. The current major nosological systems which have been developed internationally are categorical systems -Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IIIR) (American Psychiatric Association 1987) and the International Classification of Diseases, currently undergoing its tenth revision, (ICD-10, World Health Organisation, 1992). Murphy (1986) questions whether there are different categories of depression and whether subgroups merely represent dimensions of severity. Kendall (1976) proposes that there are two dimensions

of depression which have been termed at various times endogenous /reactive, psychotic /neurotic, severe/ mild, or as he resolves them to be: type A/type B. The first type in this dimensional system is a severe, unwavering depression with retardation, insomnia, weight loss and more often an acute onset. The second type is milder, more variable, often exhibiting anxiety and appetite disturbance.

The diagnostic criteria of Feighner et al.(1972) contain operational definitions for sixteen psychiatric diagnoses stating symptoms required for a diagnosis and those which exclude it. For a diagnosis of depression there is the requirement of a specific depressed mood of at least one months duration plus five out of a list of eight other depressive symptoms (four indicating "probable" depression). The depression is classified as secondary if there is a pre-existing non-affective psychiatric disorder or serious medical illness.

The Research Diagnostic Criteria (RDC) (Spitzer et al. 1975,1978) are a refinement of the Feighner criteria and require only a one week duration of symptoms. Depression is classified as major- which may or may not be subtyped into primary, secondary, recurrent, psychotic, incapacitating, endogenous, agitated, retarded, situational or simple. Minor depressive disorder requires depressed mood plus two or more of a list of symptoms. Intermittent depression

is classified as a depression of similar intensity to minor depression but of an intermittent nature and lasting at least two years.

The DSM-IIIR classificatory system separates mood disorders into bipolar and depressive disorders depending upon whether or not a manic episode, as defined in the manual, has been present. Depressive disorders are then classified as either major depressive episodes - depressed mood for at least two weeks with at least five other symptoms from a list given (with or without melancholia) - dysthymia - depressed mood for more days than not over a two year period plus two from a list of symptoms - or depressive disorder not otherwise specified (DNOS).

The ICD-10 classificatory system lists affective disorders as i) manic episodes with or without psychotic symptoms, ii) depressive disorders iii) bipolar affective disorders, iv) recurrent depressive disorders, v) persistant affective disorders and vi) other mood disorders. Groups ii) - iv) are separated according to degree of severity (mild, moderate or severe) and presence or absence of psychotic symptoms. As an example, the criteria for mild depressive episode are symptoms as listed, severe enough to cause distress and usually to be noticed by other people for a minimum of two weeks.

1.4 The Classification of Depression in Older People

There are specific difficulties in the assessment and classification of depression in older people: i) there may be clinical differences in the presentation of depression when compared to younger people, ii) there is an increase in physical illness and disability in old age and these have a complicated relationship with depression, iii) it can be difficult to distinguish depression from the cognitive deficits of dementia, an increasingly prevalent condition with advancing age, iv) there is a grey area between depression requiring intervention and the mood state of demoralisation which is often felt to be part of the ageing process.

To help overcome some of these difficulties, assessment measures and classificatory systems have been designed specifically for older people. Gurland et al.(1983) have developed the Comprehensive Assessment and Referral Evaluation (CARE) measure along with the concept of "pervasive depression" (Kay et al. 1985). This classification of depression acknowledges that levels of depression, less severe than for instance DSM-IIIR major depression, may still have detrimental effects on emotional, social, cognitive and physiological functioning in older people and may also benefit from clinical intervention. Thus a line is drawn between depression that is relevant and depression that is not relevant

to care providers. Copeland et al.(1986) have developed a classificatory system for depression in older people based upon their assessment measure, the Geriatric Mental State (GMS). This system views depression as a continuum from noncaseness through subcaseness to "neurotic" or milder cases and "psychotic" or severer cases. Along with levels on depressive symptomatology the system is able to generate, through a computer programme called AGECAT, levels on seven other symptom clusters (organicity, manic symptoms, schizophrenia/paranoid related symptoms, anxiety, phobias, obsessive/compulsive symptoms, and hypochondriasis). It can therefore generate not only an hierarchically determined diagnostic classification, but also a descriptive picture of a depression.

1.5 Conclusions

1. The population of the world is getting older. In the UK it is the over 85 group in particular which is expected to increase substantially.
2. Depression can be conceptualised as a continuum of mood with arbitrary cut off points to define clinical caseness, or as a clinical entity or category quite separate from reactive mood.
3. The current major nosological systems are DSM III-R and ICD-10 which use categorical nomenclature.

4. The concept of "pervasive depression" has been developed and utilised epidemiologically in the Comprehensive Assessment and Referral Evaluation (CARE) measures for older people.

5. The Geriatric Mental State (GMS) - AGECAT classificatory system, using cut-points along a psychiatric continuum, has also been developed to determine the psychiatric morbidity of older people within the community.

CHAPTER 2 The epidemiology of depression among older people

2.1 Introduction

Prevalence surveys into depression among older people have measured morbidity at three levels: community, primary care and hospital clinic. The results are not comparable because of the large hidden morbidity among the older population that will be discovered in the community sample, the large number of cases that never reach specialist mental health resources from primary care, and the severe and resistant cases which tend to accumulate in clinics (Shepherd et al. 1966, Goldberg and Huxley 1992). In addition, all published prevalence studies have their own idiosyncrasies of case definition, sample frame and means of assessment that make differences between results hard to interpret.

2.2 Community-based depression

Depressive symptoms appear to be more frequent with increasing age (Gaitz and Scott 1972) and its concomitant disability (General Household Survey 1986). It was thus surprising when results from the National Institute of Mental Health/Epidemiologic Catchment Area (NIMH/ECA) studies indicated that depression, as they identified and defined it, was less prevalent among adults aged 65 years or more than among younger age groups. Weissman et al. (1985) examined 2,588 non-institutionalised people aged 65 years or more identified by a probability sample of

New Haven, Connecticut and 12 surrounding towns. They used the Diagnostic Interview Schedule (DIS) in their assessment of depression and excluded somatic symptoms- which may possibly have been due to physical illness. The prevalence of major depression was 1.1% (excluding bereavement) - 2 or 3 times less than younger age groups. There were also substantially lower prevalence rates of bipolar disorder (0.1%) and dysthymia (2.4%).

The findings of the NIMH/ECA studies for older people have been criticised on several points (Snowdon 1990). Although large samples were used with good response rates (approximately 74%), a quarter of the interviews were incomplete and/or completed by informants. The findings from older people in institutions were not included. The Diagnostic Interview Schedule (DIS) excluded minor episodes of depression and also depression associated with physical disorders - increasingly common with age. It was noted that the DIS identified more phobia than depression cases among older people. This could have been due to the fact that the DIS is highly structured and devised to be performed by lay interviewers; denial of depressive mood and somatisation are not uncommon in depression among older people.

A recent study by Henderson et al.(1993) discovered a rate of 1.0% for DSM-IIIR major depression in a community survey of people aged 70

years or older in Australia thus apparently confirming the earlier studies. But there was also evidence of a high level of depressive symptoms among older people. These "below case level" depressive symptoms correlated with neuroticism, poor physical health, disability and a history of previous depression. Their clinical significance and the possible role intervention may have is still not known. This study reinforces the arbitrariness of "caseness" for depression among older people and the fact that because someone does not reach such caseness, it does not necessarily mean that they do not possess clinically relevant depressive symptoms.

The concern that prevalent physical illnesses in older people may cause an increase in the reporting of somatic symptoms and therefore a distortion in the prevalence rate of depression is addressed by Berkman et al. (1986). Physical disability among their study population was associated with virtually every item on their depression scale (CES-D), not just the somatically orientated ones. A factor analysis of responses on this scale from older people produced results almost identical to younger and middle-aged adults. They concluded that disability had a pervasive influence across all domains of depressive symptomatology, and that clinicians and more diagnostically -oriented research instruments tended to underestimate rates of depression among older

people by attributing their somatic complaints and/or dysphoric states simply to their declining physical state.

Even if the majority of older adults do not fit DSMIIIR criteria for major depression but rather have depressive symptoms associated with physical illness and/or adjustment to life stress, it is important to realise that **"any health policy based on the prevalence of major depressive disorders will be ineffective if the loss of social, emotional, physiological, and cognitive function is associated with depressive symptoms that are substantial and widespread but not congruent with a diagnosis of a major disorder"** (Kennedy 1989).

There has therefore been a need to devise assessment schedules specifically for older people. The Comprehensive Assessment and Referral Evaluation (CARE) instruments (Gurland 1983) have been designed to identify cases of depression among older people severe enough to warrant some form of intervention (probable pervasive depression). They were used to discover very similar levels of depression in New York (13%) and London (12.9%).

Copeland et al. (1987) utilised a "psychiatric" definition of caseness and developed the Geriatric Mental State (GMS) along with a computer programme (AGECAT) in order to analyse in a repeatable fashion the responses to their semi-structured questionnaire.

They discovered 3.0% "psychotic" or more severe depression and 8.3% "neurotic" or milder depression among their older Liverpool community. From the results of their three year follow-up (Copeland et al.1992) they were able to estimate the incidence of GMS depression caseness as 23.7 per thousand per year.

Livingston et al.(1990a) screened the Gospel Oak electoral ward in North London using the short-CARE (Gurland 1984) and discovered 15.9% "probable pervasive depression" increasing to 18.5% when the residents of a local authority home were included. Depression was highly associated with not being currently married (but not with age), with living alone, with more recent contact with their general practitioner and hospital outpatients, with increased prescription of benzodiazepines and anti-depressants.

2.3 Studies of depression in primary care

Prevalence data from primary care surveys is not common. Samples differ from those in the community in that attenders have decided to consult their doctor, and consultation may well be for a physical condition. Recognition of any accompanying depression is dependent upon general practitioner diagnosis; those recognised as depressed form part of the conspicuous morbidity in primary care, while those not recognised constitute part of the hidden morbidity. General

practice surveys therefore are of a self-selected group who are likely to have an increased physical morbidity by dint of their consultation. Surveys may report on total morbidity if the survey used a screening procedure or on conspicuous morbidity alone if the prevalence data is drawn from general practitioner records.

Within primary care, the Third National Morbidity Survey (of conspicuous morbidity) 1981-82 of Great Britain (Third National Study 1986) discovered episode rates per 1000 people aged 65 or over at risk of 4.0 for affective psychosis and 40.7 for depression. Iliffe et al. (1991) examined a random sample of patients aged at least 75 years registered with London General Practitioners, and utilised the short-CARE (Gurland et al.1984). They found evidence of depression in 22% of subjects, and the majority of these cases of depression, representing total morbidity, were mild in nature. A study from the USA (Borson et al.1986) measured depression in attenders of Veterans Primary Care facilities. Using the Zung self-reporting depression scale (Zung et al.1983) they discovered 24.4% caseness among these men aged over 60 years, with an estimated 10% prevalence of DSMIIIR major depression. Only 1% of those depressed reported the use of mental health services.

That a large proportion of depression does remain "hidden" from mainstream medical services has been

indicated by several studies. Iliffe et al. (1991) examined general practitioners' notes and found that only 6% of their screened depressed cases were recorded as such. In an Australian setting, Bowers et al. (1990) discovered that general practitioners failed to identify 12 out of 15 patients, who met criteria for depression using a standard interview. In Britain, Macdonald (1986), compared general practitioners' identification of depression among 235 consecutive attenders in a general practice in London with an independent psychiatric assessment, and surprisingly found that the general practitioners only "missed" 9% of depressions. They were, in fact, over-identifying depression, labelling a large number of older people as depressed who did not meet research criteria. Thus, Macdonald claimed, a more important problem was that of lack of diagnostic precision which lead to no active management.

2.4 Conclusions

1. The prevalence of DSM IIIR major depression is approximately 1.0% - substantially lower than in younger age groups. The level of "subclinical case" depressive symptoms is high.

2. The clinical significance and response to interventions of these depressive symptoms among older peole is still unclear.
3. Epidemiological questionnaires specially designed to detect depression among older people estimate "significant" depression in 13-15%.
4. There is evidence of misdiagnosis and hence lack of specific intervention for depression within primary care.

Chapter 3. The nature of depression among older people

3.1 Characteristics of depression

The idea that a particular constellation of symptoms of depression specific to older people exists, and that this represents a clinical condition with a prognosis and treatment response different to the depression of younger people has been debated. Such a condition has not yet been elucidated.

It has been suggested that more hypochondriacal symptoms may be found among depressed older people. Pitt (1986) stated that older patients belong to a generation schooled not to complain of depression and that the common symptom of hypochondriasis readily misled and perplexed any unwary diagnostician. In support of this Kramer-Ginsberg et al.(1989), studied 70 consecutive patients aged 60 years or more, admitted to an acute psychogeriatric unit diagnosed as suffering from DSM-III major depression. 60% of these patients were found to have hypochondriacal symptoms as measured on the Hamilton Depression Rating Scale (HDRS) (Hamilton 1967) and 12% of these were of delusional intensity. Murphy (1986) attested that depression among older people was not clearly distinguishable from that found in earlier life. Results in support of this contention come from outpatient and primary care studies. Musetti et al.(1989) examined 400 consecutive people, from a clinic population, with primary major depression. They excluded older people with concomittant severe

physical or neurological disease. When they compared younger with older patients, they failed to confirm the clinical stereotypes of greater somatisation, hypochondriasis, agitation, psychotic tendencies and chronicity in old age i.e. the acute clinical picture was fairly uniform across the age span. In a study by Oxman et al.(1990) patients of four general internists and four general practitioners were interviewed by two psychiatrists, and of these 19/92 patients aged over 60 years and 22/101 younger patients were found to meet RDC criteria for minor depression. The older and younger medical outpatients were found to have similar symptomatology. It appears that the population chosen is a critical factor in determining the level of hypochondriasis among older depressed people and that when community or primary care populations are examined there are no marked differences between young and old.

The fact that the prevalence of dementia increases with age, and that cognitive impairment may be a feature of depression can lead to diagnostic confusion; depression among older people can "masquerade" as dementia. Kiloh (1961) proposed a descriptive category of "pseudo-dementia" for cases of depression among older people with features that mimic dementia but show remission of cognitive deficit after recovery from any underlying depressive disorder. Depressed older people do report more memory problems

than non-depressed, but they differ from people with dementia in that they report more problems with concentration, indecision and mental slowing (O'Connor et al.1990). Memory complaints and memory performance correlate poorly among depressed older people, and thinking difficulties are common features of depression at all ages (Blazer 1989). Nevertheless it is possible to suffer from dementia and depression. Roth (1983) reported that 25% of patients with multi-infarct dementia showed evidence of depression, and Burns et al (1990) that 24% of patients with Alzheimer's disease were rated as depressed by a trained observer.

There has been dispute about the significance of less severe depression among older people and its complex relationship with age-related infirmities and life-events. Blazer (1989) stated that the majority of depressed older adults do not fit into DSM-IIIR criteria but rather have depressive symptoms associated with physical illness, adjustment to life stress, or if biologically derived, mild depressive episodes. Thus Blazer and Williams (1980) defined a group of older people with depressive symptoms as "senile dysphorics" - having a lack of psychiatric history, the presence of dissatisfaction rather than depressed mood, and a poor response to antidepressant medication. Akiskal (1983) discussed chronic depression, for all age groups, as identified under

the DSM-IIIR definition of dysthymia and proposed three subtypes: i) primary depressions with residual chronicity, more commonly associated with a family history of depression and having suffered multiple losses; ii) chronic secondary dysphorias, perhaps superimposed on longstanding non-affective psychiatric disorder, incapacitating disease or both, and normally with a negative family history of affective disorder, and an intermittent mood state parallelling any underlying illness; iii) characterologic depressions, beginning in early life with insidious onset and protracted course and with superimposed major episodes, some sufferers being exquisitely sensitive to romantic disappointment and other types of separation events in adult life. It is probable that those older individuals with "senile dysphoria" would fit into the "chronic secondary dysphoria" subtype proposed by Akiskal. It is worrying though that with the term "senile dysphoria" age itself may be seen as sufficient reason to become "secondarily depressed" and therefore the notion that depression in old age is a "normal" reaction and therefore not amenable to treatment could be reinforced. Also, the immediate assumption of a causal association between physical illness and depression may, if it is made too powerfully, inhibit the investigation and management of other important factors.

3.2 Etiological considerations

3.2.1 Role of inheritance: genetic studies

A study by Baron et al.(1981) examined age of onset data on 1,468 first degree relatives of 252 probands with unipolar and bipolar affective disorders. Early onset (< 40 years) probands had more early onset relatives and a greater risk for affective disorder among their relatives than late onset probands. This suggested a familial factor in early-onset illness tending to breed true, but of course an entire follow-up of relatives would be needed to complete the picture with respect to late-onset depression. Maier et al.(1991) also investigated the hypothesis that late onset depression (>60 years) was associated with less risk of depression in first degree relatives. They compared geriatric inpatients with unipolar major depression (n=92) with age-matched controls (n=33). They discovered that relatives of probands with late onset depression were at less risk of depression than those with early onset depression. However late onset depression was no more common in families of probands with late onset depression than those with early onset depression, as far as their methodology could determine. The question as to whether these differences are due to the incomplete penetrance of genes in later onset depression or the fact that a genetic form of disorder manifests itself

earlier in life has yet to be answered.

Musetti et al.(1989) determined that older patients were more likely to suffer from single episodes of depression which were more often precipitated, whilst younger patients had illnesses as part of recurrent disorders, with higher rates of familial affective illness. Brodaty et al.(1991) compared older (>60 years) to younger patients but used a highly selective population: consecutive referrals as inpatients and outpatients to a tertiary referral mood disorders unit. The older patients with unipolar major depression were less likely to have "personality inadequacies" or a family history of affective disorder. Both groups were similar in severity, endogeneity and degree of social impairment. In contrast, Baldwin (1990) examined 77 late onset (60 years or more) and 21 early onset hospital patients with major depression. He found no difference in severity between them and no significant differences in the degree of family history of depression.

Overall, evidence reported so far suggests that there is less of a genetic influence, as indicated by presence of family history, on depression that has a later onset.

3.2.2 Brain biochemistry and structure

New developments in imaging and neurobiochemical techniques have stimulated recent research into

depression among older people. The populations chosen for these investigations have tended to be those that were easiest to study, namely, hospital inpatients and outpatients, which are unrepresentative of old age depression (or even DSMIIIR major depression). However, it does seem that there are specific subgroups of older people with depression who differ in their brain structure, hypothalamic-pituitary-adrenal function, and neurotransmitter status. These results indicate the possibility of a "biological propensity" towards onset and/or poor prognosis of depression in some older people.

Jacoby and Levy (1980) compared computerised axial tomography (CAT) brain scans of 41 depressed older patients with 50 healthy community controls. In both groups ventricular size increased with age, but only in controls was there age correlation with sulcal widening. 12% of the depressed patients had evidence of cerebrovascular disease. They also identified a sub-group of patients with enlarged venticles whose depression began later in life and who were older and showed more endogenous features. In a further refinement of their measures, Jacoby et al.(1983) examined an index of brain tissue density from the CT scans of 37 elderly depressed patients calculated using Hounsfield Units (HU) in 12 predefined areas of brain. They compared their study group with 36 healthy controls and 23 subjects with dementia. The controls

showed the highest HU values and dementia sufferers the lowest. There was no correlation between HU values and age. In the depressed patients, ventricular dilatation was associated with lower HU levels, contrary to controls. These results suggested a specific pathological process underlying depression in a subgroup of depressed older people, as the changes did not appear to be related to future dementia on follow-up. Two year mortality was increased among the depressed people with ventricular enlargement as shown on CT scan (Jacoby and Bird 1981). Zubenko et al.(1990) reported that depressed older inpatients showed more magnetic resonance imaging (MRI) abnormalities of their brain structure than a non-depressed comparison group. Even after controlling for age and gender, depressed patients had more cortical infarction and leucoencephalopathy than controls. Krishnan et al.(1993) have highlighted the shrinkage found by MRI in the caudate nuclei, putaminal complexes and other subcortical structures of 25 older depressed people, particularly those with late-onset (aged 60 years or more at onset) when compared with 20 control subjects. Though in this study, the late-onset depressed group was significantly older than the controls and the early-onset depressed group- a factor which may be important when examining for subcortical degeneration. In conclusion the evidence is that depression in late life is associated with an

increased probability of visible pathology in the brain, but the pathophysiological mechanism has yet to be elucidated.

