Editorials

Depression: major problem for public health

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Abstract. The aim of this Editorial is to discuss depression as an important disorder for public health. The literature regarding epidemiology, consequences, adequacy of service delivery and prevention of depression is reviewed. Depression is a common disorder with high lifetime rates, particularly in women, and those experiencing social adversity. It is a major cause of disability, and causes death both by suicide and due to raised rates of physical disorders. Many cases are undiagnosed and treatment is often inadequate. Primary prevention is not yet easily feasible but secondary prevention by earlier recognition, public and professional education, can produce benefits. There is a need for public health programmes aimed at improving recognition, treatment, and reducing consequences.

The public health approach to a disorder concerns its occurrence in populations. It encompasses consideration of its epidemiology; consequences; causes, especially those relevant to prevention; treatment, including delivery of services, access and outcome; prevention. Seen in this context depression emerges as a major problem: a common disorder, which produces much disability, impact on families and children, economic costs, load on services, death by suicide and from physical disorders. There are large deficiencies in recognition and treatment delivery which need to be addressed. In reviewing these issues European studies will be given particular attention.

EPIDEMIOLOGY AND ASSOCIATED FACTORS

The last quarter century has seen great activity in psychiatric epidemiology, with improved interview case finding methods leading to numerous large scale community surveys in many countries, and rates for disorder which are now fairly consistent and well established, at least for affluent Western countries. We have recently reviewed European studies of depression (Paykel *et al.*, 2005a). For 12 month prevalence, figures vary between 3% and 6%. In the ESMeD collaborative study of six Western European countries (Alonso *et al.*, 2004) the one year prevalence was 3.9%. In the *International Consortium of Psychiatric Epidemiology* surveys, using the CIDI (Andrade et al., 2003), covering a wider range of countries, one year prevalences ranged from 1.2% for Japan, to 5.9% for the Netherlands. Recent US figures from the *National Comorbidity Survey Replication* (Kessler *et al.*, 2005) give a higher 12 month prevalence of major depression of 6.7%. There is consistent female predominance of 2:1 or more, higher rates with lower social class and deprivation, a trend to a curvilinear relationship with age with highest rates in middle age, and high comorbidity with anxiety disorders and physical disorders.

While prevalence has been studied extensively, incidence of first episodes and annual episode rates are less clear. To establish reliable incidence over a period requires studies employing two or more waves, the first to detect pre-existing disorder, the second to determine the occurrence rate of further new cases. Particularly problematic are lifetime rates. Estimation from a single interview is somewhat risky, since recall is likely to be incomplete and selective (Paykel, 2000). The Swedish Lundby study, which interviewed subjects from the same population twice with a 15 year gap, obtained lifetime estimates of approximately 32% in women and 17% in men (Rorsman *et al.*, 1990), and a British study using rather different methods obtained somewhat similar values (Bebbington *et al.*, 1989). Differential drop off in recall with age probably explains inferences from single interview studies that rates of depression are increasing

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(Cross-National Collaborative Group, 1992), and studies using repeated interviewing either suggest only a limited increase in younger males (Hagnell *et al.*, 1982), or no change at all (Murphy *et al.*, 2000).

Prevalence studies show cross national variations in rates, at least two fold within the relatively homogeneous confines of Europe, wider among a wider range of countries and ethnic groups. These are probably within the range of measurement error currently achievable, but it is difficult to be certain. Transcultural studies involve translations of interview instruments, and even with careful attention to these and to back-translation, it is difficult to avoid subtle differences in language, usage, attitude to interviewer and readiness to disclose which may affect comparability.

Causes are important to any consideration of prevention. The literature is very large and well known, and will not be reviewed here. Best established are the proximate causes of recent life events and other stresses, and absence of social support. Reliable data on early life factors are starting to emerge from longitudinal studies of birth cohorts. There is good evidence for genetic factors from twin studies, but genes are almost certainly multiple and few genes of strong effects have emerged yet from molecular genetic studies, although the serotonin transporter is now a strong candidate.

