

Depression among older people in Europe: the EURODEP studies

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The data from nine centres in Europe which had used the Geriatric Mental Scale (GMS) AGE-CAT were analysed to compare prevalence of diagnoses in subjects aged 65 years and over living in the community. Levels of depressive illness were: Iceland 8.8%, Liverpool 10.0%; Zaragoza 10.7%; Dublin 11.9%; Amsterdam 12.0%; Berlin 16.5%; London 17.3%; Verona 18.3% and Munich 23.6%. Taking all levels of depression, five high (Amsterdam, Berlin, Munich, London and Verona) and four low (Dublin, Iceland, Liverpool, Zaragoza) scoring centres were identified. Meta-analysis of all 13,808 subjects yielded a mean level of depression of 12.3% (95% CI 11.8-12.9), 14.1% for women (95% CI 13.5-14.8) and 8.6% for men (95% CI 7.9-9.3). Symptom levels varied between centres: 40% of the total study population in Amsterdam reported depressive mood against only 26% in Zaragoza. To incorporate studies from other centres using other methods for depression identification, the EURO-D scale was developed from 12 items of the GMS and validated against other scales and expert diagnosis. A two factor solution emerged, an 'affective suffering factor' and a 'motivation factor'. The EURO-D scale was applied to 14 population based surveys. Depression score tended to increase with age unlike levels of prevalence of depression. Large between centre differences were evident in levels of depression unexplained by age, gender or marital status. These data show that depressive illness defined as suitable for intervention is common among older people in Europe. Opportunities for effective treatment are almost certainly being lost. Levels of depressive symptoms vary significantly between high and low scoring centres, prompting the next phase of this study, an examination of risk factors in Europe.

Key words: EURODEP, depression, old age, GMS-AGE-CAT, EURO-D

The EURODEP consortium consists of a number of independent community based studies of depression among older people, conducted in centres in Europe which have been brought together to form a Concerted Action Programme under the European Community BIOMED I initiative. In the first studies, EURODEP is trying to answer the questions: how much depression exists among older people in Europe? Does its level vary from place to place? Does the clinical picture differ between populations? Is the level of depression consistent with suicide levels? Is it treated and what are its risk factors?

The increasing proportions of older people in the populations of Europe lent urgency to the need to know their levels of mental illness, of which one of the most prevalent is depression. First, a systematic review of the world literature on community-based studies of the prevalence of depression in later life (aged 55+) was undertaken (1). Thirty-four studies were eligible for inclusion, with a range of prevalence rates for depression of 0.4-35%. They revealed a weighted average for major depression of 1.8% and for minor depression of 9.8%, while all depressive syndromes considered clinically relevant reached 13.5%. A higher rate of prevalence of depression was a consistent finding for women and among older people in poor socio-

economic circumstances. Because of the diversity of measures used, it was not possible in such a survey to make comparisons between individual studies in order to identify areas of high and low depression prevalence. The need for a uniform standardised method was clear.

The aims of the first studies were: a) to study the variation in the prevalence of diagnosable depression among people aged 65 and over living in the community in different centres in Europe using a standardised method; b) to examine core symptoms and clinical profiles across centres: how do they differ? c) to interpret them in relation to existing socio-economic and risk factor variables; and d) the harmonisation of scales of depression to allow other centres to join the consortium for comparing levels of depressed mood by scale score.

METHOD

Formation of the consortium

The original members of the consortium (Study 1) had used the Geriatric Mental State (GMS) AGE-CAT as the principal case finding and diagnostic instrument for their studies: Amsterdam (2); Berlin (3); Dublin (4); Iceland (5); Liverpool (6); London (7); Munich (8); Verona, Italy

(9); Zaragoza, Spain (10). The centres decided to come together and form a Concerted Action, pool their data and thus give added strength to their analyses of risk factors and generate new hypotheses for further studies.