Georgotas et al.(1986) studied 18 moderately demented, 66 depressed and 25 age-sex matched control subjects. They identified Dexamethasone Suppression Test (DST) non-suppressors in 4% of normals, 17% of people with moderate dementia and 38% of the major depressed. Older subjects in all categories had higher postdexamethasone plasma cortisol levels. Leake et al.(1990) compared age-matched controls with depressed older patients and measured their levels of N-terminal pro-opiomelanocortin (N-POMC) as a marker of pituitary function during DST. They found that depressed patients had significantly elevated cortisol levels before and after dexamethasone administration, and that basal ACTH and N-POMC were normal but were both elevated compared with controls after dexamethasone. In contrast, a group of patients with Alzheimer Type Dementia (ATD) were found to have relatively elevated cortisol only after dexamethasone was given, and ACTH was elevated at this time but not N-POMC. The results imply that the pattern of secretion of POMC-derived peptides, underlying increased cortisol secretion, is different in depression from that in ATD.

Neurobiochemistry research indicates that increasing age may lead to brain changes predisposing to depression among older people - this is when

depression is considered within the context of the current amine paradigm. Robinson et al. (1971) investigated 113 healthy subjects aged from 21 to 84 years, examining their monoamine oxidase (MAO) activity in blood plasma and platelets. Activity was found to correlate highly with increased age when measured in plasma and platelets. Women had higher activity than men only in the platelet measures. Also Nemeroff et al.(1988) discovered a marked reduction in the platelet-tritiated imipramine binding sites in older depressed patients.

3.2.3 Associated diseases

A strong association between depression and physical ill-health among older people has been consistently reported. Certain illnesses may have a direct etiological role in depression either through physiological or cognitive means whilst others may act as maintaining factors. Gurland et al. (1983) using the CARE measure, reported a correlation of 0.4 between depression caseness and physical ill-health among New York and London older communities. Craig and Van Natta (1983) demonstrated a significant association between symptoms of depression and self-reported disability as measured in terms of "restricted activity days". Kennedy et al.(1989) used the Center for Epidemiologic Studies Depression Scale (CES-D), with a cut point of 16, to study 2,137 older

community residents. They obtained a 72% response rate and found caseness in 11% of men and 20% of women. A hierarchy of characteristics was associated with the substantial levels of depressive symptoms: illness, disability, isolation, bereavement and poverty. The prevalence and relative risk of depressive symptoms was related to the number of medical conditions, the number of problems in activities of daily living (ADL), disability, perceived health and the number of visits to a physician. The fact that people felt that they had little or no control over their health also appeared to be important. Palinkas et al.(1990a) studied a geographically defined population in S.California of 1617 people aged 65 years or over (average age 75.2 years SD 5.9) with a response rate of 79% for men and 74% for women. They utilised 18 out of 21 items from the Beck Depression Inventory (BDI) which they readjusted and used a cut point of 13. 5.2% of those interviewed reached caseness with twice as many women as men. Self-perception of current health status, number of reported chronic diseases and medications were positively associated with depressive symptoms.

3.2.4 Bereavement

Old age is a time of bereavement and like other losses this may be expected to precipitate depressive states- although it has been argued that this type of

life event is expected at this time of the life cycle and may therefore cause less psychological damage than earlier in life. Certainly the vast majority of bereaved people do pass through the natural process of grief without recourse to doctors. Breckenridge et al.(1986) examined 196 recently bereaved older people and 145 comparison control participants 2 months after losing their spouse. Using the Beck Depression Inventory and controlling for age, sex, and sociodemographic differences, the likelihood of self-deprecatory cognitions (self-reproach, guilt, sense of failure, sense of punishment) was found to be no greater among the recently bereaved than among the controls. The cardinal symptoms of grief were dysphoria, tearfulness, dissatisfaction, insomnia, appetite loss and weight loss. Bruce et al.(1990) used NIMH/ECA data and compared depressive episodes and dysphoria between newly bereaved (n=39) and married (n=1047) people aged 45 years and older. They found that bereavement greatly increased the risk of depression and dysphoria, but that the bereaved subjects with depression reported significantly fewer symptoms of guilt compared to the non-bereaved with depression. None of the bereaved and depressed had experienced an earlier depressive episode.

An indicator used to differentiate "biological" depression from other depressive states is that of sleep pattern change. A recent study has cast doubt

upon the nosology of depression and bereavement reactions described in various research and clinical diagnostic criteria. This is an important issue for research with older people where clinical depression can be discounted as a "normal reaction" to circumstance. Reynolds et al.(1992) studied 31 older volunteers with recent spousal bereavement who were stratified by the presence (n=15) or absence (n=16) of symptoms equivalent to RDC major depression. They had no personal history of psychiatric disorder. Those with "major depression" had lower sleep efficiency, more early morning wakening, shorter Rapid Eye Movement (REM) latency, and a greater percentage of REM. These depressed patients resembled older patients with recurrent unipolar major depression. The sleep patterns of those bereaved without evidence of RDC major depressive symptoms were similar to 15 healthy controls. The findings suggest that the current DSM-IIIR concept of uncomplicated bereavement is unconfirmed because many of the depressed, bereaved would have fallen into this category and yet they had identical sleep patterns to those found in major depressive episodes.

To determine the relationship between recent bereavement and suicide, Bunch (1972) studied 75 consecutive cases of suicide and compared them to 150 matched controls living in the same area. She found that having lost a spouse within the previous three

years was significantly more common among people who committed suicide than controls (upto 5 times), and that more widows than widowers killed themselves. 81% of the suicides compared with only 26% of controls had responded to bereavement with evidence of psychiatric disturbance.

It is probable that bereavement does play a greater etiological role in depression and suicide among older people than perhaps is generally appreciated, and this has major implications for its management.

3.2.5 Social factors

If genetic influences are less important in first onset depression among older people, then exogenous factors should merit close investigation. There have been several studies which have used measures developed by Brown and Harris (1978) but these have only examined hospital-based populations. Representative community studies tend to use briefer measures of social factors, and to compare these to the severity of depressive symptoms rather than presence of clinical case level depression. Nevertheless there is evidence that social factors can influence onset and course of depression among older people.

Murphy (1982), building upon Brown and Harris' (1978) assertion that working class women were five times more likely to develop depression in the year following a severe event or major difficulty, investigated the importance of social factors in the explanation of depression as the commonest mental illness in old-age. She compared 100 depressed people referred to local psychiatric services with a group of age and sex matched non-depressed control subjects from the general population. Only the index episode of depression had to be presenting for the first time in old-age i.e. some of the patients had experienced previous depressions in younger life. She used the Present State Examination (PSE) and Feighner criteria as measures of caseness, and the Life Events and Difficulties Schedule (LEDS) (Brown and Harris 1978) to examine social factors. She performed a reliability study for the LEDS among older people and found 81 percent agreement between subjects' and relatives' responses with 100 percent agreement about severe events - the events that are believed to be important etiologically for depression. Taking one year before interview or one year before onset of depression as the time periods of interest, 48 percent of patients compared with 23 percent of normal subjects had a severe event in the year before onset; 42 percent of patients and 19 percent of normals had a major non-health difficulty; 39 percent of patients and 26

percent of normals had major health difficulties. In order to refute the contention that late- onset depression was particularly linked to age-related physical illness she demonstrated that patients with no history of previous depression in their lives (63 percent) were no more likely to have poor physical health than those with a history of previous depression. Of the 200 community interviews she performed, 46 percent of respondents were rated "a" (highest level) on the intimacy rating and 18 percent "d" (no confidante). Only one third of those without a confidante reported that they had an intimate relationship in earlier life which they had now lost. Among patients 39 percent were "d" on the intimacy rating and again only a third reported having had a close confidante which they had recently lost. The suggestion is that although intimacy appears to be an important factor, "personality" difficulties may also play a part in old-age depression.

Emmerson et al.(1989) studied 101 patients with DSM III major depression and contrasted them with 85 non-depressed community residents who scored 4 or less on the General Health Questionnaire. They found that significantly more of the depressed patients (24% v. 7%) reported at least one severe life event in the three months prior to onset of illness. Also the lack of a confiding relationship was associated with depression but that this was the case only in men, not

in women. This finding may be a reflection of the population they chose to study, with isolated, depressed men being selectively referred to hospital. That major life difficulties were rare in their sample was attributed to the fact that the authors were studying a relatively affluent population. The association with severe life events was the same for endogenous and neurotic depressions as measured on the Newcastle scale (Carney et al.1965).

Goldberg et al.(1985) studied 1,144 married women between 65-75 years of age and discovered that those of lower social class were more likely to have a high level of depressive symptoms as measured by the CES-D. Size and homogeneity (sex, age and religion) of the social network were related to symptoms; small, heterogeneous networks were associated with more depression. If the husband was not named as a confidant then the likelihood of having high levels of depression was tripled. The highest depression scores occurred in those women with no confidant.

Palinkas et al.(1990b) studied 1615 men and women aged 65 years or over with the Beck Depression Inventory (BDI) and obtained measures of i) social activity (the number of social clubs and voluntary associations attended), ii) social network index (Berkman and Syme 1979) iii) frequency of face to face contact with close family and friends iv) "social distance" of a person identified as being the primary

source of support v) physical status from self-report. They found that women were less likely than men to point to their spouse as their primary source of support. The scores achieved on the Beck Depression Inventory were inversely related to: i) a measure of social network size, proximity, and contact (social network index) and, ii) participation in voluntary associations and religious institutions. Those who had no primary source of support or who depended upon a relative had significantly higher depressive symptoms. Social network index and social distance to primary source of support were independently associated with depression after controlling for age, sex and number of chronic physical conditions. The number of close friends was inversely associated with depression score whereas the number of close relatives was not. The importance of friends was felt to indicate that the intimacy of a close friendship was psychologically valuable.

The ability to gain support depends upon personality, the nature of any social ties and the context of the stressful experiences requiring support. The structure of support as it relates to the risk of depression is determined biologically and culturally; depression is associated with physical disability and this, and the set of rules which define who should be relied upon, may both shape the structure of any support. Spouse, children, siblings,

other relatives, friends and finally formal bureaucratic services are usually listed in order of reliance. In the Palinkas study it appears that intimacy is given greater value in terms of support than proximity of kin ties.

It is important to realise that, when examining social factors, depressive symptoms may themselves affect social support: i) by discouraging support, ii) by rendering the individual unable to perform expected "social behaviours" to maintain a network, iii) by influencing an individual's perception as to the availability and adequacy of support. It is therefore important to perform longitudinal studies to examine the outcome effect of social variables on the onset of depression and its subsequent course.

3.3 Conclusions

1. Major depression in late life does not appear to be phenomenologically very different from depression earlier in life.
2. Increasing cognitive impairment and physical illness among older people can lead to confusion in the diagnosis of depression.
3. There is evidence of a diminished genetic influence but possibly greater "organic" factors in late-onset depression.

4. Depression among older people is strongly associated with physical illness.
5. Bereavement may be more important in onset of depression than has been previously realised.
6. Social factors have been shown to be associated with depression.

Chapter 4. The prognosis of depression and treatment methods

4.1 Introduction

Studies into the prognosis of depression among older people can be separated into those based upon hospital populations, those based upon out-patient populations and those examining depression within a community setting. Initial studies appeared to show a poor overall prognosis among the more severe cases of depression but further research has indicated that reality may not be quite so gloomy.

4.2 Hospital-based studies

Murphy (1983) performed a one year prospective study of 124 older patients referred to old-age psychiatric services for the first time. She used Feighner criteria for caseness and found that only one third of her group had a good outcome (those with an absence of symptoms or minor symptoms which would not have fulfilled Feighner research criteria). Poor outcome was associated with: i) the severity of the initial illness and the presence of psychotic symptoms, ii) duration of illness, in that only 11% of the good outcome group had been ill for 12 months or more prior to interview compared with 27% of the bad outcome outcome group, and, iii) physical health problems and severe life-events in the follow-up year. The presence of an intimate confidante did not protect against relapse in the face of continuing life stress.

Baldwin and Jolley (1986) performed a retrospective analysis of between 42-104 months on 100 older patients admitted to hospital with severe, non-neurotic depressive states- none with previous hypomania. They found that 60% remained well or had a further episode(s) followed by full recovery whilst 7% suffered continuous depressive symptoms. This more optimistic result contrasts with that of Murphy (1983) and may in part be due to methodological and treatment differences (more ECT used by these authors). Male sex and poor physical health at presentation or developing subsequently were the only predictors of poor outcome.

Cole (1983) examined age, age of onset and the course of primary depression following hospital admission among 38 people aged 65 years or older with Feighner criteria primary depressive illness. He followed them up for between 7 and 31 months and found that in the absence of persistant organic signs and severe physical illness, age of onset (before or after 60 years) but not actual age was significantly related to course of illness; later onset depressives were more likely to remain completely well during follow-up and less likely to have frequent or disabling relapses (at follow up 25% of those with an early onset remained well, 31% tolerably well and 44% were ill compared to 55%, 20%,10% and 25% of late onset (chi-square $p<0.02$)). This difference in outcome could not be explained by the number of bipolar cases, frequency

of any precipitating events, the number of previous episodes nor the length of follow up. 55% of his cohort responded to a tricyclic antidepressant alone, hospitalisation ranged from 2-32 weeks with 50% discharged within one month, and only 11% failed to respond to any treatment. Total figures at follow-up: 41% remained completely well, 25% tolerably well, 22% ill and 4 had died. The severity of illness and continuing physical ill-health were the two most important factors determining outcome.

Post (1983) surveyed available outcome studies and concluded that duration of illness was the major indicator of poor outcome. Depression for more than two years indicated that a good response to treatment would be highly unlikely.

Burvill et al.(1991) examined 12 month outcome of 103 hospital patients aged 60 years or over with DSM-III major depression treated in Western Australia. They found 47% well at one year, 18% relapsed and recovered, 13% depressive invalids (definite and moderately disabling symptoms of depression which were not sufficient to reach the criteria for major depression), 11% continuously ill and 11% died. Chronic physical illness, severity of depression and severe life events during follow-up were not associated with outcome. The authors suggested that this may be due to the fact that their sample size was small when analysing for dichotomous outcome variables

and recommended in such circumstances that a sample of 200 would be needed to have an 80% chance of detecting a small relationship between a predictor and outcome.

4.3 Outpatient studies

Cole (1985) followed up 55 people aged 65 years or more with depression in an outpatient setting for between 24-63 months. He excluded anyone who had been hospitalised in a psychiatric ward during the previous five years and anyone with established dementia. 34 had Feighner primary depression, 21 depressive symptoms but not meeting criteria for primary depression. 41 cases responded well to treatment, 35 being compliant with treatment throughout the study period. 38 (69%) remained well more than 60% of the follow up period and 17 (31%) cases remained chronically ill. Only 10 cases remained completely well. Treatment compliance, absence of physical disability, long-term follow up and maintenance antidepressant therapy were associated with favourable outcome. The course of patients with primary depressive illness did not differ significantly from that of patients with depressive symptoms only. There were trends for those with depressive symptoms to be less compliant, have more physical disability, and respond less well to treatment. Sex, presence of precipitating events, marital status, living circumstances, number of previous episodes and length

of follow-up were not associated with course. Depression was not a transient nor self-limiting condition in this group.

Also within the outpatient setting, Kukull et al. (1986) used the Zung Self-Rating Depression Scale (ZSRDS) and resurveyed 202/230 (88%) of a cohort of older general medical clinic outpatients at 33 months. They found point prevalences of 20% depression (scored > 60) at both times with half of these depressed at both measures- a marked level of chronicity. The number of new physical diagnoses was the best predictor of depression at retest with positive associations between chronicity of depression and the number of coexisting diagnoses.

4.4 Community studies

Copeland et al.(1992) repeated GMS-AGECAT measures on their Liverpool cohort 3 years after their initial survey and found that 30.8% remained depressive cases, and 23.4% of all their depressive cases had died (significantly higher than the non-depressed subjects). They further stated that 72.0% of those with depressive "psychosis" and 62.3% of those with depressive "neurosis" were either dead or had some kind of psychiatric illness at three-year follow-up.

Kennedy et al.(1990) studied characteristics that may predict persistence or remission of depressive

symptoms among their community population of 1855 people aged over 65yrs. They used the CES-D as their depression measure and reinterviewed 1577 people at 24 months. The characteristics of 97 people whose depressive symptoms persisted over the two years were compared with 114 people whose symptoms remitted. Increasing disability and declining health preceded the emergence of depressive symptoms and accounted for 70% of the variance in their discriminant analyses. Improved health was reported by 22.8% of the remission group but only 4.1% of those that were persitently symptomatic. Advanced age and worsening health were associated with persistent symptoms, and improved health with remission.

Oxman et al.(1992) used a multiple regression analysis to examine the effect of characteristics of social networks and support on depressive symptoms. 1,962 community residents aged 65 years and older were first seen 1982 and followed up in 1985. Baseline depression, as measured on the CES-D, functional disability in 1982 and change in disability by 1985 contributed mainly to the variance and required adjustment along with sociodemographic variables. Important social variables were: loss of a spouse, adequacy of emotional support and its change between 1982-1985, "tangible" support adequacy and its change, loss of a confidant, number of children making weekly visits and change, and the absence of a confidant in

1982. This study highlights the need to consider specific dimensions of social support and their relationship to prognosis.

4.5 Treatment Methods

4.5.1 Pharmacotherapy and ECT

It is clear that appropriate drug treatment can positively influence the outcome in the shorter and longer term prognosis of depression among older people. Cohn et al.(1990) examined 241 older depressed patients in an 8-week double-blind phase of a parallel group multicenter study. 80 were given amitriptyline (50-150 mg) and 161 sertraline (50-200 mg). There was no difference in efficacy as measured by change in total Hamilton Depression Scale score (Hamilton 1967). 69.4% of those patients on sertraline and 62.5% of those on amitriptyline responded on the basis of the Hamilton criteria. A significant number (28% on sertraline and 35% on amitriptyline) of patients withdrew because of treatment-related side effects.

Finch and Katona (1989) reported the use of lithium augmentation in 9 out of 22 depressed older patients who had been referred to a catchment area old-age psychiatry service and who had failed to respond to tricyclic antidepressants. Augmentation was seen as clinically successful in 6/9 patients without untoward side effects.

Drugs may also be used to maintain improvement in mental state and therefore influence overall prognosis. Georgotas et al.(1989) in a placebo-controlled comparison of nortriptyline and phenelzine in maintenance therapy of older depressed patients, studied 51 outpatients who had responded to antidepressants and completed continuation therapy and followed them up for 1 year. 23 patients were switched to placebo, 13 to nortriptyline and 15 to phenelzine. Phenelzine was most effective in maintaining mental state, with only 13.3% of patients relapsing. Nortriptyline resulted in 53.8% and placebo in 65.2% recurrences. Patients with a higher initial level of depression and with earlier age of onset of their first depressive episode were more likely to have these recurrences.

The Old Age Depression Interest Group (1993) performed a double-blind placebo-controlled study of continuation/ prophylaxis therapy with dothiepin among 69 older patients with RDC major depression who had recovered sufficiently to enter their two-year trial. Survival analysis revealed that dothiepin reduced relative risk of relapse by 2.5 times, while prolonged index depressive illness increased it by 3. Thus full-dose maintenance antidepressant therapy is beneficial for two years and probably longer, while early recognition of depression could improve outcome in terms of relapse.

Abou-Saleh and Coppen (1983) reported their experience of lithium as an effective prophylactic agent in older depressed patients. They gave figures on the successful treatment of 47 people who had started lithium prophylaxis late in life. They recommended lower lithium levels (>0.45 mmol per litre) in order to reduce subjective side effects, reduce toxicity to the thyroid gland and yet maintain therapeutic response.

