

The epidemiology and presentation of depression in the elderly

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Abstract

The epidemiology of depression in late life encompasses the distribution of the illness among the elderly and the factors influencing that distribution. This holistic approach has as its main task that of distinguishing the worried well from the serious psychiatric disorder. The assessment of the epidemiology of depression is fraught with problems and covers the aspects of case identification, their distribution, historical and aetiological studies, as well as the utilization of health services. To date, some key diagnostic categories have been identified, as well as some that still need to find a niche in the psychiatric nomenclature. In many elderly persons the presentation of depression varies considerably, covering a broad spectrum between a state of apparent wellbeing to that of marked psychological and/or physical symptoms. Researchers have thus put forward different diagnostic groupings and prevalence rates, based on their assessment of mood states, functional disability, course of illness and prognosis. Discrepancies in the results of these studies among similar communities have further been compounded by the use of different instruments and approaches to depression. There is a strong need for consensus among researchers in this field.

The epidemiology of depression in late life is the study of the distribution of the illness among the elderly and those factors that influence this distribution. It is primarily a way of thinking about health and disease beyond the traditional clinical approach, and is faced with the task of distinguishing the worried well from the serious psychiatric disorder (Hamilton, 1990; Morris, 1975; Blazer, 1989a).

Using the model described by Morris (1975) (cf. Blazer, 1989a), the epidemiology and its uses pertaining to a given disorder will be described under the following categories:

- (1) The identification of cases (e.g. Can the symptoms of depression in the elderly readily be identified in the community as well as in the clinical population?)
- (2) The distribution of depression in the population (e.g. What is the prevalence and/or incidence of depression in the elderly?)
- (3) The historical trend of the illness among the elderly (e.g. Has the incidence of suicide increased, decreased, or remained the same among the elderly over the past 50 years?)
- (4) The aetiology of depression in late life (e.g. Are social factors more prevalent in late life, given less potential for genetic influence?)

- (5) The use of psychiatric and other mental health services by the elderly (e.g. Do psychiatrically impaired elderly in the community use psychiatric services?)

Case identification

The methodological problems inherent in the assessment of depression in epidemiological studies of the elderly have been summarized as follows (cf. Katona & Bell, 1990):

- (1) *The selection of subjects to be studied.* Hospital-based samples are particularly highly selective and unrepresentative, while community samples may not always be practicable. If the proportion of subjects refusing to participate in a study is high, bias will result in the sample actually examined.
- (2) *The definition and detection of depression within the population being studied.* This calls *inter alia* for the operationalization of the criteria of individual symptoms and the standardization of the interviewing techniques.
- (3) *The problem of selection of instruments for detecting cases.* The most widely used techniques are questionnaires, semistructured interviews and unstructured psychiatric interviews. It is clearly necessary that measures used in the study of depression in the elderly are both valid and reliable in the specific population being examined.
- (4) *The clinical presentation of depression in old age.* This will be discussed below.

Though most epidemiologists and clinicians agree on the core symptoms of psychiatric disorders throughout the life cycle, the absolute distinction between a case and a non-case is not easily established. Furthermore, many of the symptoms and signs of late-life depression may be ubiquitous with the ageing process, thus blurring the distinction between cases (where medical attention is required) and non-cases (Blazer, 1991). Most clinicians would see the process of diagnosis as a reflection of underlying reality or simply as "diagnosis is prognosis"; others again, would prefer the emphasis to be on function (Blazer, 1989a). Improved function should result from remission of the disease, but this is not necessarily so in that social or interpersonal impairment may persist. Thus, while the categorical approach to a diagnosis consisting of a standard clinical measure such as Axis I of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) (American Psychiatric Association, 1987) is favoured, the family may perceive function as the critical element. This is because they do not view symptom remission alone, but rather a return

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to social involvement and improved life satisfaction as an essential marker of improvement (Blazer, 1989b).

Further, many of the standardized interviews or questionnaires were not designed specifically for use among the elderly. The above-mentioned methodological problems have only recently been addressed and hence results of different studies in the past vary widely (Katona, 1990).