To the original nine GMS AGE-CAT centres, another centre was added with expertise in the technique of 'Experience Sampling' (Maastricht). Five further centres (Study 2) applied to join - Gothenburg, Sweden (11); Antwerp, Belgium (12); Bordeaux, France (13); Oulu, Finland (14); and Amsterdam (15) - which had used other measures. It was decided to try to harmonise their measures of depression with those of the other centres. Under the European Community PECO initiative, an East European centre was added: Tirana, Albania (not reported here).

Characteristics of the centres

Details on the individual centres for Study 1 are reported elsewhere (16). All the centres took random community samples collected between 1990 and 1996, except for Iceland which had a total population birth cohort born 1895-1897 and interviewed in 1983, and Dublin which used a general practitioner complete register. The age range was from 65 upwards for most samples, except Amsterdam (65-84), Berlin (70+), Munich (85+) and Iceland (88-89). Only one centre excluded nursing homes entirely (Verona). Most samples were urban, except Iceland which was mixed rural/urban. Their size varied between 202 in Verona and 5222 in Liverpool. The two samples in Italy and Spain were predominantly catholic. The samples in the UK (London and Liverpool), in Germany (Berlin and Munich), in the Netherlands and in Iceland were predominantly protestant, while the sample in Dublin was catholic.

Measures

The studies were undertaken using the GMS (17,18) community version in approved translation. AGE-CAT (19,20) is a computerised diagnostic algorithm which uses scores on GMS items in stage one for each subject to produce a level of confidence of diagnosis on a scale of 0-4 or 0-5 for each of eight diagnostic syndrome clusters: organic brain syndrome, schizophrenia, mania, depression (psychotic and neurotic), and obsessional, hypochondriacal, phobic and anxiety neuroses. Stage 2 reaches a final differential diagnosis by comparing level for level, recorded as either a diagnostic subcase (confidence levels 1 and 2) or a diagnostic case (confidence levels 3,4 and 5). Thus it allows the identification of comorbid states. Level 3 and above on any diagnostic cluster accords with what psychiatrists would usually recognise as a case for treatment or intervention, if available. Good agreement has been shown between AGE-CAT cases of depression and DSM-III major depressive episode and dysthymia taken together (21,22). In addition to the GMS, most centres collected

risk factor information and seven undertook follow-up of their samples.

Data analysis for the pooled data took place in Liverpool. The Liverpool and Berlin samples were gender and age stratified. The overall prevalence figures for these centres are therefore adjusted using the appropriate weights to take this into account.

STUDY 1A: PREVALENCE OF DEPRESSION IN EUROPEAN CENTRES

Results

Substantial differences in the prevalence of depression were found, with Iceland having the lowest level at 8.8%, followed by Liverpool 10.0%; Zaragoza 10.7%; Dublin 11.9%; Amsterdam 12.0%; Berlin 16.5%; London 17.3%; Verona 18.3% and Munich 23.6%. When all five AGE-CAT depression levels, including both subcases of depression and cases, were added together, five high scoring centres emerged (Amsterdam, Berlin, Munich, London and Verona) with a prevalence of all levels of depression of 30.4 to 37.9%, and four low scoring centres (Dublin, Iceland, Liverpool, Zaragoza) with prevalence levels between 17.7 to 21.4%. Women almost invariably dominated over men. The examination of the proportions of subcases to cases, and psychotic to neurotic depression, although revealing some striking differences between centres, provided no obvious explanation for the difference in prevalence (see also 16).

Although age-specific prevalence rates varied between centres, there was no constant association between prevalence and age.

The meta-analysis of the pooled data on the nine European centres yielded 13,808 subjects, with an overall prevalence of depression of 12.3% (95% CI 11.8-12.9); 14.1% for women (95% CI 13.5-14.8) and 8.6% for men (95% CI 7.9-9.3).