Benbow (1989) in a review article, discussed how electroconvulsive therapy (ECT) was an important treatment for depressive states in late life. The additional risk involved in the use of ECT in physically ill people was not great when compared to that of continued depression or the side-effects of alternative treatments. The side effects of ECT were not felt to be a major problem. She outlined the features of depression which should have a good outcome when treated with ECT: symptoms of guilt, increased severity, agitation (unlike the younger depressed), loss of interest, and a shorter duration of illness.

4.5.2 Psychotherapy

Church (1983) stated that there was no reason to assume that findings in the behaviour and cognitive

therapy literature were not applicable to older people.

Thompson et al. (1987) randomly assigned ninety-one patients aged over 60 years with major depression (RDC criteria) to 16-20 sessions of either behavioural, cognitive or brief psychodynamic therapies. There were 20 people assigned to a six-week treatment delayed control group. None of the patients was taking antidepressant medication. The therapist interveners were videotaped and assessed. Outcome measures used were change in Beck Depression Inventory (BDI) and Hamilton rating Scale for Depression (HRSD). These demonstrated a significant decline in score among the patients receiving therapy in comparison to controls at six weeks. 52% of their treatment sample attained remission (according to RDC major depression caseness) and a further 18% demonstrated a significant improvement. There was very little evidence of spontaneous remission among the control group. At two year follow-up it was found that an impressive 70% remained not depressed, and these good responders were those who had shown benefit during the treatment period (Gallagher-Thompson et al.1990). Although there was no difference in effect between the therapies over a six week period, an earlier, smaller study (Gallagher and Thompson 1982) using similar outcome measures indicated that cognitive-behavioural therapy lead to a more effectively maintained improvement at

one year treatment-free follow-up. Although the patients met criteria for major depression, the response rate to treatment certainly appears to indicate that they are a substantially different population from those in the hospital studies quoted above.

As far as group therapy is concerned Steuer et al. (1984) treated twenty people aged 55 years or more (many of them volunteers) who had DSM-III major depression. They were randomly assigned to one of four groups, two run along psychodynamic lines and two cognitive-behavioural. The BDI, HRSD and Zung Self-Rating Depression Scale (ZSRDS) were used as outcome measures and all three showed significant declines in score over the nine month period in both therapy types. There was though a significant drop out rate from the groups. For ethical reasons there was no control group with which to compare and therefore it is impossible to state with any certainty the possible benefit that group therapy may have above and beyond natural remission over this substantial period of time.

Steuer (1982) listed the modifications which psychotherapists currently believed were necessary for the treatment of older people: i) the therapist needs to take an active role in directing any therapy, at the same time allowing the patient to seek solutions to their own problems, ii) current problems should be

the focus of treatment, iii) there should be education of patients about normal ageing and intervention by helping to plan daily activities and acting as a social advocate, iv) the goals of treatment may be more limited than in younger patients e.g. symptom reduction, acceptance of greater dependency, learning new coping skills, and increasing self-esteem. All may be useful to improve the patient's quality of life. Therefore assertion training, problem-orientated treatment, and cognitive-behavioural therapies may all have a place in management. Crisis intervention in the face of physical illness and multiple losses has been strongly advocated among older people as has the supportive value of therapeutic groups.

Ong et al. (1987) investigated the role of a support group (n = 20) for depressed older people and found that a simple weekly support group resulted in significant reductions of relapse and readmissions to hospital over one year. The effect of reestablishing social interaction has been demonstrated by Schonfield et al. (1985) who examined two groups (n=42, n=47) aged 55-91 years. They followed one group through a mental health treatment programme which emphasised the strengthening of social networks, and the other through a nutrition programme. Initially the mental health programme group scored significantly higher on the Beck Depression Inventory and subjects had fewer friends as measured on the Social Support Network

Inventory. "Graduates" of the mental health programme improved significantly in their Beck scores with a concomitant increase in friends. Their conclusion was that continued socialization in later years may serve to allay depression.

4.6 Conclusions.

1. The results of outcome studies vary according to methodology and populations studied.
2. Within the community, untreated depression appears to be a chronic condition with an associated increased mortality.
3. Physical treatment methods are effective for depressions seen in the hospital setting, and prognosis may not be as poor as original studies indicated. There is little research on treatment outside the hospital setting.
4. General factors adversely influencing the prognosis of hospital depression include: presence of organic cerebral pathology, initial and supervening serious physical illness and ensuing major adverse life events.
5. Characteristics of the illness suggestive of a poor prognosis are: younger age of onset, slow or incomplete recovery, more severe depression, and longer duration of onset.

6. There is some evidence that psychosocial interventions may be effective but it is unclear as to which patients may best benefit from which treatment.

CHAPTER 5 Depression among older people and community care

5.1 Primary Care

The sheer size of the problem of depression among older people in the community dictates that the primary care service should, in the first instance, identify and manage this depression. There is, however, little published research in this specific area.

5.1.1 Primary Care use

Depression among older people is associated with an increased use of primary care services. Waxman et al. (1983) demonstrated, using the Zung depression scale, that older patients with the greatest measure of depressive symptoms averaged four times as many visits to their general practitioner each year than the less depressed, but the more depressed patients were no more likely to be referred to specialist mental health facilities. This study also discovered a general relationship between affective state and feelings of physical ill-health in the community and in particular a correlation between complaints of cardiovascular symptoms and depression. Widner and Cadoret (1978), in a study of adults of all ages, compared depressed primary care attenders retrospectively with age, sex and season of attendance matched controls. They found that depressed patients increased their attendance rate to the general practitioner's surgery in the seven months prior to a

diagnosis of depression. Depressed patients presented "functional" physical symptoms such as pain, fatigue and dizziness for which no organic etiology was evident. There was also an increase in psychological complaints relating to mood change such as tension, inability to relax and worrying about inconsequential things.

An analysis of prescribing may be used as an indicator of general practitioner activity, and three studies indicate further the large workload that psychological complaints among older people generate in the primary care setting. Williams (1980) surveyed 6000 community residents aged over 65 years in London to determine their psychotropic drug use. Fourteen per cent of men and 22% of women were taking either antidepressants, and/or tranquillisers, and/or hypnotics. More recently the Drugs and Therapeutics Bulletin (1990) analysed 805 General Practice patients aged over 65 years and found that 15% were taking hypnotics, sedatives or anxiolytics of which 90% had been started outside hospital - remarkably similar results a decade apart. That this activity becomes longstanding has been demonstrated by a study from Liverpool (Sullivan et al. 1988) where over half the patients prescribed benzodiazepines three years previously were found still to be in receipt of them.

Livingston et al. (1990b) examined the use of health and social services by older people in an Inner

London community and discovered that those described as cases of "probable pervasive depression", in contrast to those that were not, were more likely to have seen their general practitioner in the previous month (48% versus 37%). They were also more likely to have visited a hospital (39% versus 24%), require a district nurse (18% versus 9%), a home help (30% versus 19%), and be more frequent users of local day centre facilities (21% versus 11%). Psychiatric reasons for visiting a general practitioner were stated in only 3% of attendances. An analysis of data from the sample attending nine general practitioners (72% of the sample population) showed no relationship between the proportion of depressed patients and the proportion receiving antidepressants among these doctors. Only 4.7% of the population were prescribed antidepressants, yet 13% were prescribed benzodiazepines; this being significantly associated with the presence of depression.

It would seem logical to assume that if depression in older people does increase the work load to such an extent, then extra efforts and resources required to manage depression effectively could have an ultimate "pay-off".

5.1.2 Primary care recognition and management

An early and often quoted study (Williamson et al, 1964) indicated that general practitioners were

unaware of three quarters of the depressions among their older patients. As reported above, a similar observation was made more recently in an Australian setting in which 11 participating general practitioners failed to identify 12 out of 15 patients, meeting criteria for depression using a standard interview (Bowers et al. 1990). Macdonald (1986) in Britain, reported over-identification of depression and thus a lack of diagnostic precision leading to no active management in primary care. Whether the error is inaccurate over-identification or under-identification, it is necessary to explore possible reasons as to why these consultations do not produce a diagnosis of depression and what strategies have been introduced to improve matters.

A diagnostic consultation may be adversely affected by characteristics of the doctor and of the patient. Negative attitudes towards older people have been defined as "ageism" of which Butler (1969) wrote about among health care professionals - **"an attitude implying that old people are in a state of decline".** Complaints of ill-health, therefore, do not reflect features of treatable conditions. Added to this health professionals may have mixed feelings about treating older patients - based upon fears of their own old age or ambivalent feelings towards their parents. There could also be anxiety over the side-effects of treatment, particularly in the case of antidepressant

medication. Recognition of depression may lead to a treatment dilemma for some professionals, which can be avoided by either simply raising the threshold for diagnosis or deeming the individual untreatable.

The other partner to the consultation is the older patient. Such a patient may well belong to a generation in which mental illness carries a stigma, being associated with treatment in asylums. Confession to depression or anxiety would be guarded, even if the patient were aware of such feelings. The latter may not be the case, for depression in older people may be experienced as subjective malaise, or excessive self-concern over health or actual somatic symptoms. These complaints may take up the consultation. Among all adult patients somatization appears to be the main patient factor hindering the recognition of depression by general practitioners (Bridges and Goldberg 1985).

Simply to focus on the general practitioners' ability to recognise depression in their older patients ignores those who do not attend, and also ignores the patients' perspective. Do patients recognise this condition and do they merit it worthy enough or suitable to declare to their general practitioner? Little research has been done on whether and why older patients declare a depressed mood to their doctor. In a study, not specifically of older people, which examined the influence of patient attitudes on the recognition of psychosocial problems

in a primary care setting, it was discovered that out of 883 consecutive attenders 63% of women and 49% of men indicated a mood disorder as measured on the Brief Symptom Inventory. Yet, only half of these actually discussed their mood disorders with their family physician. This was despite the fact that 87% of women and 78% of men felt that it was appropriate to do so (Good et al. 1987). It was concluded that improved professional training and the empowering of patients to press their treatment requests were important issues in the successful management of depression.

Education of primary care practitioners in the last years has contained much more teaching on mental illness, both in the undergraduate and postgraduate curricula. Screening and improved interview techniques have been demonstrated to benefit the prognosis of depression in younger people (Johnstone and Goldberg 1976, Gask 1992). There are screening questionnaires and computerised diagnostic assessments for use with older people in primary care settings examples of which are the SELF CARE (Bird et al, 1987), the Geriatric Depression Scale (GDS) (Yesavage et al. 1983), and the GMS-AGECAT programme (now being modified to act as a brief screen both for dementia and depression).

That screening is not likely to be the entire answer has been indicated in a study examining the effect of increased recognition on levels of

management. German et al. (1987) interviewed 1242 people in a primary care setting using the General Health Questionnaire (GHQ) (Goldberg et al. 1978) and divided them into two age groups- with the division at 65 years. They then "fed-back" the GHQ scores to the general practitioners for a random half of the patients in each group. Feed-back led to an increase in identification of depression, especially in the older group, but actual management only increased from 32% to 42%, and only 1% of the depressed aged over 65 saw a mental health specialist. Also, those aged over 65 years were treated less with both medication and counselling- an indicator of the present bias against treating older patients.

5.1.3 Primary care outcome

There have been few studies examining the outcome of depression among older people within the community setting but even fewer specifically in the primary care setting. In a General Practice population, Mann et al. (1981) followed-up 100 patients aged between 18 and 85 with neurosis after one year and found a good outcome in 49%. Lesser severity of illness and good quality of social life at follow-up were the only factors which significantly predicted this good outcome. It was noted that there was a trend for persistent morbidity to occur among the older of the cohort, who had significant physical illness.

A recent study of younger adults (Hollyman et al. 1988) indicated that more primary care cases of depression may respond to correct pharmacotherapy than was previously expected. Even levels of depression previously considered "mild" from a secondary care perspective may indeed benefit from prescription. There is also a small body of knowledge based on younger patients demonstrating that psychological treatments can be delivered effectively by specialist practitioners in the primary care setting (Blackburn et al. 1981, Ginsberg, Marks and Waters 1984, Ross and Scott 1985). Also brief, focused interventions can be given with benefit from general practitioners with only a limited amount of training (Catalan et al. 1991). There is no reason to assume that such interventions could not be delivered successfully to older people in the primary care setting.

5.2 Community Psychiatric Nurses (CPNs)

A report from the Quinquennial National Psychiatric Nursing Survey (White 1990) supplied information from managers in 191 district health authorities. It indicated that there were an estimated 4990 community psychiatric nurses in the UK (a 54% increase since 1985) of which 1257/4990 (25%) worked with older people. CPNs had an average caseload of 35.6 patients with over half of these being patients

who had previously been admitted to psychiatric units, and 43% had been deemed to have chronic mental illness. Referrals from consultant psychiatrists made up 43% of the workload with one in thirteen CPNs exclusively receiving such referrals. 37% of nurses were still "based" within hospital psychiatric settings with only 22% in general practices.

With a conservative estimate of "probable pervasive depression" (that could benefit from intervention) at 10% and an estimated 7500000 older people, this would mean that each CPN would have to work with an estimated caseload of 600 patients if they were to "take on" management. This would be in addition to their management of people with dementia and delusional disorders of later life.

It thus becomes apparent that if intervention can be shown to benefit this group of older people then either there needs to be an enormous increase in the number of CPNs who work with older people or members of the primary care team need to become specifically involved in this area of work.

5.3 Conclusions

1. Depression is a common problem among older people which creates an added workload for the primary care team.
2. There are difficulties in the recognition and management of old age depression in primary care.

3. There is a lack of research into the clinical profile and outcome of depressed older people in primary care.
4. Because of the associations between depression and physical illness, bereavement, and social factors, it is necessary to take a multifaceted approach in management.
5. An exploration of the context of a depression is fundamentally important to management but may be difficult and time consuming.
6. One way forward may be to employ members of the primary care team other than the general practitioner to develop and utilise skills for this purpose.

Part II

Study investigations

CHAPTER 6. Aims of Investigation.

The literature review points to evidence that the majority of old people with depression live at home, those receiving out-patient help being a minority. Not enough is known however of the clinical profile of those at home, whether they may be classed as dysphoric or in fact suffer from disease that meets the diagnostic criteria for caseness.

Secondly, it is not known what sorts of interventions could be deemed appropriate for these depressed people, how possible these interventions are, and whether they are effective.

Aim 1.

To describe more fully the clinical profile of depression and its associations in older adults in the community, identified by a brief screening interview, the description will be by standard criteria (GMS-AGECAT and DSM-IIIR diagnoses), and take into account past psychiatric history, family history of psychiatric illness, presence of physical illness and physical handicap, current contact with psychiatric services, consumption of psychotropic medications and the status at screening two years earlier.

Three hypotheses are to be tested at this stage:
1) That the majority of older people within the community (> 50%) with clinical depression do not receive specific treatment for this condition.

2) That those who were recorded as depressed in 1988 ("old" depression) have a different clinical profile than those "newly" depressed in 1990: specifically are likely to be suffering from dysthymia and physical illness rather than major depression.

3) That those with "old" depression are less likely than "newly" depressed people to be receiving specific treatment for depression.

Aim 2.

To describe the types of interventions- suggested by a secondary care old-age psychiatric multidisciplinary team- required to improve mental state, and to examine the realisation of these interventions within the community over a three month period.

The hypotheses to be tested are:

1) That the majority of cases (>50%) would be deemed to require multifaceted interventions rather than specific treatment with antidepressant medication.

2) That the majority (>50%) of the recommended interventions could be put into effect over the three month period.

Aim 3.

To examine the effect of the recommended interventions on mental state using in comparison a control group without intervention who receive standard current primary care management.

The hypotheses to be tested are:

1) That the management plans suggested will improve the mental state of the depressed older people above and beyond that of the controls over the three month period.

2) That the "old" depressed older people will not respond as well to intervention over the three month period as more "newly" depressed older people.

CHAPTER 7. Methods.

7.1 The study population

This study utilizes a depressed cohort of older people (pensionable age) achieved by household enumeration of an electoral ward, Gospel Oak, which is an inner city area of some 3000 households in North London. The population is relatively deprived when compared to national averages with 50% more infant mortality, 50% more unemployment and twice the overcrowding (Livingston et al.1990a). The subjects were identified as living within the geographically defined area, their general practitioners were contacted to request their permission for interview, and then the subjects were offered a screening interview with the short-CARE (Gurland et al. 1984). This initial enumeration and screening was a complex, time-consuming process involving mailing and door-knocking prospective subjects. It was shown to be greatly superior in its accuracy to obtain a true sample population when compared to using local professional carers' lists. Two screening phases were carried out: one in 1988 and one in 1990. The second screen was purely on the survivors of the first enumeration and therefore was helped by the possession of addresses and telephone numbers. Again general practitioner assent was sought prior to interview. The subjects entered into this present study were identified in 1990, and consist of: i) subjects who were identified as depressed cases in both screens

and, ii) subjects identified as depressed cases only in 1990.

588/813 (72.3%) subjects were rescreened in 1990 and of these, 112 (19%) were classed as "probable pervasive depression" (DPDS) cases and thus became the population for the depression intervention study.

7.2 The screen

The shortened version of the Comprehensive Assessment and Referral Evaluation or short -CARE (Gurland 1984) is a semistrucured interview which requires training to administer. It has six indicator scales and two "diagnostic" scales. The scale used for this study was the depression diagnostic scale (DPDS) which identifies "probable pervasive depression"- a syndrome of depressed mood severe enough to merit further clinical intervention (Kay et al. 1985). The cut score used was six or more out of a possible eighteen points (see Appendix 1). The short-CARE DPDS scale gives a correct prediction for 84% of cases and 91% of non-cases of "probable pervasive depression", also the inter-rater reliability is 0.94 whether applied by psychiatrists or non-psychiatrists (Gurland et al. 1984).

7.3 The assessment and diagnosis

The general practitioners of all the DPDS cases were approached personally and the study explained to them. Their willingness to take part in the study was sought. With their permission the author endeavoured to interview all the DPDS cases. The interview included the following measures:

1) The Geriatric Mental State (GMSA 3rd Ed.)-AGECAT package along with its complementary History and Aetiology Schedule (HAS) (Copeland et al. 1986). The GMS is a semi-structured interview for use with older people which, in combination with the AGECAT computer programme, can generate levels of severity on eight symptom clusters and then produce an hierarchically evaluated probable diagnosis. With respect to depression there are eight levels of diagnosis: non-case (D0), sub-cases (D1,D2), "neurotic" cases (DN2,DN3) and "psychotic" cases (DP3, DP4 and DP5). With the addition of information from the HAS it will be possible to make computer calculated DSMIIIR and draft ICD-10 diagnoses. The concordance between GMS-AGECAT and psychiatrists' diagnoses has been shown to be 0.8 for depression in the community (Copeland et al.1986).

2) A full psychiatric, medical and personal history with recourse to hospital notes where they were available. This made it possible to clarify DSM-IIIR diagnoses and to determine any association with

past psychiatric history, physical illness and disability.

3) The subjects' medicine bottles were examined to clarify their current receipt of drugs.

7.4 Management plan generation and randomization:

A full clinical presentation of each case was made to an old-age psychiatric multidisciplinary team which included: a consultant old-age psychiatrist, a psychologist, community psychiatric nurses, a social worker and access to occupational therapy and physiotherapy advice. Each presentation was based upon the extensive clinical interview and was given in a formal ward-round style. The management plans generated were aimed at improving any depression and were written down immediately after presentation. The numbers attached to the cases were then taken to a person outside the study and randomised to either study nurse (SN) intervention or no-study nurse control groups ensuring that there were equal numbers of "new" (1990 only) and "old" (1988 and 1990) depressed cases in each group. Where possible the randomisation was kept secret from the author until after his follow-up assessment and from the independent research worker who repeated the short-CARE at six months.

7.5 Ethical considerations:

As mentioned above, the study was explained in person to each general practitioner involved in the care of these community residents. The general practitioners agreed to maintain clinical responsibility for patients during the study and to discuss the proposed interventions with the study nurse, who subsequently implemented them. For those subjects in the control group, the general practitioners were provided with their names and indications as to the severity of the depression.

