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REVIEW

Collaborative care for depression: a literature review and a model for implementation in developing countries

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Depression will soon be the leading cause of disability in developing countries but effective treatments are not widely available. There is compelling evidence for the effectiveness and cost-effectiveness of the multicondition collaborative care (MCC) model for depression in developing and developed countries. In the MCC model integrated care for depression is provided along with care for different non-communicable disorders. MCC has been shown to reduce hyperglycaemia and hyperlipidaemia and can lead to depression-free days when integrated care for depression and diabetes is provided. However, due to limited resources, it is not possible to make this effective model of care available at the population level. It is suggested that a public health intervention based on the MCC model can lead to better care for depression in developing countries. A public health programme of MCC which provides treatment for depression, diabetes and hypertension in a collaborative care programme will be a cost-effective way of providing treatment for depression in developing countries. This will cater for the leading cause of disability (unipolar depression) and the leading projected causes of mortality (ischaemic heart disease and cerebrovascular disease) in low-income and middle-income countries.

Keywords: Depression, Depressive disorders, Mental health, Collaborative care, Stepped care, Developing countries

Background

Depression will soon be the second leading cause of disability worldwide and is the third most common reason for consultation in primary care. Non-communicable disorders are responsible for almost one-half of the disease burden in low-income and middle-income countries. Unipolar depression makes a large contribution to the burden of disease, being at third place worldwide and eighth place in low-income countries, but at first place in middle-income and high-income countries.[1] Depression is more common in people with chronic physical conditions.[2] When both mental and physical disorders are present, the risks and the costs of both increase.[3–5] It is interesting to note that depression and ischaemic heart disease cause an almost similar burden of disease, i.e. 26 and 26.5 disability-adjusted life-years, respectively.[1]

Management of depression is well below the standards expected by most evidence-based guidelines, even in well-developed health systems.[6,7] The enhanced management of depression in primary care is central to the WHO strategy for mental health and is considered to be a cornerstone strategy for provision of psychiatric services in developing countries.[8] A number of strategies have been devised and evaluated to improve the recognition and treatment of depression in primary care. One such strategy is collaborative care for depression.

Collaborative care for depression: the concept and evidence from developed countries

The term collaborative care encompasses interventions of varying intensity, ranging from simple telephone interventions for encouraging adherence with treatment to more complex interventions. Essentially, collaborative care is a multimodal intervention that has at least two core components: (i) mental health professionals (often called case managers) to support primary care providers by helping to educate patients about depression, providing close patient follow-up, monitoring depression outcomes and treatment adherence, and facilitating additional visits or treatments with the primary care physician if depression is not improving as expected; and (ii) consultation by a psychiatrist who provides backup and caseload supervision to depression care managers, and clinical advice and decision support to primary care providers focusing on patients in whom the treatment response is not satisfactory.[9]

Systematic reviews of effectiveness and cost-effectiveness showed the superiority of collaborative care over usual care.[10,11] Gilbody et al.[10] conducted a systematic review and meta-analysis of 37 randomized controlled trials (RCT) that tested the effect of collaborative care models in comparison with the usual primary care treatment in 12 355 patients with depression. They found that collaborative care was associated

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with increased adherence to antidepressant medication at 6 months by almost twofold. The authors concluded that 'results confirm that collaborative care is effective in improving short-term outcomes in depression and, to our knowledge, summarize for the first time the emerging evidence of longer-term benefit. The totality of evidence, when given using cumulative meta-analysis, shows that further trials are unlikely to overturn this positive result'.[10] A systematic review of the cost-effectiveness of collaborative care for major depressive disorders in primary care[11] showed that collaborative care was generally more cost-effective. Overall the collaborative care patients experienced 60 more depression-free days than usual care patients which resulted in significant savings in treatment and care costs.

Search strategy and selection of studies

In order to systematically review the evidence regarding the collaborative care approach in developing countries, a comprehensive search of the following databases was conducted: PubMed (MEDLINE), PsychInfo, CINAHL and EMBASE. In addition, the Cochrane Library was checked for reviews or ongoing reviews and the reference lists of these studies were searched for further papers on the subject. In view of the fact that the concept of collaborative care in depression is a relatively recent phenomenon, the search was conducted from 1982 to March 2012. All studies which described randomized controlled evaluation of the stepped care model versus standard service, treatment as usual or any other service delivery model were included. Patients in the included studies had to be diagnosed with a depressive disorder or common mental disorder (a term commonly used in literature from developing countries) according to a recognized classification system such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) or the International Statistical Classification of Diseases (ICD). For the purpose of this paper, collaborative care was broadly defined as a multifaceted intervention involving combinations of different professionals working collaboratively in any healthcare setting as defined by Gilbody et al.[10] The developing countries were defined according to the criteria adopted from Farooq et al.[12]

The literature was searched using the following search terms: depression, depressive disorder, common mental disorders, collaborative care, stepped care and disease management. Common derivatives of collaborative care such as integrated care, integration of mental health professionals in primary care, integrated primary care and shared care were also included in the search. These terms were combined with the following keywords in different combinations: developing countries, low and middle income countries, third world countries, third world, middle income countries and low income countries.