CONSEQUENCES

Depression is disabling and this has been shown in many studies. For instance, in the ESMeD European study mood disorders and anxiety disorders ranked more highly than a number of common physical disorders for work days lost (Alonso *et al.*, 2004). In a German primary care study depressed patients had 11 times as many days with total impairment as non-depressed patients (Wittchen & Pittrow, 2002). In the UK Whitehall studies, psychiatric disorder, largely neurosis, was the second cause of very long absence (Stansfeld *et al.*,1995). In the USA, the *Medical Outcomes Study* (Wells *et al.*, 1989) found depression associated with as much poor functioning as a number of common chronic medical conditions.

Updated figures for 2000 from the 'Global Burden of Disease' study (Üstün *et al.*, 2004), measuring impact in DALYs (Disability Adjusted Life Years), which encompass both mortality and disability, show depression ranking fourth globally, third in Europe and first in the Americas. DALYs are a compound measure involving both disability and death. In some respects better measures for depression are YLDs (Years of Life Lived with Disability), which only consider the disability element. Depression ranks highest among all disorders for YLDs (World Health Organization, 2001).

There have also been many studies of disability and social dysfunction in clinical samples with depression. These show considerable work disability, and impact on activities and relationships, including marital relationships and relationships with children, which recover more slowly than symptoms (Weissman & Paykel, 1974). Post-natal depression affects social, emotional and possibly, cognitive development of infants (Murray *et al.*, 1999). Children of depressed mothers have increased rates of depression (Weissman *et al.*, 1987).

Depression has associated mortality. Ultimately about 15% of patients treated by psychiatrists die of suicide (Guze & Robins, 1970; O'Leary *et al.*, 2001), with annual suicide rates around 30 times general population rates (O'Leary *et al.*, 2001; Harris & Barraclough, 1998). Suicide rates vary markedly among countries but the role in this variation of the link with depression has not yet been well studied internationally. In Hungary, with a particularly high suicide rate, a high proportion of attempted suicides have been reported to show major depression or bipolar disorder (Balazs *et al.*, 2003).

Follow-up studies also consistently show raised natural cause mortality (eg Abas *et al.*, 2002; Hansen *et al.*, 1997; Penninx *et al.*, 2001; Pulska *et al.*, 1999). There is a particular relationship with ischaemic heart disease (Barrick, 1999; Hippisley-Cox *et al.*, 1998).

Depression produces substantial economic costs, both through costs of health and social care, and from other costs such as work days lost. In the USA (approximately 270 million population) total costs have been variously estimated at $16 billion (Stoudemire *et al.*, 1986), $30 billion (Rice & Miller, 1995), $44 billion (Greenberg *et al.*, 1993). European studies have found widely varying figures (Lothgren, 2004; Andlin-Sobocki & Wittchen, 2005). A recent study in England (Thomas & Morris, 2003), estimated total costs in the approximately 50 million population at over 9 billion pounds, of which only 370 million pounds were direct treatment costs, and the remainder indirect costs, mainly due work days lost. Effective intervention can therefore be very cost-effective, if work days lost are reduced.

TREATMENT AND OUTCOME

The treatment efficacy literature is extremely large. Overall conclusions are important for public health.

Antidepressant medications produce around 30% more subjects showing good improvement than does

placebo. The older anti-depressants have low costs. Favoured individual drugs vary by country, reflecting local preferences and marketing. Most antidepressant trials have used secondary care psychiatric samples but there is evidence of benefit in milder general practice major depression, including European trials (Paykel *et al.*, 1988; Lecrubier *et al.*, 1997; Malt *et al.*, 1999).

The evidence for psychotherapies is weaker than for antidepressants. Interpersonal therapy (IPT) has been found effective in US studies, and group and family therapy have been evaluated in a few trials. In primary care in the UK counselling is used extensively, but benefit is limited (Bower *et al.*, 2003; Simpson *et al.*, 2003).

There is much stronger evidence for cognitive-behavioural therapy (CBT) in milder depressions, including in primary care, when given by cognitive therapists (Scott & Freeman, 1992; Teasdale *et al.*, 1984), but not as a brief procedure taught to GPs (King *et al.*, 2002). A computerised approach, which is less costly and not limited by shortage of therapists, has been found effective in general practice (Proudfoot *et al.*, 2003).

There is also good evidence that anti-depressants should be used routinely for 6-9 months after remission to reduce relapse rates, and that they are of value in longer term treatment to prevent further episodes in recurrent patients (Paykel, 2001). CBT also appears to have specific effects (Paykel 2001; Paykel *et al.*, 2005b) and its place is evolving.