Each patient was asked to consent to a diagnostic interview and to accept the possibility of follow-up visits by a study nurse who would be working with their general practitioner and who may have some suggestions to try to improve their current low spirits. The patient was told that the general practitioner would be informed that the patient was in low spirits and would be in overall charge of their treatment, whether or not the study nurse visited them.

Treatment plans generated by the multidisciplinary team for the control group were provided for the general practitioners at the end of the intervention period.

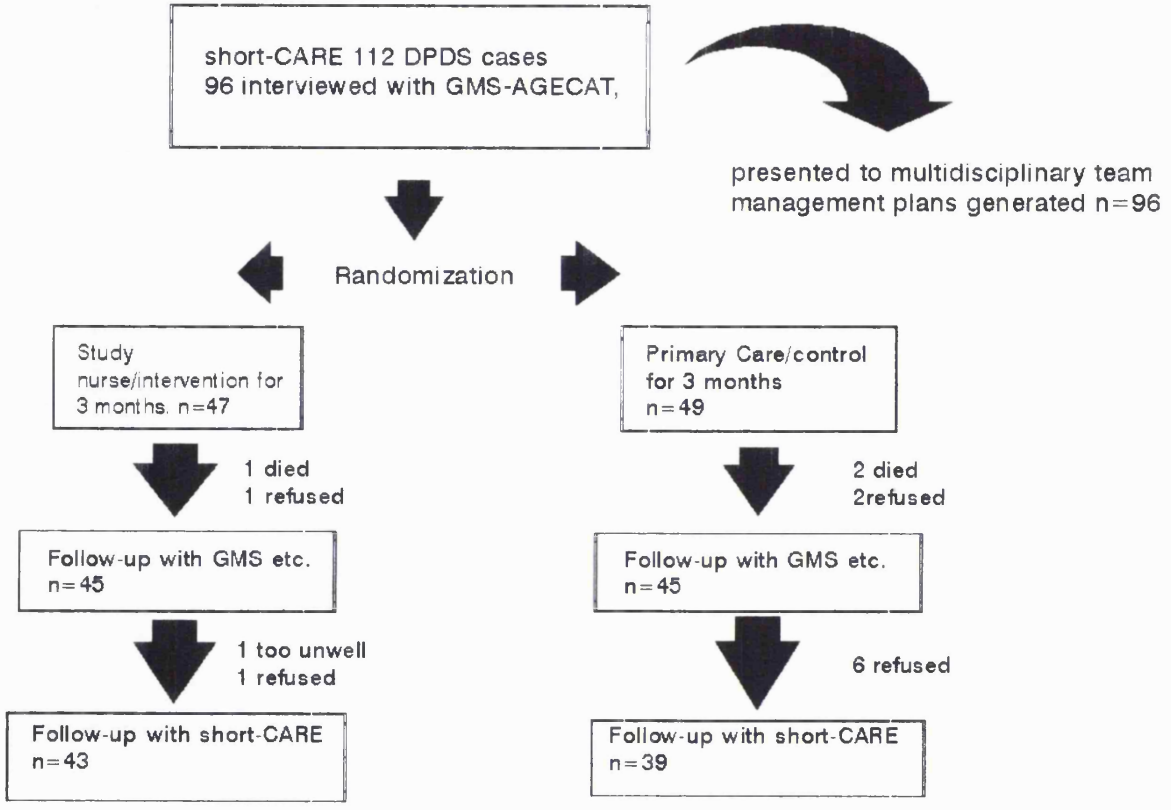
The study nurse was in regular contact with the old-age psychiatry team and could use them at any time in a consultative capacity. If at any time a patient

was felt to require direct referral for management by the secondary care old-age psychiatry team, this was discussed with the general practitioner and an offer of immediate referral was made. Patient safety was placed above all other factors throughout the study.

7.6 Intervention:

For those subjects in the intervention group, the study nurse, working in close liaison with general practitioners and supported by the multidisciplinary team, attempted to implement the suggestions from the management plans. The management plans were flexible and modifications could be made if necessary during the intervention period as the situation dictated, as long as such changes were agreed with the general practitioner and recorded. For those in the control group, the general practitioners were asked to manage the patient as they would normally. The structure of the study and sample size can be seen in Figure 7.6. Cases were passed through the study in consecutive cohorts of 30 (15 intervention cases and 15 controls) for each three month period- 15 being estimated as the ideal case load for a community nurse working with this patient group. A detailed diary of all interventions was kept by the study nurse during the three-month period for future analysis.

Figure 7.6. Flow chart of the intervention study showing the measures and numbers involved



7.7 Follow-up:

After the three month period the author, who attempted to remain ignorant to intervention status, repeated the GMS-AGECAT. At the end of the interview he inquired about whether or not the subjects were visited by the study nurse and also about possible intervention activity from the subjects who were not visited. In addition a worker, not otherwise involved in this study and ignorant of intervention status, repeated the short-CARE screen.

Those subjects that were deemed by the author and the study nurse to require further help from the psychiatric services were referred and rapidly picked up by the established community psychiatric nurse team.

7.8 Analysis

Statistical analysis of the results was carried out by the author with advice from a statistician (BB). A personal computer and the SPSS/PC statistical package obtained from the Institute of Psychiatry were used. Change in depression diagnostic score (DPDS) on the short-CARE was chosen as the key outcome measure for analysis because it derived from assessments 'blind' to intervention status. This therefore tried to avoid any dispute of systematic observer bias.

A preliminary analysis demonstrated that a higher initial score on the DPDS was associated with a

greater decrease in the score over the 3 month period (correlation= -0.45 p=0.001). Therefore the significance of outcome (three-month DPDS score) and interactions with other variables were calculated with initial DPDS score as a covariate.

7.9 Strengths and weaknesses of study design

Some strengths of the study include: i) the use of a screened household enumerated population, ii) the use of standard, valid measures of recognised clinical reference and the use of more than one diagnostic system, iii) randomisation of cases to either intervention or non-intervention groups, iv) the use of a research worker not otherwise involved in the study to check 3 months outcome scores, v) the use of current 'standard' primary care as a control.

There are some weaknesses in the design of the study: i) the study was based upon a survivor cohort and therefore comparisons with other epidemiological studies are limited, ii) because of the design of the intervention study, there was a delay of several weeks between screening with the short-CARE and interview with the GMS-AGECAT, iii) the use of a secondary care multidisciplinary team to generate care packages for depressed people within the community may not be seen as the most appropriate use of resources, iv) the use of one study nurse to make the interventions means

that outcome may depend upon an individual's energies to produce any effect, v) the sample size was too small to permit detailed comparisons of multifaceted intervention activity and outcome.

CHAPTER 8. Results.

8.1 The population and the response rate

The 112 DPDS cases identified by short-CARE equate to a prevalance rate in this survivor cohort of 190/1000 for "probable pervasive depression".

96/112 (85.7%) were interviewed further by the author with the GMS-HAS-AGECAT. Of the 16 not interviewed, 4 had died, 3 moved away from the area and 9 refused. Table 8.1 compares those "missed" with those successfully interviewed. There are no significant differences between the groups (although those "missed" tended to be older, more men and had lower depression scores).

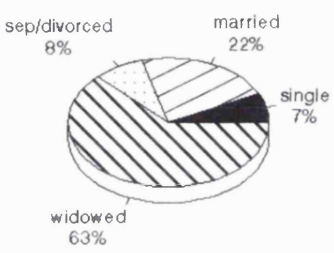
83% of DPDS cases were female with an average age of 76.3 years, in contrast 68.7% of the total rescreened population were female (chi-square=14.2 $p < 0.001$). Further demographic and health related features of the DPDS cases are shown in Figures 8.1.1 and 8.1.2. 63% were widowed, 22% married; 60% lived in council-rented accommodation and 26% lived in more supportive social services facilities; 62% lived alone, 22% lived with their spouse and 15% lived with a child; 43% had no close relative living in the borough; only 14% did not report a physical illness; only 21% were not receiving regular prescriptions from their general practitioner; 41% reported difficulty in walking; 29% reported recent serious physical pain.

Table 8.1. Demographic features of subjects screened as "probable pervasive depression" comparing those "missed" and those successfully interviewed.

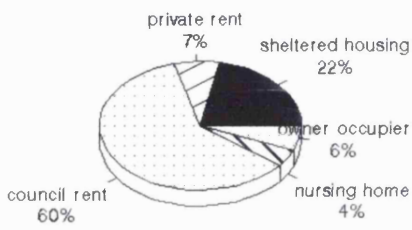
	No.of sub-jects	Female	Age (years)	Mean Score on short-CARE (DPDS)
All +ve on Screen	112	93(83%)	76.3	8.3 SD 1.5
Successfully Interviewed	96	82(85.4%)	75.9	8.4 SD 1.3
"Missed"	16	11(68.8%)	78.4	7.75 SD 2.4

Comparing those interviewed with those "missed":
sex: chi-square = 2.7 $p<0.2$
age: Mann-Whitney U $p=0.26$
DPDS scores: Mann-Whitney U $p=0.62$.

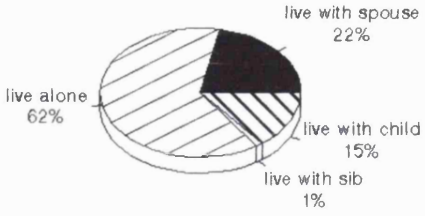
Figure 8.1.1 demographic features of diagnostic depression scale (DPDS) cases
n=96



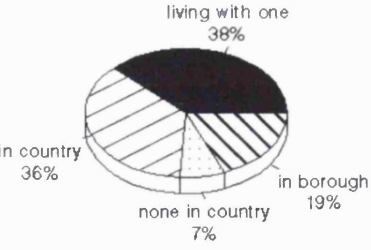
marital status



accommodation

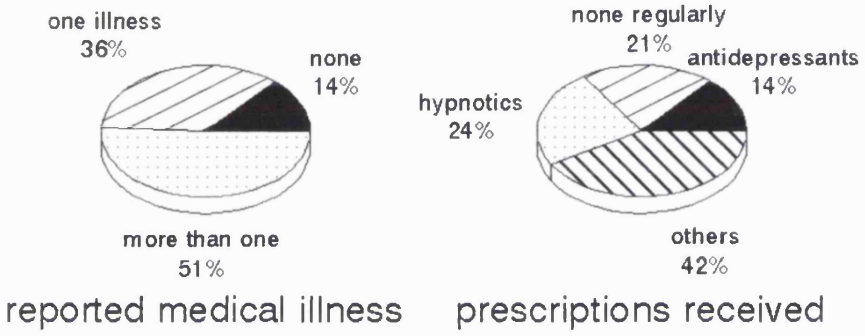


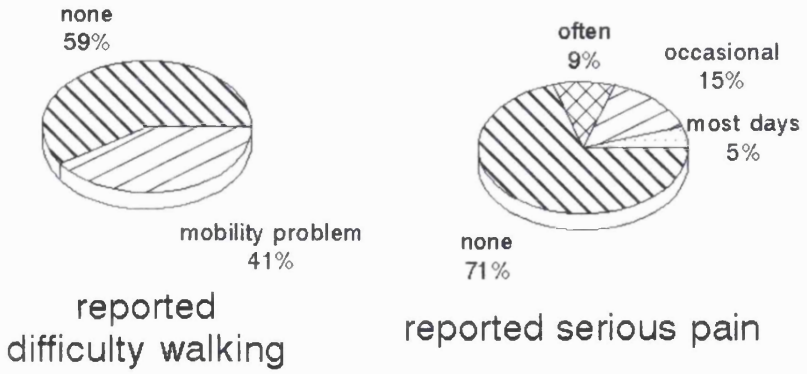
household size



close relatives

Figure 8.1.2 health among depression diagnostic scale (DPDS) case
n=96





8.2 The incidence rate of cases of "probable pervasive depression"

54/112 (48.2%) of the DPDS cases did not meet case criteria (noncases) in the 1988 screen. Thus an incidence rate of "probable pervasive depression" in this inner city community can be estimated. Assuming that the 54 became cases between screenings i.e. a two-and-a half year period, and that an average for the denominators over this time was (813 + 588)/2 = 700.5, the incidence rate per thousand of the population per year was estimated as 30.8 per 1000 per year.

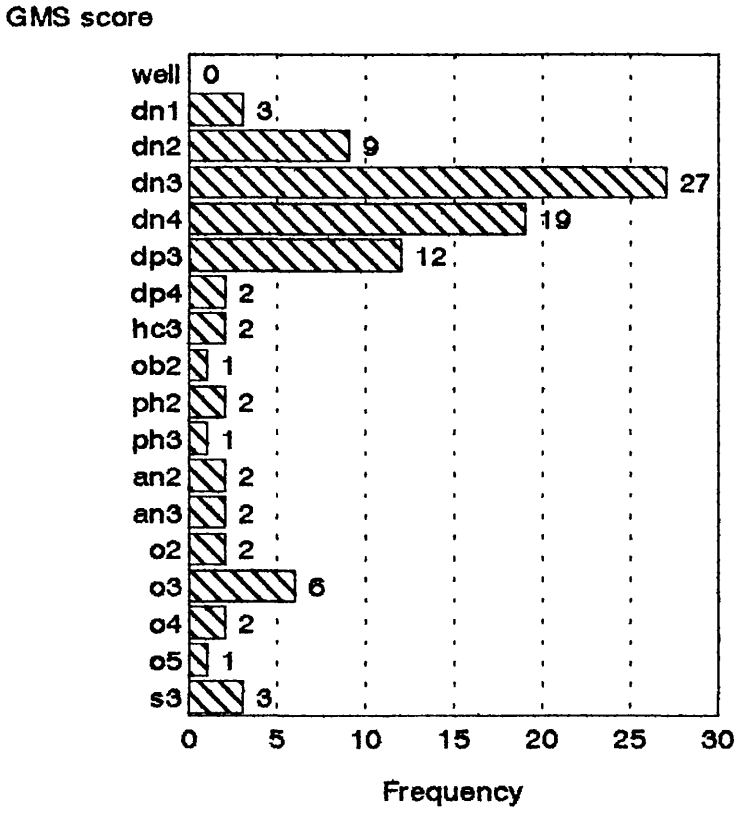
8.3 Classification by GMS-AGECAT and estimated incidence

Figure 8.3.1 demonstrates the classification by the GMS-AGECAT system in terms of the hierarchically determined final score (diagnostic caseness). 60/96 (62.5%) were classed as GMS-AGECAT diagnostic depression cases-14/96 (14.6%) DP cases and 46/96 (48%) DN cases; 12/96 (12.5%) were classed as subcases and 24/96 (25%) were classified in other categories or as well. Thus an estimated prevalence rate for GMS caseness is (60 x 112/96)/588 = 12% (2.8% DP and 9.2% DN). 6/14 (43%) DP cases and 17/46 (37%) DN cases were noncases by short-CARE DPDS in 1988 providing a

minimum incidence rate of 15.4 per thousand per year GMS-AGECAT diagnostic depression caseness- (23x112/96) (1000/700.5)/2.5.

16/60 (27%) of GMS diagnostic depression cases were married, 35/60 (58%) were widowed, 4/60 (7%) single and 5/60 (8%) separated or divorced. DN and DP cases did not show statistically significant differences in the distribution of sex (chi-square p< 0.8), age (Mann-Whitney U p=0.15), nor mean DPDS score (Mann-Whitney U p=0.36).

Figure 8.3.1 Geriatric Mental State (GMS-AGECAT) diagnoses among depression diagnostic scale (DPDS) cases
n=96



8.4 Comorbidity within GMS diagnostic depression cases

For these cases GMS-AGECAT provided comorbid symptoms as follows: 5/60 (8%) also reached subcase level on the organic scale; 4/60 (7%) reached subcase level and 1/60 (2%) case level on the obsessive/ compulsive scale; 3/60 (5%) reached subcase level and 3/60 (5%) reached case level on the hypochondriasis scale; 10/60 (17%) reached subcase level on the phobia scale; 44/60 (75%) reached subcase level and 13/60 (20%) case level on the anxiety scale. See Appendix 2 for data on comorbidity.

8.5 The GMS non-cases and sub-cases

36/96 (38%) were not classified as diagnostic depression cases on GMS. Of these 12/96 (13%) scored as subcases of depression, 17/96 (18%) received another psychiatric diagnosis at caseness level, and 7/96 (7%) scored as equivalent subcases. 16/36 (44%) of these subcases and non-cases compared with 16/60 (27%) of the GMS-diagnostic depression cases stated that they had improved with respect to their depressive symptoms (chi-square p=0.15) in the time between the latest screening interview and the GMS-AGECAT interview.

16/24 (68%) of those not classed as diagnostic depression cases nor as subcases by GMS-AGECAT did report depressive symptoms as recorded on the depression subscale of the GMS. Therefore only 8/96

(8%) of the original DPDS cases reported no depressive symptoms when classified on the GMS-AGECAT some weeks later.

8.6 Current treatment and GMS status

Only 4/96 (4%) of the DPDS cases were in contact with the secondary care psychiatric services. Table 8.6 illustrates the number of subjects who were currently receiving treatment according to GMS and DPDS diagnostic status.

Table 8.6 Current treatment according to Geriatric Mental State (GMS-AGECAT) diagnostic status

	antidepressants	hypnotics	counselling or supportive therapy
short-CARE DPDS cases	13/96 (14%)	23/96 (24%)	5/96 (5%)
GMS severer cases (DP)	4/14 (29%)	6/14 (43%)	1/14 (7%)
GMS milder cases (DN)	9/46 (20%)	12/46 (26%)	2/46 (4%)
GMS sub- and noncases	0/36 (0%)	5/36 (14%)	2/36 (6%)

A trend is evident when considering GMS diagnostic groups (DP, DN, and non-cases); those with a diagnosis which suggests a more severe depressive illness were receiving more medication.

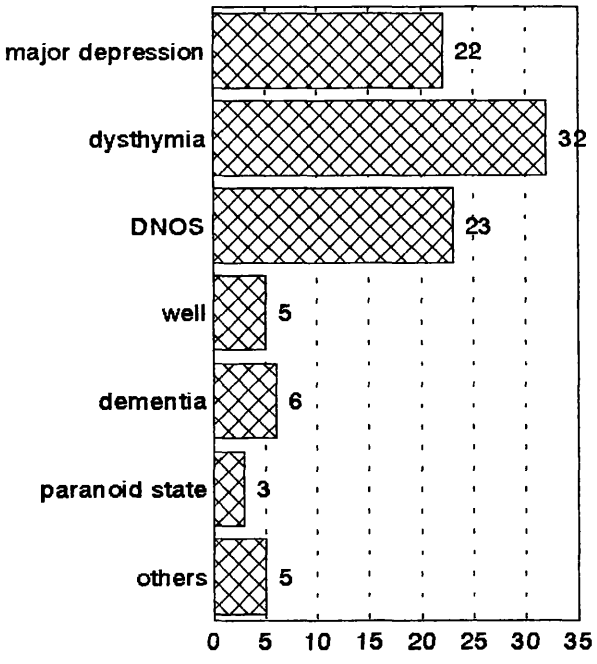
Considering all 96 subjects, those prescribed antidepressant medication had a higher mean DPDS score

(10.0) than that of those not receiving them (8.18) (Mann-Whitney U p=0.01). There was no significant difference between the DPDS scores of those prescribed and not prescribed hypnotic medication (Mann-Whitney U p=0.36).

8.7 DSMIIIR diagnoses

The distribution of DSMIIIR diagnoses can be seen in Figure 8.7. Their relationship to GMS diagnosis and short-CARE DPDS scores are shown in Table 8.7.1.

Figure 8.7 DSM-IIIR diagnosis among diagnostic depression scale (DPDS) cases



n=96 DNOS=depression not otherwise specified

TABLE 8.7.1 DEPRESSION DIAGNOSTIC SCALE SCORE (DPDS), GERIATRIC MENTAL STATE DIAGNOSTIC STATE (GMSDG) AND DSMIIIR DIAGNOSIS.