After screening 2697 titles for relevant studies obtained from the search by the combination of data sets, 205 abstracts were read for further details. The findings from four RCTs which clearly described a collaborative care model in developing countries are given here and the results of these studies are reported briefly in a descriptive manner. The characteristics of the included studies and quality of the evidence are not appraised in this paper.

Collaborative care for depression: the evidence from developing countries

A number of trials from developing countries evaluated the effectiveness of different interventions for depression and common mental disorders. These included two trials from Uganda which showed the effectiveness of group interpersonal psychotherapy for depressed populations in rural Uganda and among depressed adolescent survivors of war and displacement;[13,14] and a cognitive behaviour therapy-based intervention delivered by community health workers in rural Pakistan.[15] Patel et al. assessed the efficacy and cost-effectiveness of one antidepressant medication (Fluoxetine) and psychological treatment for common mental disorders in general healthcare settings in India.[16] All these studies targeted poor populations and tested treatment options that were intended to be feasible, affordable and acceptable to the populations being studied. These trials generally showed the effectiveness of antidepressants and brief psychological treatments. They also showed significant improvements in disability levels in the intervention group.

Four major RCTs have been published from low-income and middle-income countries describing different forms of collaborative care for depression and common mental disorders. These trials studied slightly different interventions and some papers included outcomes for common mental disorders and not depression alone. Therefore, the findings of these trials are given briefly here.

Araya et al.[17] compared the effectiveness of a stepped care programme with usual care in primary care management of depression in low-income women in Santiago, Chile. The authors randomized 240 adult female primary care patients presenting with major depression either to a stepped care model for treatment of depression or to the usual care available in outpatients. Stepped care was a 3-month, multicomponent intervention. The intervention was delivered by a non-medical health worker who provided a psychoeducational group intervention, structured and systematic follow-up, and drug treatment for patients with severe depression. There was a substantial between-group difference in all outcome measures in favour of the stepped care programme and the adjusted difference in mean Hamilton Depression Rating Scale score between the groups was -8.89 (95% CI -11.15 to -6.76; $p < 0.0001$). At 6-months' follow-up, 70% of the patients in the stepped care group had recovered compared with 30% of the patients in the usual care group (Hamilton Depression Rating Scale score <8).[17] A subsequent paper by Araya et al.[18] looked at cost-effectiveness data, where depression-free days and healthcare costs derived from local sources were computed after 3 and 6 months for the study patients. Women in the stepped care programme had a mean of 50 additional depression-free days over 6 months relative to those allocated to usual care after adjusting the data for initial severity. The stepped care programme was marginally more expensive than usual care (an extra 216 Chilean pesos per depression-free day) but this was more than offset by the depression-free days in the intervention group. The authors concluded that small investments to improve treatment of depression could yield much larger gains in low socioeconomic areas.[18]

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In another trial, Rojas et al.[19] compared the effectiveness of a multicomponent intervention with usual care to treat postnatal depression in low-income mothers in primary care clinics in Santiago, Chile. Mothers suffering from major depression attending postnatal clinics (n = 230) were randomly allocated to a multicomponent intervention (n = 114) or usual care (n = 116). The multicomponent intervention included a psychoeducational group, treatment adherence support and pharmacotherapy, if needed. Usual care involved all services available in routine clinical care in these clinics and this included antidepressants, brief counselling, medical consultations or referral for specialty treatment if needed. The primary outcome measure was the Edinburgh Postnatal Depression Scale (EPDS) score at 3 and 6 months after randomization. The adjusted difference in mean EPDS between the two groups at 3 months was −4.5 (95% CI −6.3 to −2.7; $p < 0.0001$). The crude mean EPDS score was lower for the multicomponent intervention group than for the usual care group at 3 months. Although these differences between groups decreased by 6 months, the EPDS score remained lower in the multicomponent intervention group than in the usual care group.[19]