Discussion

It was concluded that considerable variation existed in the levels of depression across Europe, although the cause was not immediately obvious. Cases and subcases taken together showed even greater variability, particularly for women, suggesting that it was not simply a matter of variation in case/subcase criteria, which were in any event standardised by computer. It is possible that risk factors for well/subcase and subcase/case transitions in both directions vary, although this was not true for Liverpool (23), where subcases shared similar risk factors to cases. Although there were substantial levels of depression in all centres, it can also be said that between 62 and 82 percent of older persons had no depressive level on the AGE-CAT system. It was finally concluded that substantial opportunities for treatment existed. Not all studies assessed treatment. Those that did, e.g. Liverpool,

found around 10 % of case level depression received anti-depressant medication.

STUDY 1B: PRESENTATION OF DEPRESSION AND DEPRESSIVE SYMPTOMS IN EUROPE

Results

The proportions of depressive symptoms were found to vary between centres. In Amsterdam, for example, 40% of the general population of older people reported depressive mood compared to 26% in Zaragoza. Symptoms such as 'future bleak', 'hopelessness', 'wish to be dead' were generally rare, but the last reached higher levels in Berlin, Munich and Verona. Sleep disturbance was admitted by only 15% of the population in Dublin, but 54% and 60% in Munich and Berlin. Large differences for some symptoms were found within the very old populations in Iceland, Berlin and Munich: in men aged 85 and over, the prevalence of 'depressed mood', 'crying', 'cannot cry', 'life not worth living' and 'wish to be dead' was 9%, 3%, 4%, 2% and 3%, respectively, in Iceland, whereas it was 50%, 33%, 26%, 30% and 29% in Munich, and 41%, 21%, 15%, 16% and 25% in Berlin, whereas there was no difference for 'guilt' and 'energy loss'. These differences were also evident for women (see also 24).

As expected from the prevalence levels of depression, many symptoms were more common among women. Centres where the prevalence of depression was low tended to have fewer symptoms among the well (i.e., those with no depressive level), but there were inconsistencies, so that a low level of symptoms in the 'well' did not necessarily predict a lower level in the depressed.

Discussion

We conclude that surprising variations in prevalence of depressive symptoms occurred between centres, and were not always consistent with levels of depressive illness. The high level of serious symptoms of depression in populations aged 85 and over in the German centres compared to others, and particularly to Iceland, may have been due to the lingering aftermath of the Second World War in this generation.

Less variation with age occurred than expected and was inconsistent between centres. There was no consistent relationship between proportions of symptoms in well persons and cases for all centres. In all, it can be said that the levels of depressive symptoms among over 60% of the older general population of Europe were low, so that pejorative stereotypes of old age in Europe as naturally depressed were not upheld.

STUDY 2A: HARMONISATION OF MEASURES OF DEPRESSION IN OLDER PEOPLE

Method

Because new centres had entered the consortium, which had not used the GMS AGE-CAT, attempts were

made to harmonise the depression measures which they had used with the GMS items, so that a common scale could be derived (the EURO-D, 25). Most of the non-GMS AGE-CAT centres had used the Short Care, the Center for Epidemiological Studies - Depressive Scale (CES-D), the Comprehensive Psychopathological Rating Scale (CPRS) and the Zung Self Rating Depression Scale (ZSDS). Common items were identified by scrutiny of these instruments, and algorithms for fitting items from other instruments to the GMS were derived. This was undertaken by direct observation of item correspondence or by expert opinion. The resulting twelve item scale was checked in each centre for internal consistency, criterion validity and uniformity of factor and analytic profiles.

Results

It was concluded that the EURO-D Scale, from whichever scale it had been derived, was entirely consistent and seemed to capture the essence of its parent instrument. It was also judged to have a comparable factor structure whatever its origin, but a two factor solution was optimal. 'Depression', 'tearfulness', and 'wishing to die' loaded on the first factor, which we called 'affective suffering', while 'loss of interest', 'poor concentration' and 'lack of enjoyment' loaded on the second, called the 'motivation factor'. It was concluded that the diverse depression measures covered common conceptual domains, and often had similarly worded items. Even differences in modes of administration (for example, self report versus semi-structured clinical interview) did not seem to prevent the extraction of broadly comparable data with common scaling properties.