Case no.	DPDS	GMSDG	DSMIIIR	
1	9	dn3	DNOS	311.00
2	12	dn2	dysthymia	300.40
3	7	hc3	alcohol dependence	303.90
4	7	dn2	DNOS	311.00
5	6	dn3	dysthymia	300.40
6	8	an3	dysthymia	300.40
7	12	dp3	major depressive episode recurrent	296.32
8	9	dn2	major depressive episode	296.22
9	9	hc3	dysthymia	300.40
10	7	dn2	DNOS	311.00
11	7	dn3	DNOS	311.00
12	6	ob2	well	
13	8	dn3	DNOS	311.00
14	7	dn4	dysthymia	300.40
15	14	dn4	major depressive episode recurrent	296.32
16	6	dn3	dysthymia	300.40
17	8	dn3	DNOS	311.00
18	7	dn3	dysthymia	300.40
19	6	dn2	DNOS	311.00
20	15	dn4	DNOS	311.00

Case no.	DPDS	GMSDG	DSMIIIR	
21	9	ph2	simple phobia	300.29
22	9	dp4	major depressive episode	296.22
23	6	dn1	DNOS	311.00
24	11	dp4	major depressive episode	296.22
25	8	o3	major depressive episode	296.22
26	12	dn4	DNOS	311.00
27	7	dn1	well	
28	8	dn4	dysthymia	300.40
29	8	dp3	major depressive episode	296.22
30	9	dn2	dysthymia	300.40
31	8	dp3	major depressive episode recurrent	296.32
32	14	dn3	major depressive episode	296.22
33	7	dn3	DNOS	311.00
34	6	dn3	major depressive episode	296.22
35	11	dn3	DNOS	311.00
36	10	dn4	major depressive episode	296.22
37	7	dn3	major depressive episode	296.22
38	13	dn3	DNOS	311.00

Case no.	DPDS	GMSDG	DSMIIIR	
39	7	dn3	dysthymia	300.40
40	7	dn4	major depressive episode	296.22
41	6	dn3	DNOS	311.00
42	9	o2	DNOS	311.00
43	6	s3	paranoid schizophrenia	295.34
44	6	o5	dementia uncomplicated	290.00
45	6	dn4	dysthymia	300.40
46	8	o4	dementia uncomplicated	290.00
47	11	dn3	major depressive episode	296.22
48	11	dn4	dysthymia	300.40
49	6	dp3	major depressive episode	296.22
50	7	dn2	DNOS	311.00
51	8	dn4	dysthymia	300.40
52	6	dn3	DNOS	311.00
53	7	dn4	dysthymia	300.40
54	8	o4	dementia uncomplicated	290.00
55	11	dn3	dysthymia	300.40
56	7	an3	DNOS	311.00
57	7	dp3	dysthymia	300.40

Case no.	DPDS	GMSDG	DSMIIIR	
58	9	dn3	major depressive episode	296.22
59	12	dp3	adjustment disorder	309.00
60	7	dn3	dysthymia	300.40
61	12	dn4	DNOS	311.00
62	7	o3	dementia uncomplicated	290.00
63	12	dn4	dysthymia	300.40
64	11	ph2	well	
65	6	dn4	dysthymia	300.40
66	13	ph3	agoraphobia	300.22
67	10	dn4	dysthymia	300.40
68	10	dn3	dysthymia	300.40
69	7	dn2	dysthymia	300.40
70	6	dn2	dysthymia	300.40
71	7	o3	dysthymia	300.40
72	14	dp3	major depressive episode	296.22
73	8	dn3	dysthymia	300.40
74	9	dp3	paranoid state	297.10
75	9	s3	paranoid state	297.10
76	7	dp3	major depressive episode recurrent	296.32
77	6	o3	DNOS	311.00
78	12	dp3	dysthymia	300.40
79	6	o3	dementia uncomplicated	290.00

Case no.	DPDS	GMSDG	DSMIIIR	
80	6	dp3	major depressive episode	296.22
81	12	dn3	dysthymia	300.40
82	12	dn4	major depressive episode recurrent	296.32
83	6	an2	well	
84	6	dn3	dysthymia	300.40
85	6	dn4	DNOS	311.00
86	8	dn1	DNOS	311.00
87	6	o2	dementia uncomplicated	290.00
88	6	dn3	major depressive episode	296.22
89	9	dn3	dysthymia	300.40
90	11	dp3	dysthymia	300.40
91	7	s3	paranoid state	297.10
92	10	dn3	dysthymia	300.40
93	8	dn4	dysthymia	300.40
94	6	o3	DNOS	311.00
95	6	an2	well	
96	7	dn4	major depressive episode	296.22

DNOS = depression not otherwise specified

"Other diagnoses" consist of alcohol dependence, simple phobia, adjustment disorder, and agoraphobia. An estimated population prevalence rate for DSM-IIIR caseness can be calculated (77 x 112/96)/590 = 14% (4% major depression, 6% dysthymia and 4% DNOS).

18/77 (23%) of DSM-IIIR cases were married, 51/77 (66%) widowed, 7/77 (9%) single and 8/77 (10%) separated or divorced. 48/77 (84%) were female. There were no significant differences between diagnostic categories in terms of sex (chi-square = 1.0 p=0.3), age (Kruskal-Wallis chi-square =2.4 p=0.5), nor initial DPDS score (Kruskal-Wallis chi-square = 3.5 p=0.3).

The relationship between DSMIIIR diagnosis and current treatment can be seen in Table 8.7.2.

Table 8.7.2 Current treatment according to DSMIIIR diagnosis

	Antidepressant	Hypnotic	Counselling/ supportive therapy
Major dep.	4/22 (18%)	7/22 (32%)	2/22 (9%)
dysthymia	6/32 (19%)	9/32 (28%)	1/32 (3%)
DNOS	2/23 (9%)	5/23 (22%)	0/23 (0%)
others	1/19 (5%)	2/19 (11%)	2/19 (11%)

Again a trend for more prescription with greater severity of depression is seen.

The association between DSMIIIR diagnoses and

GMS-AGECAT diagnoses can be seen in Tables 8.7.3. with a more detailed breakdown of diagnostic status in Table 8.7.4.

Table 8.7.3. Crosstabulation of DSM-IIIR caseness for depression versus GMS-AGECAT caseness for depression

		DSM IIIR		
		CASE	NONCASE	
GMS-AGECAT DIAGNOSIS	CASE	58	2	n=60
	NONCASE	19	17	n=36
		n=77	n=19	N=96

Table 8.7.4. Crosstabulation between DSMIIIR diagnosis and GMS-AGECAT diagnosis.

	GMS-AGECAT diagnostic scores																
DSMIIIR	dn1	dn2	dn3	dn4	dp3	dp4	hc3	ob2	ph2	ph3	an2	an3	o2	o3	o4	o5	s3
major depressive episode	0	1	6	5	7	2	0	0	0	0	0	0	0	1	0	0	0
dysthymia	0	4	12	10	3	0	1	0	0	0	0	1	0	1	0	0	0
DNOS	2	4	9	4	0	0	0	0	0	0	0	1	1	2	0	0	0
adjustment disoder	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
agoraphobia	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
simple phobia	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
alcohol dependence	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
well	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0
paranoid schizophrenia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
dementia	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0
paranoid state	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2

Nineteen DSM-IIIR cases did not reach depression caseness level on the GMS-AGECAT and two GMS-AGECAT depression cases were not diagnosed as DSM-IIIR depression cases.

Their profiles are given in Table 8.7.5. The majority of those that were diagnosed as DSM-IIIR cases DNOS or dysthymia were classed as subcases of depression on the GMS-AGECAT. Cases 25, 42, 71, 77 and 94 possessed organic features to their mental states which the author classed as subordinate to their depressive symptomatology but were classified contrarily by GMS-AGECAT. Cases 6, 9 and 56 showed other neurotic features which the author also rated as secondary to their depressive symptoms. Case 59 had lost her husband the month before the interview and case 74 possessed depressive symptoms secondary to a delusional belief.

Table 8.7.5. DSMIIIR cases who were not GMS cases.

Case no.	DSMIIIR	GMS-AGECAT	Notes
2	dysthymia	dn2	widowed lady with panhypopituitarism living alone
4	DNOS	dn2	lady with marital difficulties
6	dysthymia	an3/dn2	widowed lady, living alone- daughter recently gave birth to child with spina bifida
8	major depressive episode	dn2	widowed lady with neurofibromatosis living alone
9	dysthymia	hc3/dn2	widowed lady living alone no family nearby
10	DNOS	dn2	widowed lady living alone- deaf
19	DNOS	dn2	widowed lady living with daughter and son-in-law - worries about daughter's health
23	DNOS	dn1	widowed man recently out of work- no relatives in this country
25	major depressive episode	o3/dn3	lady who had lost her partner, living alone-agitated
30	dysthymia	dn2	widowed lady, living alone
42	DNOS	o2/dn2	widowed man, living alone-recent gun shot through window
50	DNOS	dn2	widowed lady, living alone
56	DNOS	an3/dn2	widowed lady, living alone

Case no.	DSMIIIR	GMS-AGECAT	Notes
69	dysthymia	dn2	widowed lady, living alone
70	dysthymia	dn2	widowed lady, living alone- worsening eyesight
71	dysthymia	o3/dn4	widowed lady, living with son and daughter-in-law, feels pressured to move into nursing home
77	DNOS	o3	widowed lady, living alone- died during study
86	DNOS	dn1	widowed lady, living alone- recent attempted burglary
94	DNOS	o3/dn4	married lady, chairbound, blind and hard of hearing

Table of GMS-AGECAT diagnostic cases who were not DSMIIIR depression cases

Case no.	DSMIIIR	GMS-AGECAT	Notes
59	adjustment disorder	dp3	recently widowed lady, living alone
74	paranoid state	dp3/srp2	widowed lady, living alone, believed "Eileen" was regularly entering her flat, stealing things and tainting her food.

8.8 Associated clinical features in relation to classification by both taxonomies.

Table 8.8 describes the relationship between caseness as produced by the GMS-AGECAT and the DSM-IIIR systems and prevalences of reported previous depressive episodes, reported family history of depression, stated presence of physical illness, tablets taken per day for physical illness, reported difficulty walking and reported serious pain.

There were statistically significant associations between measures reflecting current physical health. The number of tablets consumed for physical illness was associated with complaints of pain (7.6 SD4.9 (n=28) versus 3.6 SD3.8 (n=67) Mann-Whitney U z=3.8 p=0.0001) and with complaints of difficulty walking (6.6 SD4.8 (n=39) versus 3.5 SD3.8 (n=57) Mann-Whitney U z=3.2 p=0.001). Of those that complained of pain 20/28 (71%) also complained of difficulty walking and of those not reporting pain 49/67 (73%) also reported no walking difficulties (chi-square=16.3 p=0.00005). Physical illness was very common for all subjects consisting of commonly arthritis and cardiovascular disorders. However medication taking in relation to physical illness was markedly different through the diagnostic groups with the severer cases of depression consuming significantly more (chi-square=7.9 p=0.05 for GMS and chi-square=10.5 p=0.02 for DSM-IIIR).

Table 8.8 To describe the relationship between diagnostic status and reported previous episodes of depression, family history of depression, physical illness tablets taken per day for physical illness, and reported difficulty walking and serious pain.

	PREVIOUS EPISODE OF DEPRESSION	FAMILY HISTORY OF DEPRESSION	STATED PHYSICAL ILLNESS	MEAN NUMBER OF TABLETS A DAY	REPORTED DIFFICULTY WALKING	REPORTED SERIOUS PAIN
GMS DP cases	6/14 (43%)	3/14 (21%)	12/14 (86%)	7.0 SD 5.9	8/14 (57%)	5/14 (36%)
GMS DN cases	16/45 (36%)	11/46 (24%)	42/46 (91%)	5.5 SD 4.6	17/46 (37%)	16/46 (35%)
GMS subcases	1/12 (8%)	4/12 (33%)	10/12 (83%)	3.0 SD 2.9	5/12 (42%)	1/12 (8%)
GMS noncases	4/22 (18%)	4/24 (17%)	19/24 (79%)	3.0 SD 3.1	6/23 (26%)	6/23 (26%)
MAJOR DEPRESSION	5/22 (23%)	3/22 (14%)	20/22 (91%)	7.3 SD 5.5	12/22 (54%)	9/22 (41%)
DYSTHYMIA	10/31 (32%)	11/32 (34%)	29/32 (91%)	4.3 SD 4.5	11/32 (34%)	10/32 (31%)
DNOS	10/23 (43%)	5/23 (22%)	20/23 (87%)	4.8 SD 3.7	6/23 (26%)	4/23 (17%)
OTHERS	2/17 (12%)	3/19 (16%)	14/19 (74%)	2.5 SD 2.6	10/19 (53%)	5/18 (28%)

Trend for tablets taken per day chi-square=7.9 P=0.05 for GMS and chi-square=10.5 p=0.02 for DSM

Reported difficulty walking tended to increase with increasing severity of depression and was a more frequent complaint than serious pain. Reported pain tended to be a feature of caseness in the GMS classification and of major depression and dysthymia in the DSM-IIIR system.

Reported episodes of previous depression diminished among GMS subcases and noncases and among "others" in DSM-IIIR. They tended to be more frequent among less major DSM-IIIR depressions.

A reported family history of depression was more common among the less severe cases/subcases of each diagnostic system.

8.9 Comparing "old" and "new" cases of depression

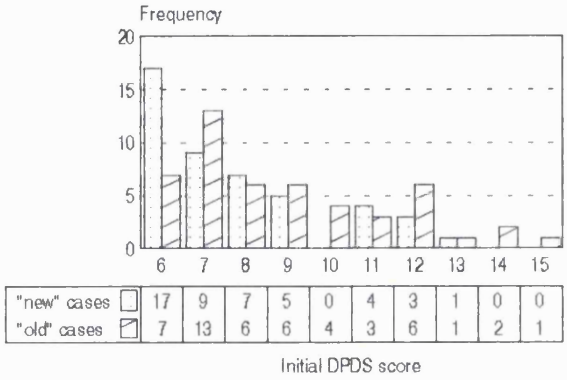
49/96 (51%) were also cases on the DPDS at the screening in 1988. The exact status of their mental states in the interim period is unclear and they cannot confidently be described as "chronic" cases of depression. However, because they may consist of those with recurrent low moods, equal numbers were recruited in either arm of the case control study. For the purposes of the results they will be referred to as "old" cases and those that were not cases in 1988 as "new" cases.

There were no differences between "old" and "new" cases in respect to sex (43/49 female (88%) versus 38/46 female (83%) chi-square=0.5 p=0.5) or mean age

(75.6 SD7.0 versus 76.3 SD6.6 Mann-Whitney U z=0.5 p=0.6)

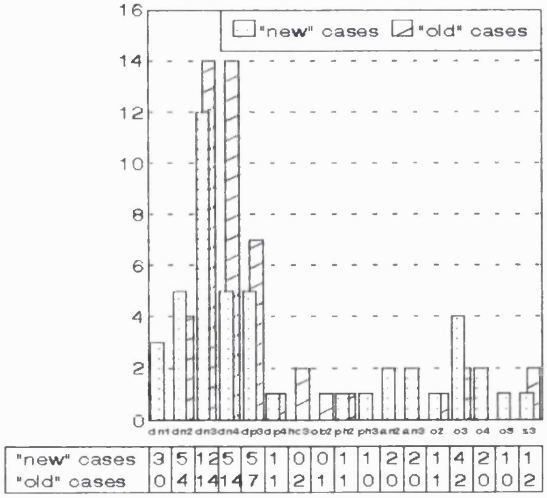
The short-CARE DPDS scores for "old" and "new" cases are shown in Figure 8.9.1 and the Geriatric Mental State diagnostic scores in Figure 8.9.2.

Figure 8.9.1 Comparison of initial depression scores (DPDS) of "old" (cases in 1988) and "new" (noncases in 1988).
"new" cases n=46 "old" cases n=49



Mean initial DPDS for "new" cases =7.8 SD 2.0 for "old" =8.9 SD 2.5
Mann-Whitney U Z=2.4 p=0.02

Figure 8.9.2. Initial Geriatric Mental State diagnostic scores of "old" (cases in 1988) and "new" (noncases in 1988).
"new" cases n=46 "old" cases n=49



The level of depressive symptoms as measured on the short-CARE diagnostic depression scale (DPDS) was greater among "old" cases (mean score 8.9 SD 2.5) than "new" cases (mean score 7.8 SD 2.0 Mann-Whitney U Z=2.4 p=0.02). The differences in the subscale scores of the Geriatric Mental State (GMS-AGECAT) are shown in Table 8.9. Geriatric Mental State depression and anxiety scale scores were higher among "old" cases (Mann-Whitney U p=0.02 and p=0.06 respectively) but other symptom scales were similar.

The DSM-IIIR diagnoses of "old" and "new" cases can be seen in the pie chart (Figure 8.9.3). The "old" group contained more cases of dysthymia (21 versus 11) and fewer DNOS (8 versus 15). There were more cases of major depression among the "old" group than the "new" group (13 versus 8) and fewer subjects falling outside the criteria for some form of depression (7 versus 12).

Table 8.9 Comparison of mean Geriatric Mental State (GMS-AGECAT) subscale scores between "old" (DPDS cases in 1988) and "new" (DPDS noncases in 1988) cases.