In spite of modern treatments, depression is still often a recurrent disorder (Paykel, 2001). Acute short term outcome is fairly good, with most patients showing some improvement, a small proportion remaining chronic and unremitted, but around 20-30% showing partial remission with residual symptoms. However around 30% of subjects relapse in the first year and in the long term 70-80% have at least one further episode, and long term outcome, found in the early 1980s to be characterised by high rates of relapse and recurrence (Keller *et al.*, 1983), remains problematic even in recent studies.

A recent British 10 year follow-up study found recurrence in 67% and considerable inter-episode symptoms (Kennedy *et al.*, 2003; 2004). In one of the few studies of out-patients, Van Londen *et al.* (1998) in the Netherlands found 41% recurrence in five years. Residual symptoms have been found in a number of studies to predict relapse (Paykel *et al.*, 1995; Pintor *et al.*, 2003). In Denmark, over 25 years following first admission approximately 55% of unipolars had a further admission (Kessing *et al.*, 1998). In an Italian follow-up (Maj *et al.*, 1992) recurrence occurred in 75% by five years. Much of the adverse outcome appears to reflect an adverse natural history rather than deficiencies in treatment delivery in practice (Ramana *et al.*, 1999).

These findings have one serious limitation. Most are based on depressives in psychiatric secondary care, usually hospitalised. The very few primary care studies with follow-up beyond 1-2 years (Ormel *et al.*, 1993, Van Weel-Baumgarten *et al.*, 1998; 2000) suggest a less recurrent disorder. This also applies to depression identified in community surveys, for which the high lifetime incidence rates strongly suggest that many episodes must be single and time-limited.

HEALTH CARE AND PRIMARY CARE

A pathway with many determinants leads from the community to various levels of health care, including primary care, specialist outpatient and inpatient care. Different countries differ quite widely in health care systems, mode of funding (state, insurance, private), extent to which health care is primary care or specialist based. The impact of these differences on proportions of people treated in various settings has not been sufficiently studied.

In the ESMeD European study (Alonso *et al.*, 2004), across countries only 37% of subjects with mood disorder in the last year received any health care, with 35% of these receiving GP care only, 31% care from GP plus a mental health professional, and 36% from a mental health professional only. In Finland a recent community survey (Hamalainen *et al.*, 2004) found only 27% of depression cases had used health services in the last year, with more in specialist services (16%) than in primary care (11%). In the Netherlands the NEMESIS study found that 64% of subjects with mood disorders received some form of help, 54% of these (35% of the total) from primary care, 34 % (18% of the total) from ambulatory mental health services (Bijl & Ravelli, 2000). In Germany (Jacobi *et al.*, 2004) 41% of those with pure depressive disorder and 62% of those with two additional disorders received some form of care. Even in the USA, with a very different health care system and much more use of specialist care, in the Epidemiologic Catchment Area Studies in the 1980s, only 54% of those with major depression had received any care in the last year, much of it from non-specialists (Regier *et al.*, 1993), while the most recent figures, from the National Comorbidity Survey replication, is a similar 52% about equally divided between specialist mental health and general medical care (Wang *et al.*, 2005).

In the UK Goldberg & Huxley (1992) reviewed five levels and the filters between them, with estimates of annual prevalence per 1000 in Manchester: disorder in

the community (250-310); total morbidity presenting in primary care (230); disorder identified in primary care (101.5); total morbidity presenting to psychiatric services (20.8); psychiatric inpatients (3.4). They described some differences in rates in Groningen and Verona. In the UK 1993 National Morbidity Survey 40% of males with depressive episode and 51% of females saw their general practitioner for mental health problems in the past year (Bebbington *et al.*, 2000a), while 15% (29% of those consulting) received an antidepressant (Bebbington *et al.*, 2000b). Seven years later in a repeat of the survey, consultation with general practitioners and prescription of antidepressants had increased (Brugha *et al.*, 2004).

Primary care is a key level in care for depression. In the UK general practitioners treat much of depression themselves, with only 15%-20% of those they see referred to specialist psychiatrists or other mental health workers. Among depressives treated by GPs with antidepressants about 50% were found to be major depressives while of those given other treatments, only 20% were (Sireling *et al.*, 1985). Major depressives not recognised by the GP had less overt and typical symptomatology, less depressive mood and insight, longer illnesses and more physical illness (Freeling *et al.*, 1985). Physicians' interview behaviour influences accurate recognition (Goldberg & Huxley 1992).