The more reliable methods indicate the prevalence of depression in the elderly at about 18 % in women and 12 % in men, while other studies will vary with an overall prevalence rate of 34,5 % on the one hand, and as low as 2,7 % on the other hand, in similar populations (Katona, 1990). A South African study of 139 non-institutionalized coloured persons, aged 65 years and over, using the Present State Examination (CATEGO) programme, found the prevalence of depression to be 16,5 % (Ben-Arie, Swartz, Teggins & Elk, 1983).

The distribution of depression

This category encompasses characteristics such as age, sex, race, occupation and social class. Depression has been shown to be as prevalent among the elderly as the middle-aged (Katona, 1990). A large study in New Zealand showed a prevalence of depression in elderly women of 14,2 %, against 7,7 % over the whole population (Walton, Romans-Clarkson, Mullen *et al.*, 1990). The sex difference in prevalence between men and women is maintained throughout life, women having rates approximately 50 % above those for men. However the peak prevalence for women falls in the middle years, whereas studies suggest that rates for men rise throughout the life span (Murphy, 1989). When considering major depression across the life span, the ratio of 2:1 for females to males persists into late life. However there is no evidence for a genetic predisposition, i.e. a sex-linked mode of inheritance, that would favour females in the onset of major depression (Blazer, 1989b).

Depression is associated with bereavement, being widowed and single, or isolated (Katona, 1990; Wilson, 1991). In most studies depressed mood is more common in Alzheimer's disease subjects than in healthy elderly controls (Katona, 1990). Regarding institutions, it is increasingly recognized that mentally alert residents and those with mild dementias have a markedly higher rate of depression than those living at home in the community. While it is possible that the drab quality of life provided in some residential homes is one reason for the high prevalence, it is also possible that chronically depressed elderly people are preferentially selected into residential care as a result of their dependence on others and inability to cope on their own (Murphy, 1989). This is borne out in a South African study that analysed the psychiatric reasons for admission of elderly persons to places of care. Compared with psychiatric hospital admissions, people admitted to homes for the aged were significantly older and had more physical illness and socio-economic problems than old persons living in the community (Gillis, Elk, Trichard *et al.*, 1982).

Both health and social support play an additive and an interactive role in the onset of depressive symptoms. In one study, 39 % of the depressed subjects but only 26 % of the control subjects had significant physical health problems (Murphy, 1982). A weak support network in the presence of poor physical health placed older persons at a particular risk for the onset of depressive symptoms. However it must be recognized that depressive symptoms do not necessarily indicate the onset of a major depressive episode (Pfeifer & Murrell, 1986; Wilson & Copeland, 1990). Specific physical problems associated with depression have been described as breathlessness, arthritis, visual impairment and limb paralysis

(Lindesay, 1990). While the relationship between stressful life events and the onset of major depression across the life cycle has been established in a number of cross-sectional studies (Lloyd, 1980), the relationship weakens when persons are studied longitudinally (Pfeifer & Murrell, 1986). In a recent South African survey of health aspects of 365 black elderly persons, using the Depression Homogenous Scale of the Short CARE questionnaire, it was found that 21 % of the respondents in Langa (an established township) and 66 % of the respondents in Khayelitsha (a newly-settled township) had depressive symptoms severe enough to warrant further investigation (Barnes & Yach, 1991; Gillis, Welman, Koch & Joyi, 1991). (Although the depressive symptoms in 66 % of this sample were not necessarily severe enough to be classified as frank disorder, 44 % of the sample would have been treated if they had been seen by a psychiatrist.) Reasons for this discrepancy given by the authors included the effects of urbanization on the squatting community of Khayelitsha, which was more recently established. The effects were compounded by poor quality housing, overcrowding, a high degree of poverty, greater civil unrest and fewer environmental and welfare services, such as water, electricity and sanitation.