GMS subscale	mean scores "new" cases n=46	mean scores "old" cases n=49	Mann-Whitney U
depression	2.67 SD1.6	3.43 SD1.3	Z=2.36 p=0.02*
anxiety	1.6 SD1.0	2.1 SD1.0	Z=1.89 p=0.06*
obsessional	0.1 SD0.5	0.23 SD0.6	Z=1.4 p=0.17
hypochondria	0.11 SD0.5	0.4 SD1.0	Z=1.3 p=0.19
organic	0.65 SD1.4	0.25 SD1.4	Z=1.17 p=0.24
mania	0.02 SD0.2	0.00 SD0.0	Z=1.0 p=0.3
phobia	0.24 SD0.7	0.33 SD0.8	Z=0.7 p=0.47
schizophrenia related	0.11 SD0.5	0.12 SD0.6	Z=0.04 p=0.96

Figure 8.9.3. DSM-IIIR diagnoses of "old" (cases in1988) and "new" (noncases in 1988)

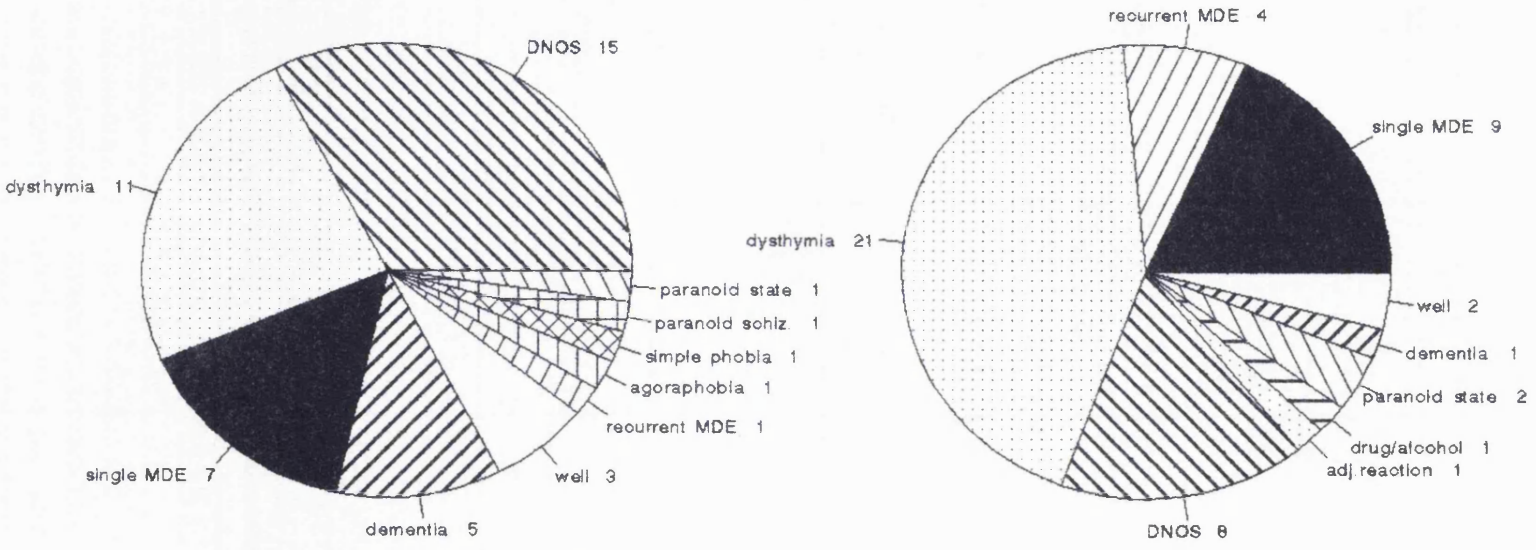
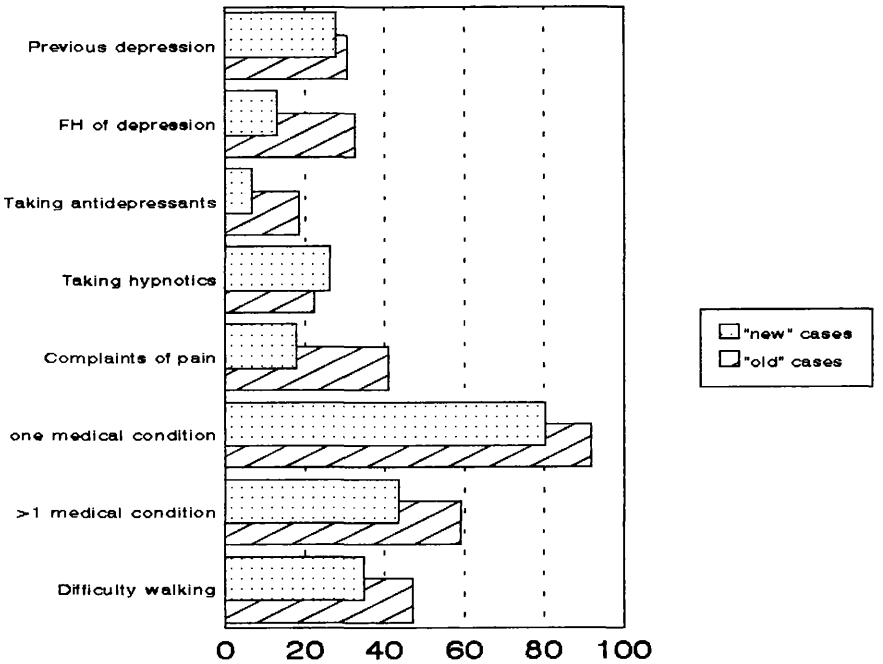


Figure 8.9.4 illustrates the relationships between "old" and "new" caseness and the clinical features examined above. Reported family history of depression was more frequent among the "old" cases (chi-square = 4.08 p = 0.04), and complaints of serious pain were also significantly more frequent among them (chi-square = 4.9 p = 0.02). They were also more likely to have been in receipt of antidepressants, to have complained of difficulty walking, and to have reported more than one physical illness, although these were not statistically significant.

There was though a marked difference in the number of tablets consumed per day for physical problems (psychotropic medication removed from the calculations). The mean number for "new" cases was 3.3 SD3.5 and for "old" cases 6.2 SD4.9 (Mann-Witney U z=3.13 p=0.002).

Figure 8.9.4 Percentages of "old" (cases in 1988) and "new" (noncases in 1988) in relation to previous depression, family history (FH) of depression current treatment, reported pain, difficulty walking and medical illness.



"new" cases	27.9	13	6.5	26	17.7	80.4	43.4	34.7
"old" cases	30.6	32.6	16.4	22.4	40.6	91.6	59.2	46.9

Previous depression chisquare=0.0 p=0.9 Family history of depression chi-square=4.08 p=0.04
Antidepressant chi-square=2.04 p=0.15 Hypnotic chi-square=.03 p=0.86 walking chi-square=1.5 p=0.2
Perceived pain chi-square=4.9 p=0.02 Presence of medical condition chi-square=1.74 p=0.18

8.10 Control and intervention groups

A profile of the intervention (n=47) and control (n=49) groups is demonstrated in Table 8.10. There were no significant differences in sex, age, initial DPDS score, proportion of "old" to "new" cases, current receipt of antidepressants, current contact with psychiatric services, nor physical ill-health.

8.11 Interventions suggested by the multidisciplinary team and achieved by the study nurse:

Table 8.11 demonstrates the interventions suggested by the multidisciplinary team for all 96 cases and those assigned to the intervention side of the study. Significantly more cases for which behavioural psychological interventions were prescribed were assigned to the intervention group. In all other intervention types there were no significant differences between the intervention and control groups.

Table 8.10. comparison between intervention and control groups for age,sex, initial depression diagnostic scale (DPDS) score, DPDS score in 1988, DPDS caseness in 1988 antidepressants use, psychiatric service use, and measures of physical health.

variable	intervention n=47	control n=49	statistics
sex	41 female, 6 male	41 female, 8 male	chi-square p=0.6
age	mean 75.4	mean 76.5	Mann-Whitney U p=0.35
initial DPDS	mean 8.45	mean 8.41	Mann-Whitney U p=0.96
DPDS in 1988	mean 5.76	mean 6.53	Mann-Whitney U p=0.27
also cases in 1988	20/46 (43%)	29/49 (59%)	chi-square p=0.2
already on antidepressants	8/47 (17%)	5/49 (10%)	chi-square p=0.33
currently known to psychiatric services	2/47 (4%)	1/49 (2%)	chi-square p=0.6
No. of tablets for physical illness	4.0 SD3.9	5.5 SD 4.9	Mann-Whitney U p=0.14
Reported difficulty walking	16/47 (34%)	23/49 (47%)	chi-square p=0.2
Reported medical illness	38/47 (81%)	45/49 (91%)	chi-square p=0.12
Reported serious pain	11/46 (24%)	17/49 (35%)	chi-square p=0.25

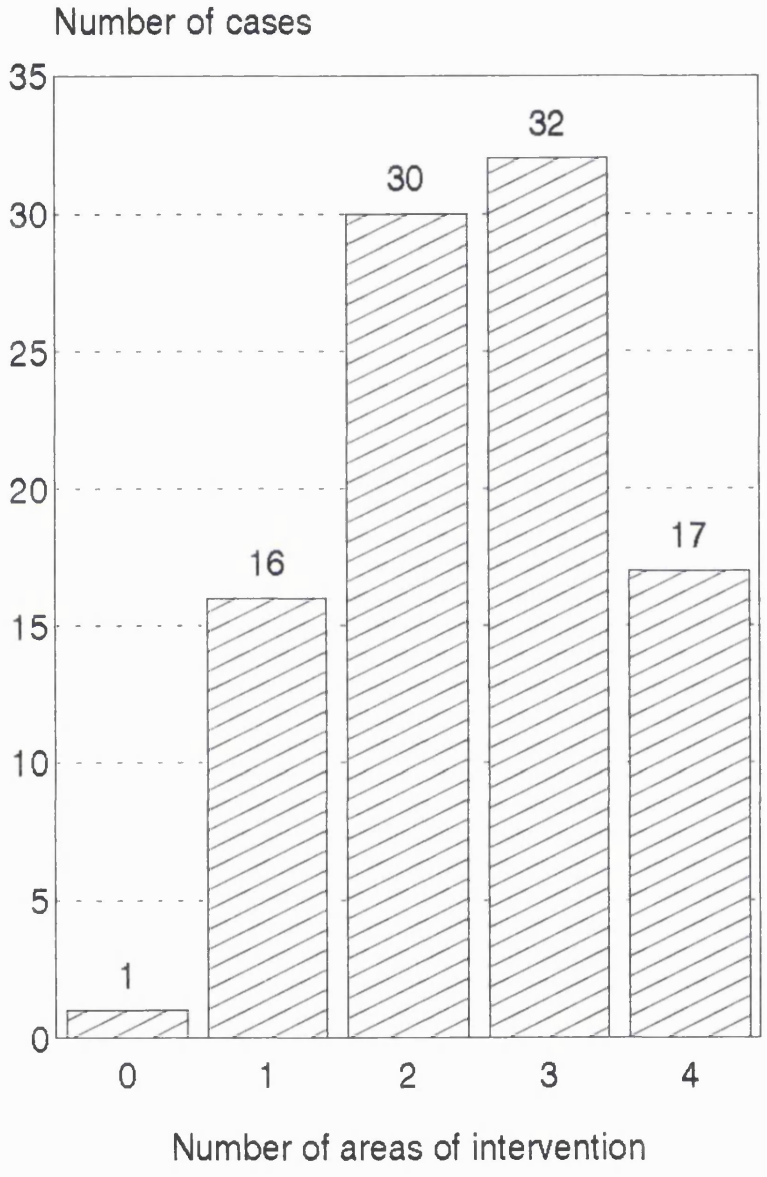
Table 8.11 Summary of all the interventions suggested by the multidisciplinary team

	For all cases n=96	For intervention cases n=47
Medication review	26/96 (27%)	12/47 (26%)
Start antidepressant	41/96 (43%)	19/47 (40%)
Check thyroid function	8/96 (8%)	3/47 (6%)
General physical review	27/96 (28%)	8/47 (17%)
Review pain control	6/96 (6%)	2/47 (4%)
Review mobility	7/96 (7%)	2/47 (4%)
Review eyesight	2/96 (2%)	2/47 (4%)
Review hearing	9/96 (10%)	5/47 (10%)
Review ADL	7/96 (7%)	5/47 (10%)
Psychological symptom control	20/96 (21%)	16/47 (34%)**
Relationship counselling	20/96 (21%)	13/47 (28%)
Bereavement counselling	17/96 (18%)	7/47 (15%)
Increase socialisation	44/96 (46%)	26/47 (55%)
Housing/financial assistance	17/96 (18%)	9/47 (19%)

All differences statistically NS except ** chi-square=5.2 p=0.02.

The multifaceted nature of the interventions suggested can be inferred by the sheer number of them and is demonstrated in Figure 8.11.1. with over 50% of subjects requiring interventions in three or more areas.

Figure 8.11.1 Chart showing the frequency of single and multiple areas of intervention (antidepressants/physical health/specific psychological help/social help) suggested by the secondary care team as necessary to manage the depression of cases.



Forty-seven cases were allocated to the study nurse intervention group, two refused to participate, one died prior to intervention and one was felt by the multidisciplinary team not to require intervention. Therefore 43 cases were seen by the study nurse. An average of ten visits, each of approximately 45 minutes, were made to each of the 43 patients over the three month period. A mean of 7 hours of study nurse time was spent face to face with each patient.

The interventions carried out involved, on average, 6 hours of "psychological" intervention per patient in 3 months- this intervention process encountered the fewest difficulties with 100% success. Requests for an increase in social network and a trial of antidepressants were discovered to be the most difficult to implement: in 26/43 (60%) of cases the multidisciplinary team requested that the patient should start at a club or day centre, but 18/26 (69%) were not implemented due to patient refusal; there were 19/43 (44%) requests for a trial of antidepressants, but 12/19 (63%) were not implemented due mainly to patient refusal but also to some general practitioner resistance. Overall 50% of activities were not implemented because of patient refusal.

8.12 Intervention activity in the control group:

There was no extra specific therapeutic activity for the control group (despite notification to the general practitioners that the patients were depressed). One subject was already attending a day hospital, 5/49 (10%) were already prescribed antidepressant medication and 13/49 (27%) prescribed hypnotic medication from their general practitioners. None was being visited by a community psychiatric nurse.

8.13 Characteristics of "non-completers"

Tables 8.13.1 and 8.13.2 demonstrate the cases who did not complete follow-up, ten on the control side and four on the intervention side. There were no significant differences in age, sex and initial depression scores between these "non-completers" and the cases who were followed-up fully.

Table 8.13.1. Characteristics of subjects without three-month short-CARE diagnostic depression scale (DPDS) scores i.e. "non-completers"

	Case no.	sex	age (years)	initial DPDS score	initial GMS diagnostic score	DSM-IIIR diagnosis	Reason score at 3 months not obtained
Control cases	4	F	79	7	dn2	DNOS	refused
	5	M	81	6	dn3	dysthymia	refused
	14	F	81	7	dn4	dysthymia	refused
	21	F	78	9	ph2	simple phobia	refused
	34	F	79	6	dn3	MDE	died
	48	F	79	11	dn4	dysthymia	refused
	77	F	76	6	o3	DNOS	died
	79	F	74	6	o3	dementia	refused
	82	F	71	12	dn4	MDE	refused
	86	F	75	8	dn1	DNOS	refused
Intervention cases							
	41	F	69	6	dn3	DNOS	too ill
	54	F	74	8	o4	dementia	died
	66	F	66	13	ph3	agoraphobia	refused
	94	F	87	6	o3	DNOS	refused

Table 8.13.2. Analysis comparing control and intervention "non-completers" with complete cases

Status	mean age (years)	initial mean DPDS score
Control n=10 "non-completers"	77.3 SD3.2	7.8 SD2.2
intervention n=4 "non-completers"	74.0 SD9.3	8.3 SD3.3
completers n=82	75.9 SD7.0	8.5 SD2.4

Mann-Whitney U analyses for:

age
- control versus completers Z=0.88 p=0.38
- intervention versus completers Z=0.72 p=0.47

initial DPDS score
- control versus completers Z=1.1 p=0.3
- intervention versus completers Z=0.5 p=0.6

8.14 Outcome results by DPDS score.

Study nurse effect:

Table 8.14.1 demonstrates the difference between control and intervention groups. Results are displayed for all cases in the intervention criteria and for those who were classed as GMS-AGECAT cases by the diagnostic interview prior to intervention.

Initial DPDS scores were discovered to correlate highly with change in score over the three months period ($p=0.001$). It was therefore necessary to perform all other between group analyses with initial DPDS as a covariate so that any outcome differences brought about by differences in initial DPDS scores could be recognised and controlled.

Studying firstly all the cases, the intervention group fell a mean of 2.7 points on the DPDS scale at three months while the control group fell 1.26. The differences between the two groups was statistically significantly different at the 5% limit. Looking secondly at the GMS-AGECAT cases, the intervention group fell a mean of 2.83 points on the DPDS scale at three months while the control group demonstrated least change falling only 0.88 points. The differences here were significant at 0.8%.

Table 8.14.1.Initial and three-month mean depression diagnostic scores (DPDS) for "probable pervasive depression" cases and Geriatric Mental State cases (GMS) according to intervention status

	all DPDS cases n=96 initial DPDS score	all DPDS case n=82 3 month DPDS score	GMS cases n=60 initial DPDS score	GMS cases n=54 3 month DPDS score
intervention	8.45 SD 2.47	5.88 SD 2.6	8.79 SD 2.68	5.96 SD 2.66
non-intervention	8.41 SD 2.33	7.15 SD 3.3	9.0 SD 2.5	8.12 SD 2.98

all DPDS cases ANOVA F=3.9 p=0.05, GMS cases ANOVA F=7.5 p=0.008
in all analyses initial DPDS score was used as a covariate as it was found to correlate highly with change in score over the 3 months (Pearson correlation coeff. -0.45 p=0.001).

Age and sex:

As can be seen in Table 8.14.2, age did not appear to have an effect on outcome among the DPDS cases (ANOVA p=0.39). There was no significant difference of intervention effect between age groups (study nurse by age analysis F=0.69 p=0.56).

Nor did sex of subject appear to affect outcome significantly (ANOVA p=0.14). Men and women appeared to respond equally well to the study nurse intervention (study nurse by sex analysis F=0.45 p=0.5).

GMS diagnosis at entry:

GMS diagnosis had no significant effect on outcome (ANOVA p=0.49), nor was the study nurse differentially effective (study nurse by GMS diagnosis analysis F=1.1 p=0.35).

DSMIIIR diagnosis at entry:

DSM-IIIR diagnosis at entry also did not affect outcome significantly (ANOVA p=0.5). There was no interaction effect with the study nurse (study nurse by DSM-IIIR diagnosis analysis F=2.0 p=0.125).

For both see Table 8.14.3.

Table 8.14.2 Mean short-CARE diagnostic depression scale scores (DPDS) according to age and sex. All ANOVA scores are calculated using initial DPDS as a covariate.

	Total cohort		Control group		Intervention group	
	initial mean DPDS score	3 months mean DPDS score	initial mean DPDS score	3 months mean DPDS score	initial mean DPDS score	3 months mean DPDS score
Age (years)						
-69	9.5 SD2.8 n=19	6.4 SD3.7 n=17	10.4 SD2.9 n=9	8.2 SD7.8 n=9	8.6 SD2.5 n=10	4.4 SD2.5 n=8
70-74	8.4 SD2.4 n=22	7.0 SD2.3 n=19	9.5 SD2.4 n=8	7.8 SD2.3 n=6	7.8 SD2.3 n=14	6.6 SD2.3 n=13
75-79	8.5 SD2.3 n=28	5.9 SD 2.6 n=22	8.1 SD1.9 n=17	6.1 SD2.9 n=11	9.2 SD2.9 n=11	5.7 SD2.4 n=11
80+	7.6 SD1.8 n=27	6.6 SD3.3 n=24	7.0 SD1.0 n=15	7.0 SD3.6 n=13	8.4 SD2.4 n=12	6.3 SD3.0 n=11
ANOVA statistics	F=1.0 p=0.39		F=0.5 p=0.7		F=1.6 p=0.2	
Sex						
male	7.6 SD1.9 n=14	7.2 SD2.7 n=13	7.6 SD1.4 n=8	8.2 SD3.0 n=7	7.5 SD2.5 n=6	6.0 SD1.8 n=6
female	8.6 SD2.4 n=82	6.3 SD3.0 n=69	8.6 SD2.5 n=41	6.9 SD3.3 n=32	8.6 SD2.5 n=41	5.9 SD2.7 n=37
ANOVA statistics	F=2.2 p=0.14		F=2.3 p=0.14		F=0.13 p=0.72	

Table 8.14.3 Mean short-CARE diagnostic depression scale scores (DPDS) according to GMS-AGECAT diagnosis and DSM-IIIR diagnosis. All ANOVA scores are calculated using initial DPDS as a covariate.

	Total cohort		Control group		Intervention group	
	initial mean DPDS score	3 months mean DPDS score	initial mean DPDS score	3 months mean DPDS score	initial mean DPDS score	3 months mean DPDS score
GMS diagnosis						
DP case	9.4 SD2.6 n=14	7.5 SD3.3 n=14	10.1 SD2.7 n=8	8.3 SD3.3 n=8	8.5 SD2.2 n=6	6.5 SD3.1 n=6
DN case	8.8 SD2.6 n=46	6.8 SD2.9 n=40	8.7 SD2.4 n=23	8.1 SD2.9 n=18	8.9 SD2.8 n=23	5.8 SD2.6 n=22
subcase	7.6 SD1.7 n=12	5.9 SD1.8 n=10	7.2 SD0.5 n=4	4.5 SD3.5 n=2	7.8 SD2.1 n=8	6.3 SD1.3 n=8
noncase	7.5 SD1.8 n=24	5.2 SD3.2 n=18	7.2 SD1.5 n=14	5.4 SD3.2 n=11	8.0 SD2.1 n=10	5.1 SD3.6 n=7
ANOVA statistics	F=0.8 p=0.49		F=1.2 p=0.32		F=0.35 p=0.79	
DSM-III diagnosis						
MDE	9.1 SD2.7 n=22	7.2 SD2.8 n=20	8.9 SD2.5 n=15	7.5 SD3.3 n=13	9.7 SD3.4 n=7	6.7 SD1.7 n=7
dysthymia	8.4 SD2.1 n=32	6.8 SD2.7 n=29	8.5 SD2.0 n=13	8.5 SD2.4 n=10	8.4 SD2.1 n=19	5.8 SD2.4 n=19
DNOS	8.2 SD2.6	6.2 SD3.1	8.3 SD2.7	7.7 SD3.8	8.2 SD2.6	5.3 SD2.2

"Old" versus "new"

By dividing the study sample into two groups i) "old"-those who were DPDS cases in 1988 screen and ii) "new"-those who were not DPDS cases in 1988 screen, there was an outcome effect in that the "old" cases did not improve as much as "new" cases (see Table 8.14.4). There was also a differential effect with the study nurse demonstrating greatest improvement among "old" cases; "new" cases appeared to do well without intervention (study nurse by caseness in 1988 analysis F=7.5 p=0.008).