The recognition rate in general practice is consistently around 40-60% in European studies, including in Italy (Balestrieri *et al.*, 2004), the Netherlands (Ormel *et al.*, 1991), Belgium (Ansseau *et al.*, 2004), Germany (Wittchen & Pittrow, 2002), Finland (Joukamaa *et al.*, 1995; Karlsson *et al.*, 2000), and in a Nordic multicentre study with most cases treated by the general practitioners (Munk-Jørgensen *et al.*, 1997). Patients are often seen repeatedly and in a British study of missed cases of depression or anxiety, 41% were recognised in the next three years (Kessler *et al.*, 2002).

There has been considerable work on screening questionnaires, including the non-specific *General Health Questionnaire* (GHQ) in the UK (Goldberg & Huxley, 1992), development of the *Personal Health Questionnaire* (PHR) in Italy (Rizzo *et al.*, 2000) and a comparison of several different scales in Germany (Henkel *et al.*, 2003). There is only limited evidence of outcome benefit from these (Gilbody *et al.*, 2001).

Training of general practitioners has been found to improve depression recognition and management in various countries, including the Netherlands (Tiemens *et al.*, 1999; van Os *et al.*, 2002) and Denmark (Pedersen *et al.*, 2001). In the UK training GPs in interviewing has been shown to improve interviewing style and recognition of psychiatric disorder in general (Bowman *et al.*, 1992). However, the large *Hampshire Depression Project* (Thompson *et al.*, 2000) did not improve actual patient outcome and neither did a study based in Manchester (Gask *et al.*, 2004). The most widely quoted general practitioner educational project is the Gotland study (Rutz *et al.*, 1992) where an intensive educational programme resulted in higher rates of antidepressant prescribing, decreased psychiatric admission, and a decrease in the number of suicides.

In campaigns combining public and professional education, the UK *Defeat Depression Campaign* improved public attitudes to depression (Paykel *et al.*, 1998).

Anti-depressant prescribing rates and adequacy tend to be low (Thompson & Thompson, 1989; Dunn *et al.*, 1999; Balestrieri *et al.*, 2004), with variations among different European countries (Linden *et al.*, 1999; Alonso *et al.*, 2004). In the USA, in the NIMH *Collaborative Depression Psychobiology Study*, in specialist centres, only 49% of subjects received an antidepressant at adequate dose for as long as four weeks (Keller *et al.*, 1986). In general, people with depression tend to have negative attitudes to antidepressants and to prefer psychotherapeutic treatments in spite of the limited evidence for their efficacy. Again, public education can improve attitudes, although changes may be relatively small (Paykel *et al.*, 1998).

In the USA, Katon, Simon et al. (2000) have shown improved treatment delivery and outcome in general practice in several controlled trials of structured depression management programmes, involving GP and patient education, with additional specialised workers such as nurses or psychiatrists, less used in Europe, producing the best results.

PREVENTION

The large body of evidence on risk factors, protective factors, consequences and the extent of depressive disorder has not been mirrored adequately in translation into action. There is a need for further public health programmes that attempt to reduce rates and consequences, such as the examples cited earlier, including educational programmes for the general public and for primary care workers, and other programmes to enhance primary care management. These fall under the rubric of secondary prevention. So do early intervention programmes for life crises such as bereavement.

Primary prevention needs to be approached realistically and cautiously because of the wide range of causative factors (Paykel & Jenkins, 1994). The best established social causes, such as life events and poor social support, seem in many cases inevitable consequences of the life cycle, or of family relationships, particularly in affluent

and settled circumstances, although less so in groups and areas under marked social adversity. There have been attempts at preventive programmes for adolescents and young adults in the USA, evaluated by randomised controlled trials (Clarke *et al.*, 2001). The implementation of US trial evidence-based attempts to prevent depression is beginning to emerge in the Netherlands and Finland (Price *et al.*, 1992). In Australia there has been considerable federal and state backing for mental disorder prevention. Although we do not yet have evidence on which to base clear recommendations, further studies of pilot programmes would be timely. These should be accompanied by rigorous evaluation.

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