Historical studies

It is important to consider the longitudinal history of disorders. Some disorders, such as tuberculosis, are known to wax and wane in incidence over a period of time. New disorders may emerge in a population, such as acquired immune deficiency syndrome (AIDS). Old ones, such as smallpox, are eradicated or disappear naturally (Morris, 1975). Studies of changes in the rates of suicide among older adults during the 20th century illustrate the value of longitudinal studies, despite the methodological problems associated with such studies (Blazer, 1989a).

Suicide rates at any point in time are determined by at least three factors: (i) Age; (ii) generational or cohort effects, and (iii) unique stressors for a particular age group at a particular point in time (i.e. period effects) (Blazer, 1989a). It is well known that suicide rates increase with advancing years, especially in males. Thus, in the early 1980s the elderly accounted for a third of all suicides in the United Kingdom, even though they constituted only 12 % of the total population (Pitt, 1982).

By studying an age group or cohort at set intervals from young adult life to old age, suicide rates and patterns can be mapped on a longitudinal basis for that group. These figures can then be compared with the next age group. Thus an American group of 15 to 24-year-olds in 1908 had a suicide rate of 13,5 per 100 000, in contrast to the 6,3 per 100 000 rate of the next group of the same age in 1923. The 1908 cohort has continued to have relatively higher rates of suicide at every age through life, though both cohorts showed increases in suicide with age. In other words, the 1923 cohort passing through the 80 to 95 years of age window at this time has always had a lower rate of suicide than the preceding 1908 cohort when it passed through the same window. The 1923 cohort when examined cross-sectionally would have a flattened suicide rate. Current cohorts of elderly people appear remarkably protected against severe or clinically diagnosed depressive disorders. This cohort effect may well explain the current relatively low prevalence of depression in late life, as compared with the now much older age group 20 years ago. A much younger cohort, the 1946 or baby-boom cohort, has exhibited higher rates of major depression throughout the life cycle and increased rates of suicide, which has implications for future studies of this nature (Blazer, 1989a,b).

Period effects have been shown to play a role, as postulated by Murphy (1986) citing the occurrence of World War II and

the detoxification of domestic gas in England, for a fall in a cohort analysis of recorded suicides from 1921 to 1980. Placing one's head in a gas oven containing large amounts of carbon monoxide was a common method of suicide, particularly among the middle-aged and the elderly. As domestic gas was converted to a methane-based product in the 1960s, the rate of gas poisoning decreased dramatically in the older age groups. There was a net saving of life, notwithstanding an increase in suicides by other means.

Aetiological studies

Both environmental and genetic causative agents can be identified in population studies; the aetiology of late life depression is undoubtedly multifactorial (Blazer, 1989a,b). The changing roles and circumstances of older adults are considered by many investigators to stress the elderly and, therefore, contribute to the onset of psychiatric disorders and cognitive difficulties. Thus, as discussed above, social factors including widowhood, divorce, separation and poverty were related to depressive symptomatology in the community (Blazer, 1989a; Katona, 1990; Kennedy, Kelman & Thomas *et al.*, 1989).

Nevertheless, the mitigating effect of social support, the expectancy of the event, the occurrence and perception of the event, and the perceived importance of the event may all contribute to the impact of the environmental stress upon the older adult (Murphy, 1989).

Twin and family studies, along with recent studies of molecular genetics, provide strong evidence for a heritable contribution to the aetiology of major depression and bipolar disorder. However the evidence suggests that the genetic contribution to unipolar depression in late life is weaker than at earlier stages of the life cycle. Thus the risk for immediate relatives of patients with onset of depression that occurred later than age 50 is 8.3 %, compared with 20.1 % for relatives of patients where the onset was before the age of 50 (Blazer, 1989b).

Other contributing factors to late life depression may be selective changes in the activity and metabolism of neurotransmitters. Dysregulation of the hypothalamic-pituitary-adrenal axis is also thought to contribute to a predisposition for depression, as is dysregulation of the thyroid axis and the release of growth hormone. A relatively new putative contributor to the aetiology of depressive disorder is desynchronization of circadian rhythms (Blazer, 1989b).

Health service utilization

Though the elderly are less likely to use community-based psychiatric services than any other age group, they are more likely to use psychotropic medication. Most investigators conclude that the likeliest source of care for older individuals suffering from emotional problems is their primary care giver within the context of a visit made for physical medical problems (Blazer, 1989a).