Living alone:

Subjects living on their own were no more or less likely to improve than those living with someone (see Table 8.14.4) ANOVA p=0.7. The study nurse intervention was no more effective on the people living alone than on those living with others (study nurse by living alone analysis F=0.04 p=0.85).

Number of visits and time spent face-to-face:

These measures of study nurse/subject interaction are not significantly related to outcome effect (correlation coefficient -0.18, and correlation coefficient -0.2 respectively).

Table 8.14.4 Mean short-CARE diagnostic depression scale scores (DPDS) according to DPDS caseness in 1988 and whether or not subject was living alone. All ANOVA scores are calculated using initial DPDS as a covariate.

	Total cohort		Control group		Intervention group	
	initial mean DPDS score	3 months mean DPDS score	initial mean DPDS score	3 months mean DPDS score	initial mean DPDS score	3 months mean DPDS score
DPDS case in 1988						
noncase or "new"	7.8 SD2.0 n=46	5.4 SD2.6 n=36	7.9 SD1.9 n=20	5.0 SD2.6 n=14	7.7 SD2.1 n=26	5.7 SD2.7 n=22
case or "old"	8.9 SD2.5 n=49	7.3 SD3.0 n=45	8.7 SD2.5 n=29	8.4 SD3.0 n=25	9.2 SD2.4 n=20	6.0 SD2.5 n=20
ANOVA statistics	F=5.2 p=0.03		F=10.3 p=0.003		F=.002 p=0.97	
Living alone						
Yes	8.5 SD2.4 n=58	6.8 SD3.1 n=52	8.4 SD2.3 n=30	7.4 SD3.2 n=25	8.8 SD2.4 n=28	6.1 SD2.8 n=27
No	8.4 SD2.5 n=35	6.5 SD2.6 n=27	8.6 SD2.4 n=17	7.6 SD2.8 n=12	8.2 SD2.6 n=18	5.6 SD2.2 n=15
ANOVA statistics	F=0.14 p=0.7		F=.03 p=0.87		F=0.2 p=0.64	

8.15 Outcome analyses by case/non-case criteria of depression:

(a) Using DPDS criteria 33% (13/39) of the cases in the control group and 47% (20/43) of cases in the intervention group became non-cases over the three months (NS chi-square= 1.48).

(b) Analysing those subjects who met GMS criteria at entry to the study, 23% (6/26) of the cases in the control group and 50% (14/28) of the cases in the intervention group became non-cases (chi-square=4.19 p=0.04). Focusing on the "old" GMS cases then 17% (3/19) became non-cases in the control group compared to 57% (8/14) in the intervention group (chi-square=6.2 p=0.01).

8.16 Physical health, "new"/"old" caseness and improvement

The possible interactions between the measures associated with physical health and the concept of "old" and "new" cases are further explored in terms of their association with changes in DPDS and movement from caseness to noncaseness.

The mean number of tablets taken for physical illness was higher, although not statistically significantly so, in the non-intervention group (5.5 SD4.9 versus 4.0 SD3.9 z=1.5 p=0.14). Reported pain was strongly associated with tablet taking (7.6 SD4.9 versus 3.6 SD3.8 Mann-Whitney U z=3.8 p=0.0001). The

frequency of reported pain was not significantly different between the intervention and nonintervention groups (11/46 (24%) versus 17/49 (35%) chi-square=1.3 p=0.3), but was higher in the "old" as opposed to the "new" cases (chi-square=4.9 p=0.02). Tablet taking for physical illness was also higher in the "old" cases (see Figure 8.9.4 and text).

Examining first the intervention group, those that became noncases compared to those that remained cases: i) were taking similar numbers of tablets for physical conditions (4.2 SD4.7 versus 3.9 SD3.5 z=0.07 p=0.9), ii) reported similar amounts of pain (6/20 (30%) versus 5/23 (22%) chi-square=0.4 p=0.5), and iii) were similar in the proportion of "old" to "new" cases (9/20 (45%) versus 11/22 (50%) chi-square=0.1 p=0.75). Those who reported pain had a mean change in DPDS score of -2.2 SD3.1 (n=32) and those who did not -2.7 SD3.1 (n=11) (Mann-Whitney U z=0.5 p=0.6). "New" cases had a mean change in score of -1.9 SD2.8 (n=22) while "old" cases had a mean change of -3.2 SD3.4 (n=20) (Mann-Whitney U z=1.5 p=0.15).

Among the nonintervention cases, again comparing those that became noncases with those that remained cases, they were i) taking similar numbers of tablets for physical illness (4.9 SD5.5 versus 5.8 SD4.2 Mann-Whitney U z=1.1 p=0.27), ii) similar numbers were reporting pain (4/13 (31%) versus 10/24 (42%) chi-square=0.2 p=0.6), but iii) there were far fewer "old"

cases (5/13 (38%) versus 20/26 (77%) chi-square=5.6 p=0.02). The mean changes in DPDS scores were -1.5 SD3.4 for those not reporting pain and -1.3 SD2.8 for those reporting pain (z=0.3 p=0.8), and -3.0 SD3.0 for "new" cases and -0.5 SD3.0 for "old" cases (z=2.3 p=0.02).

Examining the nonintervention "old" cases, those who reported pain had a mean change in DPDS of -1.3 SD2.8 (n=14) while those who had not reported pain had a mean change of +0.5 SD3.0 (n=11), although this was not statistically significant (Mann-Whitney U z=1.4 p=0.16).

CHAPTER 9. Discussion of the results

9.1 Major Findings of the Investigations

The main findings of this study are:

i) Depression as classed by Geriatric Mental State (GMS) caseness criteria was confirmed in 12% of this population of older people.

ii) There was a strong association between GMS case level depression and concurrent anxiety symptoms. Organic symptoms, obsessive compulsive symptoms, and hypochrondriacal symptoms were less frequently present.

iii) Although increasing severity of depression by GMS criteria was associated with an increase in the frequency of general practitioners' prescriptions of antidepressant medication, only 14% of those screened as depressed cases and 20% of GMS depressed cases were in receipt of them. Only 4/96 (4%) of screened depressed cases were in contact with secondary care psychiatric services.

iv) Interventions, for the community nurse, suggested by the local old age psychiatry team were multifaceted, comprising psychological, social and physical components. 51% of depressed subjects were thought to require intervention in several areas. Some interventions such as referral to a day centre or prescription of antidepressants were difficult to implement primarily because of the subjects' reluctance. However, personal psychological interventions by

the nurse were readily accepted. No interventions specific to managing the identified depression were reported among the control subjects.

v) Despite difficulties in implementing management plans there was a significant difference in outcome between intervention and non-intervention cases as measured by the short-CARE depression scale (DPDS) at three months. The outcome difference was particularly marked for those subjects who were classed as GMS cases at entry to the study and for those who appeared to have been depressed in 1988 as well as 1990 (old cases). This improvement did not seem to be an artefact of methodology or measurement.

9.2 Methodological Critique

9.2.1 Population

Because of the methodology employed in this study, to obtain depressed subjects for an intervention study, involved detailed interviewing of a rescreened houshold enumerated cohort, the epidemiological findings cannot be compared with other published studies. The GMS prevalence rate was similar to that discovered by Copeland et al. (1987) (12% versus 11.3%) but the incidence rate was lower (15.4 per thousand per year versus 23.7 per thousand per

year). Thus it appears that this survivor cohort, representing approximately 70% of the original screened population, had a higher level of longer-lasting cases compared to Copeland's study.

9.2.2 Short-CARE (DPDS scale)

(a) Detection of cases

The short-CARE is a validated instrument for the detection of depression in older communities (Gurland et al. 1984). On detailed follow-up interview only 8% of subjects were found to have no depressive symptoms, 63% were classed as cases of depression by the GMS-AGECAT criteria, and 80% were classed as cases of depression by the research psychiatrist using DSM-IIIR criteria.

(b) as a measure of change

An 'a priori' determination of the degree of change in DPDS score that implied clinical significant improvement was difficult. One logical position was to require the change to cross the cut-point on the scale as this represents the position so far as validation report is concerned. However, as the scale has a wide range, it was also important in an analysis not to ignore changes in degree of depressive symptomatology regardless of score. Both measures of reporting change in this scale, the outcome measure of the study, have been presented - statistically significant difference of mean score between the groups and categorical

changes from case (above cut-point) to non-case (below cut-point).

9.2.3 Geriatric Mental State (GMS)

The GMS-AGECAT system employed for diagnostic evaluation is a reliable and valid instrument specially developed for use with older people. The author was trained in its use and with this reliability checked by workers at the University of Liverpool.

63% of those screened as DPDS cases were classed as cases on the GMS-AGECAT. Because of the design of the intervention study, there was a delay of several weeks between screening with the short-CARE and the interview. However, an analysis of the responses to a supplementary question concerning alteration of mental state between screening and interview indicated that more classed as noncases at interview stated that they had improved in that time. Thus some of the apparent "false positives" on DPDS may have been explained by time delay. Other "false positives" were those with depressive symptoms associated with another primary psychiatric diagnosis, who would have been classed by GMS into this diagnosis.

The GMS-AGECAT diagnostic system showed good agreement with the psychiatrist's DSM-IIIR diagnoses (agreement coefficient 0.78). Most disagreements occured with cases of DSM-IIIR dysthymia or depression

not otherwise specified (DNOS) who were classed as subcases on the GMS-AGECAT programme. Other differences reflected differing precedences of symptoms in relation to diagnosis and the historical information available to the psychiatrist which could not currently influence the AGECAT programme.

9.2.4 Sample size

The numbers entered into the study were limited to those identified as cases of probable pervasive depression by short-CARE screening. 40 subjects completed the follow-up in each arm of the study and, given a standard deviation within the study population of 2.39 around the mean depression score on the DPDS scale, the study had a power of 96% to demonstrate a mean 2 point difference between the groups (Armitage and Berry 1987). The power to identify differences between subsets of the intervention group and the control diminished as a function of group size. Larger numbers would have made analysis of the effects of specific types of intervention possible and diminished probable type II errors e.g. receiving specific interventions such as antidepressants.

9.2.5 Design of the study

The intervention study was designed to test the proposition that a community nurse working within the primary care setting and in liaison with a secondary

care multidisciplinary team could improve the mental state of depressed older people in the community substantially more than current standard primary care practice. This was tested by a form of single blind random control trial, the observers being unaware of group membership.

Group membership following randomisation remained blind to the author and particularly to the research worker who performed the three month short-CARE interviews. A research worker otherwise completely uninvolved in the study was employed to repeat the short-CARE at 3 months in an attempt to reduce any observer bias. In an observer blind study, "blindness" can be difficult to ensure. However, the research worker did not report that subjects were informing her about being visited by the study nurse. Further, as the short-CARE is a multi-scale, semistructured instrument, it is difficult to introduce bias unless the rater is familiar with the components of each scale and its scoring.

Randomisation appeared to be effective in dividing the study into two equivalent groups. There were more "old" cases in the control group but not to a statistically significant effect. The flow of patients, 15 in each arm of the study every three months, was arranged to reflect the anticipated workload of a community nurse working with such a patient group. However this process which protected

the nurse from overload, may have resulted in a delay between a positive screen result and the detailed interview for many patients (see above).

There were also aspects of the control group that need considering. First, this group did receive an intervention, that is several hours of interview time with a trained psychiatrist. Second, it was difficult to determine whether or not the control group received management typical of the standard in primary care as the general practitioners may have misinterpreted the instructions given during the study (to treat the control group as normally as possible), perhaps they may have either increased or witheld specific interventions or referrals. Then, experience of discussing with the study nurse some of their patients in the intervention group may have affected their dealings with the control group. Little positive contamination was evident as the control group was conspicuous by the absence of interventions, and therefore this may have augmented the effect demonstrated.

9.2.6 The interventions

The use of a secondary care multidisciplinary team to generate management plans for patients in the primary care setting was not an ideal as such a team usually manages patients with more severe psychopathology. However, the advantage was that the

team had considerable experience in the management of depression.

The interventions suggested by the team were multifaceted in nature, reflecting the multiple problems the depressed older people encountered. Management plans were created using information presented to the team by the author obtained from his detailed interview plus any extra information available and collected by him from hospital and general practitioner notes. This information was presented in a systematised fashion as is the practice on hospital ward rounds. The consultant psychiatrist involved did not personally see the patients. It could be argued that the care management plans were inferior to usual hospital practice and therefore not as likely to be effective. Three lines of argument can be made against this suggestion and its implications to clinical practice: i) most depression is managed within the primary care setting by general practitioners without recourse to secondary care advice or opinion. The information in this study was collected by a post- membership senior registrar with access to hospital and general practice notes. ii) It would be practically impossible for a consultant psychiatrist to see every older person who was significantly depressed unless there was a vast expansion in consultant numbers. Therefore in the development of services, a supervisory activity would

be a much more realistic proposition. iii) Recent work (Collighan et al.1993) has demonstrated that within old age psychiatry a multidisciplinary approach to assessment of community referrals is not associated with misdiagnosis of psychiatric disorder.

Many of the suggested interventions were difficult to implement, and, among the social interventions, even those that could be organised may not have had sufficient chance to prove effective by the end of the intervention period (e.g. referral to day centre). Many of the interventions required compliance from older people with suggested activities which was not forthcoming (e.g. starting antidepressant medication). To increase the chances of implementation the study nurse worked in liaison with the general practitioners. However, it could be argued that the general practitioners may not have fully agreed with the secondary care suggestions and therefore may not have fully supported the study nurse's activities. More successful interventions may have been possible either if the general practitioners had been involved in the generation of management plans or if the secondary care services had temporarily taken over clinical responsibility for these patients (in the sense of a referral from primary to secondary care) and therefore had become more involved in the efforts of prescription, compliance and social services referrals. Nevertheless

an effect was demonstrated.

There were ethical concerns in that some patients were receiving the study nurse's time and others were not. But there were no data to demonstrate that the intervention would be beneficial, and those randomised to the non-intervention group were receiving no less than they could expect from standard primary care practice, i.e. all options, including referral to secondary care services were open to the general practitioners. Also, at the end of the three month study the management plans of the non-intervention group were sent to the general practitioners so that they could implement them if they so wished.

A further ethical concern was the use of a community nurse to manage these patients. It must be stressed that i) all patients had been fully assessed by a research psychiatrist, ii) the multidisciplinary team always included a consultant psychiatrist, iii) that clinical responsibility remained with the general practitioners and all activity took part with their prior knowledge and agreement, iv) the safety and welfare of patients took precedence at all times during the study.

9.2.7 Study nurse

It could be argued that a study nurse would be atypical, would be particularly motivated, and thus achieved an effect through extraordinary effort and

energy. This cannot be disputed and, therefore, the findings need replication.

9.2.8 Response rate and "drop-out"

96/112 (86%) of those screened as cases of probable pervasive depression (DPDS cases) on the short-CARE were recruited into the study. This can be considered a good response rate, and the measures available on the "missing" subjects were not statistically significantly different from those entered.

Ten subjects were lost to follow-up from the control side (eight refused and two died) and four were lost from the intervention group (one died, one was too ill and two refused). The initial data on these cases were not statistically significantly different from the cases that completed the study but it remains theoretically possible to argue that "drop-out" could have affected the outcome results.

9.2.9 Interpretation

It could be argued that the differences in depression scores at three-months were no more than non-specific effects due to entry into a trial (and therefore the belief that someone was interested in their problems), a "bolstering" of lonely, unhappy older people by the study nurse contrasted to a degree of "let down" among the non-intervention group, or a

non-specific "befriending" activity by the study nurse. The analyses, however, showed no specific effect upon outcome on those subjects living alone nor those with reported disability. Further, no relationship was shown between improvement on the depression scale and the time spent by the nurse with the patient nor the number of visits made. Secondly, the "acute" subjects among the non-intervention group improved as well as those in the intervention group. Therefore, a differential "let down" effect upon the chronically depressed would have to be postulated. Thirdly, intervention was more effective for subjects reaching GMS case level depression than it was for those identified using the wider criteria of "probable pervasive depression", the latter group could be argued to contain more people with dysphoria, perhaps secondary to adverse circumstances and responsive to social interventions.

9.3 Outcome results

Despite all of the above it was discovered that:
(i) In the intervention group but not the control group the mean DPDS score fell from a level above the cut-point to one below it at three months.
(ii) The differences in three month DPDS scores between intervention and non-intervention groups were

significant in statistical terms, and that this significance was increased if only those cases that were GMS cases at entry were followed up.
(iii) Differences were also clear, using GMS criteria, if the outcome was expressed as changes in proportion of "case"/ "non-case".

Comparing the results in this study (50% of the intervened GMS cases and 70% of the non-intervened GMS cases remained as cases after three months) with naturalistic studies reported earlier, it is clear that the amount of improvement from intervention reported here is greater. Copeland et al. (1992) discovered that at three years 30.8% of GMS cases remained, while Kennedy et al. (1990) found 46% of their cases still depressed at two years. These results suggest certain possibilities: a) that within a depressed cohort there is a sub-group who improve relatively rapidly and that a further sub-group remain chronically unwell, b) that the natural history of some depression may be to swing fairly quickly from caseness to non-caseness only to return again. The outcome difference between intervention and non-intervention groups in this study was primarily a product of the fact that subjects who were also cases in 1988 (51% of the cohort) did not improve unless they received intervention.

It must be remembered that the majority of subjects did not receive antidepressants. In a recent

placebo-controlled trial of a new antidepressant in younger adults with DSM-IIIR major depression (Schweizer et al.1991), 68% of intervention subjects and 31% of control subjects showed marked-moderate improvement at six weeks. Cohn et al. (1990) in their comparison of two antidepressants in older subjects demonstrated a 70% improvement at six weeks. Both results indicate that if greater compliance with antidepressants had been obtained then the differences in outcome may have been even greater.

(iv) A secondary analysis indicated the study nurse had a greater effect on the "old" cases; the non-intervened "old" cases showed little change over the three-month period. This finding was still demonstrated despite the fact that fewer old cases were randomised to the intervention group (20) than the control group (29). An even distribution might thus have produced a more marked difference in the whole group analyses.

The specific improvement among the old cases might reflect perpetuating factors such as major life difficulties (Brown and Harris 1978) or abnormal grief reactions in those who were also cases in 1988. Thus, the personal work such as bereavement counselling or help in developing coping strategies may have been important factors leading to the resolution of a chronic depressive state. Another explanation could be either a genetic or acquired predisposition to

chronicity of depression but it would then be difficult to explain how a short psychosocial intervention may lead to improvement of symptoms.
(v) The analysis of change in depression score for the "old"/nonintervention group indicated that this paucity of change was not just limited to those who reported serious pain. Thus although physical illness is a recognised indicator of poor prognosis (Baldwin and Jolley 1986, Kennedy et al. 1990), it did not appear to be the only perpetuator.

9.4 Associated findings

9.4.1 Comorbidity

Anxiety symptoms were associated with depression in 95% of cases, a very high level reflecting the well recognised clinical finding of agitation within depression among older people. The infrequency of organic features (8%) indicated that depression among older people in the community involves less cognitive disability than the 10-20% substantial cognitive impairment observed in hospital samples (Reynolds et al.1988). The infrequency of hypochondriacal symptoms (5%) and the large numbers of cases with concurrent physical illnesses suggested that, although somatic symptoms may be common in depression they are likely to reflect real illness. Again hypochondriacal preoccupation appeared to be less than that seen in

secondary services (Kramer-Ginsberg et al 1989).

Selection processes which could conceivably be operating are i) that general practitioners refer on patients with more severe depression and it is the severity of depression that is associated with impaired cognitive performance, ii) that general practitioners refer patients with mixed pictures of depression and cognitive impairment because of diagnostic and management difficulties, iii) that general practitioners associate "minor" psychiatric illnesses with physical morbidity and selectively manage or refer those who are physically well; those with somatic symptoms who "fail" the physical test may be selectively referred and "understandability" leads to lack of referral.