STUDY 2B: APPLICATION OF THE EURO-D SCALE

Method

Subjects from the 14 population based surveys were used to test the EURO-D with respect to the main interactive effects of centre, age, gender and marital status (see also 26). Between centre variance was partitioned according to centre sub-characteristics, geographical region, prominent religion and survey instrument used.

Results

It was noted that EURO-D scores tended to increase with increasing age, unlike the levels of prevalence of depression. Women had generally higher scores than men, and widowed and separated subjects higher scores than those who were currently or never married.

Discussion

The EURO-D Scale, it appeared, could be reduced to two well characterised factors, 'motivation' and 'affective

suffering'. The motivation factor seemed to account for the positive association with age, while the affective suffering factor was responsible for the gender difference. The gender difference was modified by marital status, being negligible among those who had never married, and equally evident among the currently married, the widowed and the separated. There was no evidence for a continuation of the gender difference with increasing age. The effects of age, gender and marital status accounted for less than 1% of the variance in the EURO-D Scale.

It was concluded that there were large between centre differences, which could be explained neither by the age, gender or marital status characteristics of the population, nor by the instruments used to survey them.

Reasonably consistent, but small effects of age, gender and marital status on depression symptoms have been observed across the 14 European centres. It is concluded that while symptoms of depression increase with age, depression may be over-diagnosed in older persons because of an increase in complaints of lack of interest and motivation which may be affectively neutral and possibly related to cognitive decline.

STUDY 3: RELIGIOUS BEHAVIOUR AND DEPRESSIVE SYMPTOMS IN EUROPE

Method

We examined the influence of religion on the level of both depressive symptoms and illness across the European centres. The EURO-D Scale was used in this analysis to allow all the centres, original and additional, to participate. The influence of religion is of interest to the collaboration because of the split between North and South Europe and between protestant and roman catholic groups, with some catholic centres (Ireland, Belgium, and in part Liverpool) being in the more northerly parts of the continent, and Spain, Italy and France in the more southerly. The addition of Albania had the advantage of introducing a largely Muslim religious group (see also 27).

The protective effects of being a religious person were examined using data from 13 community based studies in 11 centres.

Results

Fewer depressive symptoms were found in those catholic countries with high rates of regular church attendance, while in protestant countries high levels of depressive symptoms were associated with lower levels of attendance. It was concluded that religious practice, especially when it is embedded within a traditional value-orientation, may facilitate coping with adversity in later life.

Interactive effects showed the results to be more pro-

nounced among older women. It was concluded that older Europeans appear to benefit from religious practice.

CONCLUSIONS

However interpreted, these results make it plain that depression as an illness is common among older people in Europe. Although it was not possible to assess the size of the population receiving treatment, it is known that in the London and Liverpool centres it falls often well below 15% of depressed persons judged as likely to benefit. There is no reason to suppose these figures are better in other European countries. Opportunities for effective treatment are almost certainly being lost.

THE FUTURE

The consortium is now addressing the risk factors for depression in this age group, and prognosis. We shall also be examining comorbidity with organic states, especially dementia. Issues such as daily life, handicap and depression, the validity of social measures of depression and the concept of handicap and the daily life of older people in Europe are being explored by the use of the Experience Sampling Method developed at the Maastricht Centre.

The consortium looks to extend its work into randomised controlled treatment trials of depression between centres and to study better methods for service delivery.

The EURODEP consortium gave rise to the ASIADep consortium, consisting of nine similar centres distributed in Asian countries (Japan, China, South Korea, Taiwan, Singapore, Malaysia and India) which will shortly be reporting their results.

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