Of value are community surveys that collect data on rates of impairment, need for services, perceived needs or demands for services, and the current use of services. This allows authorities to evaluate effective treatment and preventative programmes. This is especially relevant to the care of the elderly, who tend to be isolated, with masked psychiatric impairment and diminished abilities at voicing their mental health needs (Blazer, 1989a; Ben-Arie, Swartz, Teggin & Elk, 1983; Gillis, Elk, Trichard *et al.*, 1982).

The presentation of depression in the elderly

Criteria

Depressed mood as presenting symptom has been rated as low as 5 % in some studies (Katona, 1990), as it is often overshadowed by somatic complaints, delusional beliefs, odd behavioural disturbances or a picture resembling dementia. Frequently the picture will be that of excess worry or disease (Gillis & Zabow, 1982).

Four clinical syndromes are listed under the affective disorders in DSM-III-R, which are relevant to the clinical manifestations of depression in the elderly. They are (i) bipolar disorder (manic, depressed and mixed); (ii) major depression (single episode, recurrent, with or without melancholia, with or without psychotic features); (iii) dysthymia (depressive neurosis), and (iv) atypical depression (American Psychiatric Association, 1987; Blazer, 1989b). The syndromes are shown graphically in Table 12 in the DSM-III Training Guide (Webb, DiClemente, Johnstone *et al.*, 1981: 87).

The criteria for a major depressive episode in the DSM-III-R are essentially the following (American Psychiatric Association, 1987): At least four of the following symptoms, including either depressed mood, or loss of interest or pleasure, have been present over a two-week period, denoting a change from previous functioning: depressed mood; loss of interest or pleasure in usual activities; poor appetite with significant weight loss or weight gain; insomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; inappropriate feelings of guilt or worthlessness; difficulties with thinking or concentration and indecisiveness; and ideas of suicide.

Other DSM-III-R disorders manifesting depression include bereavement, adjustment disorder with depressed mood, and the organic mood syndrome. In the latter a specific organic factor, such as a substance (methylidopa), endocrine disease (hypothyroidism), cancer (head of pancreas), viral illness (hepatitis), or structural brain disease (stroke), is considered to be the aetiological agent resulting in depression. Still further psychiatric disorders containing depressive symptomatology as a central component on occasions, are the paranoid disorders, sleep disorders and hypochondriasis (American Psychiatric Association, 1987; Blazer, 1989b).

While community surveys confirm that DSM-III-R major depression is identified among the elderly, when usual case-finding methods are applied across the life cycle (Blazer, 1989), it is the variants of classical major depression among the elderly that cause a problem.

Hence we find community surveys among the elderly reporting a prevalence of only 4.3 % for severe depression and 13.5 % for mild or moderate depression (Katona, 1990; Copeland, Gurland & Dewey, 1987).

Variants of major depressive illness

Two variants of classical major depression that occur among the elderly need to be mentioned. One is seasonal affective disorder, (i) in which the history of depression fulfills the DSM-III-R criteria for major depression; (ii) where there is a history of at least two consecutive years of autumn/winter depressive episodes which remit in spring/summer; and (iii) where either a major psychiatric disorder or a psychosocial explanation to explain the seasonal mood changes is absent (American Psychiatric Association, 1987; Blazer, 1989b). The importance of the disorder lies in that it does not respond to the usual therapy and that the use of tricyclic antidepressants may perpetuate the disorder, or possibly increase the likelihood of rapid cycling. In contrast, lithium carbonate or carbamazepine may be of some benefit in preventing the

cyclic episodes and light therapy may be of value (Blazer, 1989b).

The other disorder is brief recurrent depression, in which the individual suffers full-blown episodes of major depression, but lasting shorter than the stipulated two-week period required by the DSM-III-R, and with cycles occurring on a monthly basis over a period of one year while not coinciding with the onset of menstruation in women (Angst, Merikangas, Scheidegger & Wicki, 1990; Blazer, 1989a).