9.4.2 DSM-IIIR diagnoses

The estimated prevalence of DSMIIIR major depression was three percent and a rate higher than the levels reported in the literature (Weissman et al. 1985). In addition to the methodological differences mentioned above, in this study those with physical illness were not excluded. Indeed if they had been excluded, from the evidence of self-report and drug prescription, only about a quarter of the sample would have remained. If they were excluded just on the basis of symptoms of pain, then two-thirds would have remained. The question as to what extent symptoms of

physical illness confound the diagnosis of clinically relevant depression among older people remains unclear and requires further investigation. The author agrees with the suggestions by Berkman et al. (1986) that much clinically relevant depression may be missed because clinicians and research investigators believe that physical illness is obscuring their attempts to define the severity of depression.

9.4.3 Psychiatric service contact.

4/96 (4%) were currently known to the psychiatric services. With such small numbers, it was not possible to obtain any indication as to the factors associated with psychiatric service contact. This lack of contact may result from the stigma associated with psychiatric services particularly among this age group, and the "understandability" of depression in older, physically ill people prevalent among health care professionals. The image of secondary care services can be that of care for patients with dementia or those who are suicidal or suffering from psychosis. The psychiatry of old age is a relatively new speciality and is only beginning to establish itself in many parts of the country. Even where it is well established, such as in the area of investigation in this study, it may not be clear to potential referrers exactly what resources may be available and the type of patients who may benefit. Better links between primary and secondary

care are required but this does not necessarily have to imply more referrals to the secondary care services. Most depression can be managed in the primary care setting with adequate education and supervision of primary care workers.

9.4.4 Specific treatment and primary care contact.

At onset, only 13/96 (14%) were receiving antidepressant medication and 5/96 (5%) were receiving psychotherapy or counselling. 23/96 (24%) were taking hypnotics while 40/96 (42%) were receiving regular prescriptions for some other medication from their general practitioner. Only 20/96 (21%) were not receiving some form of regular medication i.e. were not in regular contact with the primary care service. These low levels of specific managements for depression associated with a high level of contact with primary care services are similar to findings from other studies (Waxman et al.1983, Livingston et al 1990b). Primary care management of depression among older people currently appears to be focused on medication, not always antidepressants. This lack of antidepressant prescribing partially reflects a lack of accurate diagnosis on the part of the general practitioners but probably too, worries about potential side effects of the medications concerned, by doctors and patients. The latter concern was shown in this study. There is almost a complete lack of

availability of counselling and psychotherapy interventions in primary care for older depressed people, perhaps reflecting a lack of resources (people and time) but also reflecting some of the negative attitudes towards depressed older people discussed above.

9.4.5 Physical illness

34/96 (36%) reported one physical illness, 49/96 (51%) reported two or more physical illnesses, and 13/96 (14%) reported to be physically well. This high level of physical morbidity associated with depression is in agreement with recent work (Kennedy 1989) and supports the need for multifaceted interventions. Although reported physical illness does not appear to be associated with severity of depression, reported difficulty with mobility and reported serious pain tend to be more prevalent among the more severely depressed, particularly GMS cases. An increased rate of consumption of medication for physical illness is significantly associated with reported impaired mobility, reported serious pain and greater depressive morbidity.

The reporting of serious pain may genuinely reflect an increased severity of painful ailments leading to severity and chronicity of mood state. Alternatively there may be an interaction between a more severe depressed mood with physical illness

leading to increased reporting of physical symptoms. The trend for a greater number of medical conditions and an increase in tablet taking for physical illness among the subgroups reporting more pain indicates that the former may well be the case. The "old" cases (who appeared to require intervention in order to improve) reported more serious physical pain than "new" cases (who improved without the need for intervention). Good outcome though appeared to occur independently of reported pain; old cases with reported pain in the intervention group did improve and old cases in the nonintervention group who did not improve included those who did not report serious pain.

9.4.6 "Old" cases compared with "new" cases

49/96 (51%) were also short-CARE depression diagnostic scale (DPDS) cases in 1988 and were called "old" cases. They had higher levels of depression and anxiety at time of entry into the study compared with the "new" cases, but were otherwise similar in terms of GMS determined symptomatology. In terms of DSM-IIIR diagnoses there were more subjects classified as dysthymia among the "old" cases (21 versus 11) but also more major depression (13 versus 8). Thus the "old" cases seemed to represent a "cleaner" sample of depression with fewer other diagnoses (6 versus 13) as well as greater chronicity. That a larger proportion of "old" cases reported a family history of depression

is probably a reflection of the increased number of people with dysthymia- over a third of those classified as dysthymia reported a close relative as suffering from depression.

9.4.7 The nature of counselling by the nurse

It is difficult to be precise as to the exact nature of the face to face work performed by the study nurse. The detailed diary which was kept gave clues as to some of its content. Psychological intervention was accepted by all subjects. The multidisciplinary team request was for symptom control/behavioural work in 34%, relationship counselling in 28% and bereavement work in 15%. Included in this it is likely that there was a degree of problem-solving work (Catalan et al 1991) which has been demonstrated to be effective in reducing depressive symptomatology among younger adults in the primary care setting. Research work in this area among older people is sparse. Thompson et al (1987) utilised formal cognitive-behaviour therapy and brief-focused therapy to achieve improvement in their depressed older subjects. The study nurse had no formal training in either of these areas.

9.5 Implications and generalisability

The study has demonstrated a substantial untreated psychiatric morbidity among older people in the community. It may have been more appropriate for

the management interventions to have been devised by a primary care team, however the approach has been to harness the knowledge and skills of the secondary care team in a consultative capacity to optimise the efficacy of intervention. It was not possible to implement all aspects of the intervention, for some patients do not wish to begin anti-depressant medication or to attend a day centre. It is therefore possible that these interventions are not relevant for the type of depressed subjects living at home, who would not see themselves as psychiatrically ill. It could also reflect a more general reluctance on behalf of people of this age to start medication and to accept social changes. Nevertheless, despite the lack of success in these two areas, a most important result did emerge - that the mental state of older people who were depressed could be improved over a three month period with limited intervention by a nurse, and the benefit appeared to be associated with a specific nursing activity in counselling and behavioural work.

This finding, if replicated, must have important implications for primary care. But who could carry out such work with older depressed patients? The role could, in theory, be taken up by the specialist community psychiatric nursing services, but as discussed earlier, the small number of such nurses devoted to work with older people and the large number of potential patients, precludes this. It is

possible, perhaps, that a practice nurse or health visitor could be trained to carry out such work. Their skills in depression recognition and management could be developed, indeed, the idea of career practice nurse specialists in the mental health of older people is not inconceivable. The other implication for the treatment of depression in older people that the study has shown is that a treatment approach dominated by a widespread use of antidepressants is unlikely to succeed at the moment. However, the results do point to a substantial benefit from non-pharmacological interventions.

CHAPTER 10. Conclusions and suggestions for the future.

10.1 Conclusions resulting from testing study hypotheses

1. It is clear from the results that the majority of older people in the community with clinical depression do not receive specific treatment for this condition. Only 14% were receiving antidepressants and 5% counselling or psychotherapy.

2. The clinical profiles in 1990 of those also recorded as depressed in 1988 showed greater levels of depression and anxiety, with more cases diagnosed as dysthymia and fewer not meeting caseness for depression when compared to those "newly" depressed in 1990.

3. The subjects identified as "old" depression were more likely to be in receipt of antidepressants for their depression than the "newly" depressed, although this did not reach statistical significance.

4. The majority of cases presented to the old-age psychiatry multidisciplinary team were deemed to require multifaceted interventions as opposed to singular interventions.

5. The number of recommended interventions put into effect over the three month period varied according to the type of intervention suggested. The more didactic measures such as taking antidepressants and attending a day centre or luncheon club to relieve isolation and loneliness met with greatest resistance from subjects. The interventions that required less

action by the depressed subjects such as receiving counselling within their own homes met with complete realisation within the time period.

6. The management plans as stated could not be put entirely into effect and therefore it is incorrect to state that they were able to improve the mental state of depressed older people above and beyond that of the controls over the three month period. The study nurse intervention that was possible to implement did bring about such an improvement. Thus partial management plan activity brought about significant improvement and it is possible that with different approaches to intervention there could be a fuller realisation of suggested interventions and potentially greater improvements.

7. The hypothesis that "old" depressed subjects would not respond as well to intervention over the three month period has not been borne out in this study. It was because of this concern that we ensured that there were equal numbers of "old" and "new" cases of depression on each side of the case control study. Our finding was that "new" cases did well in terms of diminishing depression scores whether they were seen by the study nurse or not, whereas "old" cases remained unaltered in their depression score unless the study nurse took some action.

10.2 Suggestions for action and further research

(a) Actions

There needs to be:

1) Improved recognition of depression in older people by general practitioners and the rest of primary care team and this may be brought about by i) education of primary care staff about depression in older people, ii) education of older people about depression and the possible actions they may take (empowerment), iii) the use of screening instruments for depression, iv) the development of interviewing skills (with or without a semistructured interview).

It is only with the recognition of depression and the realisation that there are effective management strategies that the large hidden morbidity can be attacked. Indeed an argument could be made that the demonstration of effective management strategies for depressed older adults is the way forward to improve recognition. If general practitioners were to be convinced that quality of life could be improved with a reasonable degree of intervention then the recognition of the condition would be deemed worthwhile. This may also be an important way of reducing suicides within the older age group, as the small amount of research into suicide in older people indicates that depression is an important antecedent (Barraclough 1974). At the same time older people need to be engaged into the treatment of psychiatric

conditions and enabled to become "psychologisers" as opposed to "somatisers" (Bridges at al.1991).

2) The development of skills by primary care workers to ensure compliance and adequate dosage of antidepressants for older people when they are indicated. This may only be possible when professionals know which older people are more likely to benefit from antidepressants, and that this potential benefit outweighs the risks of side effects or toxic drug interactions (see further research).

3) An approach so that the management of depression is seen as a multifaceted problem-not just antidepresssants or nothing. That small improvements in physical health, social situation or psychological health may bring about or enhance psychiatric benefits.

4) The utilisation of primary care workers other than the general practitioner to identify the relevant problems and to care manage the interventions required under general practitioner supervision.

5) Closer liaison between secondary care old age psychiatry teams and the primary care teams to facilitate the above actions.

(b) Research

There needs to be:

1) A longer term follow-up to this study to discover if the interventions made bring about any

sustained effect beyond the three months.

2) Replication of the study with the knowledge of the difficulties encountered. The secondary care team could take the lead and receive patients as referrals and manage them, or, more realistically given the numbers involved, the study could be wholly primary care-based using training received from secondary care workers to develop primary care workers' skills. A "befriending" intervention could be examined for its effect on depression levels.

3) A review of psychiatric taxonomy in the light that older people with depression not classifiable as major depressive episode (having significant depressive symptoms) benefit from clinical intervention. What is classification for if not partly to relate to us which individuals may benefit from treatment? It may be possible by future intervention studies to elucidate further useful classifications of depressive symptomatology in older people which respond to specific interventions e.g. bereavement related or physical illness related.

4) An exploration of the criteria for antidepressant prescription within the primary care setting and the difficulties relating to older people refusing such medication and their compliance once it is prescibed.

Hollyman et al. (1988) discovered in younger adults that milder cases of depression may still

benefit from the prescription of antidepressants.

An associated issue is the relative benefit long term antidepressants may bring depressed older adults. Current research indicates that continuation of tricyclic therapy for patients with DSM-IIIR major depression can bring benefit in terms of reduced rate of relapse for upto two years (OADIG 1993).

5) An examination of the relationship between grief and depression within this age group. What is normal grief and when does it become abnormal? What interventions may specifically help and when may they be of most benefit?

This is an extremely difficult area to research but the primary care setting would seem to be an ideal place to start such studies.

6) The development of a psychotherapeutic intervention that is specifically useful for depresssed older people within the primary care setting and an assessment as to whether this can be utilised by primary care workers to beneficial effect? Such interventions have been described and found to be useful for younger adults (Catalan et al. 1991).

7) Further research into the association between physical illness, disability, depression and effect of intervention within the primary care setting. This is a particularly complex area where the roles of antidepressants, nonpsychotropic medication and psychological interventions are unclear. Work with

younger adults suffering from cancer (Greer et al. 1992) suggests a potential role for cognitive-behavioural work, and open studies in older people indicate benefit from antidepressants (Evans et al. 1992).

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APPENDIX 1.

DEPRESSION DIAGNOSTIC SCALE (DPDS)

	Topic	Points	
1	Admits to worrying without probing	1	
2	Worries about everything	1	
3	Sad or depressed past month	1	
4	Lasting depression	1	
5	Depression worst in morning	1	
6	Has felt life isn't worth living	1	
7	Has cried	1	
8	Pessimistic about future	1	
9	Feels future is bleak	1	
10	Wished to be dead - rejects suicide	1	
11	Suicidal thoughts or attempts	1	
12	Sleep disorder due to moods, tension	1	
13	Awakes early or tired	1	
14	Restless	1	
15	Describes headaches	1	
16	Almost nothing enjoyed	1	
17	Not very happy at all	1	
18	Often feels lonely	1	
			_____
	Maximum points:	18	

APPENDIX 2.

TO DEMONSTRATE THE COMORBIDITY OF PSYCHIATRIC SYMPTOMS AMONG SCREENED CASES OF PROBABLE PERVASIVE DEPRESSION IN THE COMMUNITY.

DEPNO	GMSDG	GMSDP	GMSO	SRP	GMSMO	GMSOB	GMSHC	GMSPH	GMSAN
1	dn3	3	0	0	0	0	0	2	2
2	dn2	2	0	0	0	0	0	0	1
3	hc3	2	0	0	0	0	3	0	2
4	dn2	2	0	0	0	1	0	0	2
5	dn3	3	0	0	0	0	1	0	2
6	an3	2	0	0	0	0	0	0	3
7	dp3	5	0	0	0	3	0	0	4
8	dn2	2	0	0	0	0	0	0	2
9	hc3	2	0	0	0	2	3	0	2
10	dn2	2	0	0	0	0	0	0	1
11	dn3	3	0	0	0	0	0	0	0
12	ob2	0	0	0	0	2	0	0	0
13	dn3	3	0	0	0	0	0	0	2
14	dn4	4	0	0	0	2	0	2	2
15	dn4	4	0	0	0	0	0	2	3
16	dn3	3	0	0	0	0	0	0	2
17	dn3	3	0	0	0	0	0	0	2
18	dn3	3	0	0	0	0	0	2	2
19	dn2	2	0	0	0	0	0	0	2
20	dn4	4	1	0	0	0	3	0	1
21	ph2	0	0	0	0	0	0	2	1
22	dp4	6	0	0	0	0	0	0	2
23	dn1	1	0	0	0	0	0	0	1

DEPNO	GMSDG	GMSDP	GMSO	SRP	GMSMO	GMSOB	GMSHC	GMSPH	GMSAN
24	dp4	6	0	0	0	0	0	0	3
25	o3	3	3	0	0	0	0	0	1
26	dn4	4	0	0	0	0	0	0	2
27	dn1	1	0	0	0	0	0	0	2
28	dn4	4	0	0	0	0	0	0	2
29	dp3	5	0	0	0	0	0	0	1
30	dn2	2	0	0	0	0	0	0	2
31	dp3	5	0	0	0	1	0	0	2
32	dn3	3	0	0	0	0	0	0	4
33	dn3	3	0	0	0	0	0	0	2
34	dn3	3	0	0	0	0	0	0	2
35	dn3	3	0	0	0	0	0	0	2
36	dn4	4	0	0	0	0	0	2	2
37	dn3	3	0	0	0	0	0	0	1
38	dn3	3	0	0	0	0	3	0	2
39	dn3	3	0	0	0	0	0	2	3
40	dn4	4	0	0	0	0	0	0	2
41	dn3	3	0	0	0	0	0	0	2
42	o2	2	2	0	0	0	0	0	2
43	s3	5	0	3	1	0	3	0	2
44	o5	0	5	0	0	0	0	0	0
45	dn4	4	0	0	0	0	0	0	2
46	o4	3	4	0	0	0	0	0	0
47	dn3	3	0	0	0	0	0	2	2
48	dn4	4	0	0	0	0	0	0	2
49	dp3	5	0	0	0	0	0	0	4
50	dn2	2	0	0	0	0	0	0	1

DEPNO	GMSDG	GMSDP	GMSO	SRP	GMSMO	GMSOB	GMSHC	GMSPH	GMSAN
51	dn4	4	0	0	0	2	0	0	2
52	dn3	3	0	0	0	0	0	0	2
53	dn4	4	0	0	0	0	1	0	0
54	o4	2	4	0	0	0	0	0	0
55	dn3	3	0	0	0	0	0	0	2
56	an3	2	0	0	0	0	0	0	3
57	dp3	5	0	0	0	0	0	0	1
58	dn3	3	0	0	0	0	0	0	2
59	dp3	5	0	0	0	0	0	0	4
60	dn3	3	0	0	0	0	0	0	2
61	dn4	4	0	0	0	0	0	0	2
62	o3	0	3	0	0	0	0	0	0
63	dn4	4	0	0	0	0	0	2	2
64	ph2	1	0	0	0	0	0	2	2
65	dn4	4	2	0	0	0	0	0	2
66	ph3	2	0	0	0	0	0	3	3
67	dn4	4	0	0	0	0	1	0	4
68	dn3	3	0	0	0	2	0	0	2
69	dn2	2	0	0	0	0	0	0	2
70	dn2	2	0	0	0	0	0	0	0
71	o3	4	3	0	0	0	0	0	0
72	dp3	5	0	0	0	0	0	0	1
73	dn3	3	0	0	0	0	0	2	2
74	dp3	5	0	2	0	0	0	0	1
75	s3	3	0	3	0	0	3	0	2
76	dp3	5	0	0	0	0	0	0	2
77	o3	0	3	0	0	0	0	0	2

DEPNO	GMSDG	GMSDP	GMSO	SRP	GMSMO	GMSOB	GMSHC	GMSPH	GMSAN
78	dp3	5	0	0	0	0	0	0	3
79	o3	1	3	0	0	0	0	0	2
80	dp3	5	0	0	0	0	0	0	4
81	dn3	3	0	0	0	0	0	0	2
82	dn4	4	0	0	0	0	0	2	3
83	an2	0	0	0	0	0	0	0	2
84	dn3	3	1	0	0	0	0	0	2
85	dn4	4	0	0	0	0	0	0	0
86	dn1	1	0	0	0	0	0	0	1
87	o2	0	2	0	0	0	0	0	0
88	dn3	3	0	0	0	0	0	0	1
89	dn3	3	0	0	0	0	0	0	2
90	dp3	5	1	0	0	0	0	0	4
91	s3	6	1	3	0	0	0	0	5
92	dn3	3	0	0	0	0	0	0	1
93	dn4	4	0	0	0	0	3	0	3
94	o3	4	3	0	0	0	0	0	2
95	an2	0	0	0	0	0	0	0	2
96	dn4	4	1	0	0	0	0	0	2

DEPNO = DEPRESSION STUDY NUMBER
GMSDG = GERIATRIC MENTAL STATE DIAGNOSTIC SCORE
GMSDP=GERIATRIC MENTAL STATE DEPRESSION SCALE SCORE
GMSO=GERIATRIC MENTAL STATE ORGANIC SCALE SCORE
SRP=GERIATRIC MENTAL STATE SCHIZOPHRENIA/PARANOID SCALE SCORE
GMSMO=GERIATRIC MENTAL STATE MANIA SCALE SCORE
GMSOB=GERIATRIC MENTAL STATE OBSESSIONAL SCALE SCORE
GMSHC=GERIATRIC MENTAL STATE HYPOCHONDRIACAL SCALE SCORE
GMSPH=GERIATRIC MENTAL STATE PHOBIA SCALE SCORE
GMSAN=GERIATRIC MENTAL STATE ANXIETY SCALE SCORE.