The significance of this work is that some depressive syndromes which do not meet the criteria for classical major depression may be just as disabling over time as the level of impairment with major depression.

Dysthymia

Dysthymia, literally "ill-humoured", refers to individuals with the disposition to dysphoria (Akiskal, 1990). Dysphoria is defined by the Concise Oxford Dictionary as "a state of unease or discomfort". The classical picture is that of an individual who is habitually gloomy, brooding, overconscientious, incapable of fun and pre-occupied with personal inadequacy (Gillis & Zabow, 1982; Akiskal, 1990).

The recognition of dysthymic disorder as a significant health problem is relatively new to psychiatry. The lifetime prevalence for dysthymia appears to be in the order of 3.1 %; it co-exists with other psychiatric (and often physical) disorders in 70 – 75 % of cases (Keller & Sessa, 1990).

The key characteristics of dysthymia (neurotic depression) as defined by the DSM-III-R (American Psychiatric Association, 1987; Akiskal, 1990) are:

- Depressed mood for at least two years, which is not residual of a major depression.
- Presence, while depressed, of at least two of the following: poor appetite or overeating; insomnia or hypersomnia; low energy or fatigue; low self esteem; poor concentration or indecisiveness; and feelings of hopelessness.
- Persistent or intermittent course with symptom-free periods not exceeding two months.

Further, it is necessary to specify whether the symptoms of dysthymia are *primary* or *secondary* to another mood or physical disorder, and whether these symptoms are of an *early onset* with origins in childhood or adolescence (depressive personality or characterological depression) or of a *late onset* at age 21 or later.

Dysthymia is frequently complicated by major depression in 70 – 90 % of cases (Keller & Sessa, 1990), when it is referred to as double depression. Following the major depressive episode these dysthymics will usually revert to their premorbid status.

Dysthymia may thus both precede and follow a major depressive episode. However DSM-III-R, because of the absence of a six-month symptom-free period following the major depressive episode, would refer to the latter situation as "major depression in partial remission" (American Psychiatric Association, 1987). Notwithstanding, the course of primary depressive illness with late onset (after 40 years of age) can be quite protracted, despite a premorbid history free of depressive manifestations (Akiskal, 1990). (In fact, a first-time major depression in old age is often followed by a dementing illness (Katona, 1990).) During this residual phase, which may linger for months if not years, "characterological" manifestations (a sense of resignation, inhibited communication, rigidity, irritability, or emotional lability) may dominate the clinical picture. The lives of these people are marred by overdedication to work and an inability to enjoy leisure activities; marital conflict may ensue and vegetative

somatic manifestations may occur. There may be concurrent disabling medical illness and a history of excessive alcohol and sedative abuse (Akiskal, 1990).

Good reasons have been put forward for subtyping patients suffering from dysthymia into two groups (Akiskal, 1990; Rihmer, 1990):

- Predominantly affective (subaffective dysthymic)
- Character pathology (character spectrum disorder)

The subaffective dysthymia group accounts for some 10 – 15 % of the "chronic depressive" population and carries a two-third's share between the two subgroups. Essentially this group has a loaded pedigree with a family history of affective illness, with normal childhood but a predominantly depressed personality (introverted, gloomy, pessimistic, self-critical, sceptical, etc.). There may be brief "well" or "active" periods. There is shortened rapid eye movement latency. And there is a favourable response to tricyclic antidepressants, lithium or both (Akiskal, 1990; Rihmer, 1990).

In contrast, the character spectrum disorder group is the equivalent of a personality disorder with a family history of alcohol and drug abuse, or suicide not related to primary affective illness, sociopathy, broken home, onset in early adolescence, intermittent course (with rarely superimposed major depressive episodes), and a poor response to the above treatment modalities (Akiskal, 1990; Rihmer, 1990).

Masked depression

A common cause for diagnostic confusion in the elderly is masked depression. Here physical or emotional (other than depression) symptoms, be they primary or secondary (due to drugs), mask the underlying depression. The broad concept of masked depression is best expressed in tabulated form (Rihmer, 1990). See Table 1.

Table 1

The broad concept of masked depression

Subtype	Level of masking	Source of masking	Clinical consequences
Masked I	Biological	Underlying illness, or interaction of personality	Somatic masking: masked depression Psychogenic pain syndrome Atypical depression Psychic masking: atypical depression A-type personality disorder
Masked II	Social	Patient (self-medication)	Substance abuse
Masked III	Educational	Doctor (misdiagnosis)	Inadequate treatment: anxiolytics, sedatives, etc.

Source: Rihmer, 1990.

Minor depression

Definitions of disorders fitting into the category of minor depression vary. For some the category is loosely defined as those cases not suffering from major depression. Others see the category as analogous to the DSM-III-R category of depressive disorder not otherwise specified: in other words, disorders that do not meet the criteria for major depressive disorder, dysthymia or any other DSM-III-R disorders with

depressed mood. The following studies demonstrate the various forms of minor depression:

- Studies using symptom clusters and grade-of-membership analysis have been conducted on individuals to determine which meet the criteria for a statistically defined "pure type" of depressive syndrome (Blazer, 1991).
- The clinical entity of "minor depression" as defined by Research Diagnostic Criteria was found to be frequent within a primary care setting among both older persons and young adults. The association with physical illness was emphasized. The most common symptoms of minor depression were found to be worry (84 %), blaming oneself (79 %), decreased energy (79 %), everything an effort (68 %), irritability (63 %), disturbed sleep (53 %), crying (53 %), and feelings of hopelessness (53 %) (Oxman, Barrett & Barrett, 1990).
- Another study identified a symptom cluster that emerged almost exclusively in the 60+ age group. The syndrome was associated with physical illness and cognitive difficulties. Although this syndrome was characterized by many depressive symptoms, such as depressed mood for two or more weeks, psychomotor retardation, difficulty concentrating, constipation, and poor perceived health, none of the classic diagnoses of depression were associated with this symptom cluster. Specifically this syndrome did not meet the DSM-III-R criteria for adjustment disorder with depressed mood, namely that the symptoms are clearly associated with a stressful event in one's life and subside within six months. It also did not apply to most persons suffering from less severe symptoms, in that the symptoms were more chronic and did not fit the picture of dysthymia. At present the syndrome would have been classified under the DSM-III-R diagnosis of depressive disorder not otherwise specified, or atypical depression. However the authors felt that "minor depression" would be one way of classifying such subjects (Blazer, 1990; Blazer, Woodbury & Hughes *et al.*, 1989).
- In South Africa, Gillis has presented evidence for distinguishing a clinical entity characterized by dysphoria associated with physical impairment, isolation and socio-economic handicap. Personality factors are believed to play a considerable part in the aetiology of the condition which tends to be refractory to treatment (Gillis & Zabow, 1982).

In an attempt to distinguish between the characteristics of dysphoric individuals, those suffering from depression and normal subjects living in the same circumstances, the following criteria (Gillis & Zabow, 1982) using the scoring systems of the Hamilton Depression Rating Scale and the Life Satisfaction Scale (Neugarten, Havighurst & Tobin, 1961) as reference points were proposed:

- **Dysphoria** – a score of less than 15 points on both the Life Satisfaction Scale and the Hamilton Depression Rating Scale.
- **Depression** – a score of less than 15 points on the Life Satisfaction Scale and a score of more than 15 points on the Hamilton Depression Rating Scale.
- **Control** – a score of more than 15 points on the Life Satisfaction Scale and score of less than 15 points on the Hamilton Depression Rating Scale.

In simplified terms, the dysphoric is unhappy with life but not to the extent where clinical depression is evident. The syndrome of dysphoria as described by Gillis above shares features in common with both dysthymia and minor depression.

Notwithstanding the fact that depression in the elderly adopts numerous guises and requires further understanding, researchers with different instruments and differing views on depression have perpetuated an element of confusion regarding the nomenclature and criteria for the various types of depression. To clarify the situation, within the restrictions of current knowledge, researchers should reach greater consensus in this regard.

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