Patel et al.[20] evaluated the effectiveness of the collaborative stepped care model which was led by lay health counsellors for the treatment of common mental disorders in patients attending public and private primary healthcare facilities in India. The collaborative stepped care intervention included psychoeducation, prescribing antidepressants for moderate to severe mental disorders which did not respond to psychoeducation alone, and interpersonal therapy either in addition to antidepressants or as an alternative to antidepressants for those who did not respond to them. Patients who were unresponsive to the earlier treatments were referred to a visiting psychiatrist for specialist treatment. The trial recruited 2796 participants. The participants attending public health facilities had consistent benefit from the stepped care intervention over 12 months. There was a 30% decrease in the prevalence of common mental disorders in participants with baseline ICD-10 diagnoses (risk ratio [RR] = 0.70, 95% CI 0.53–0.92). Importantly, suicide attempts/plans showed a 36% reduction over 12 months (RR = 0.64, 95% CI 0.42–0.98) among baseline ICD-10 cases.[20] This last finding is important in view of an emerging finding that suicide death rates in India are among the highest in the world and a large proportion of adult suicide deaths occur between the ages of 15 years and 29 years, especially in women.[21]

Multicondition collaborative care (MCC): the concept and evidence

There is compelling evidence for the effectiveness, and to some extent cost-effectiveness, of collaborative care for depression in developing and developed countries. The challenge for policy makers is to translate this compelling evidence into practice at the health service level.

Management of chronic non-communicable disorders based solely on the treatment of a single diagnosis is flawed from the public health perspective. Chronic diseases are usually accompanied by different comorbidities such as hypertension, cardiovascular disease and most commonly depression. These comorbidities result in competing demands when patients seek care from different clinicians. They often receive complex medication regimens and are at high risk of harmful drug interactions and poor medication adherence.[22–24] This also results in duplicative medical tests, unnecessary hospitalization and worsening mortality.[25,26] Not surprisingly patients with multiple chronic illnesses have the highest medical costs. Data from the US suggests that the 27% of adult Americans with two or more chronic medical illnesses now account for approximately 65% of total healthcare spending.[27]

A possible approach to organizing services for patients with multiple conditions is to identify clusters of coexisting illnesses and manage these along with collaborative care for depression. It is increasingly realized that when comorbid depression is present with physical disorders, which occurs in up to 20% of patients with diabetes, healthcare costs and risks of adverse outcomes are significantly increased.[28–30] In addition to possible psychobiologic effects of depression in these conditions, there is robust evidence that depression may adversely affect the adherence to treatment and self-care, which may lead to higher functional impairment,[31–34] increased risk of complications and mortality[27] and increased medical costs.[30,35]

Multicondition collaborative care (MCC) is an approach that aims to integrate the care for different non-communicable disorders with collaborative care for depression. In this approach key components of collaborative care for depression are integrated into disease management programmes for patients with chronic medical disorders such as diabetes, hypertension or chronic heart disease.[36] The intervention combines self-management, drugs to control depression and physical disorders such as hyperglycaemia, hypertension and hyperlipidaemia. Patients work collaboratively with health workers and primary care physicians to learn and develop self-management for chronic conditions. Follow-up visits are structured to monitor patients' progress in treatment using objective outcome measures to monitor control of medical diseases, self-care activities and guided adjustments in treatment for patients not achieving specific goals. Patients are actively supported for adherence to drugs, sometimes by using motivational interviewing.

Integrated care that covers chronic physical disease and comorbid depression has been shown to reduce social role disability and enhance the global quality of life.[37] Katon et al.[38] conducted a single-blind RCT in 14 primary care clinics involving 214 participants with poorly controlled diabetes, coronary heart disease or both, and coexisting depression. Patients were randomly assigned to the usual care group or to the intervention group consisting of MCC. The MCC patients were given collaborative care for depression as well as physical disorders which was supervised by a medical nurse, working with the patient's primary care physician. They found a significant and sustained effect of the MCC intervention on depression-free days. During a 24-month period, patients in the intervention group had a mean of 3–4 more months free from depression compared with usual care patients. Patients in the intervention group had greater overall 12-month improvement across a range of measures such as glycated haemoglobin levels, LDL cholesterol levels, systolic blood pressure and depression scores compared with controls. Patients in the intervention group also reported better quality of life ($p < 0.001$) and greater satisfaction with care for diabetes, coronary heart disease or both ($p < 0.001$) and with care for depression ($p < 0.001$).[38]

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A paradigm for developing countries

The health systems in most developing countries are still focused on communicable diseases as these conditions are responsible for the high incidence of mortality, but this has changed dramatically over the last few decades. Recent estimates suggest that almost half of the disease burden in low-income and middle-income countries is now from non-communicable disorders. Ischaemic heart disease and stroke are the largest sources of this burden.[1] Large populations, especially in South Asia, are facing a high prevalence of cardiovascular disease and diabetes affecting increasingly younger populations. While public health interventions for communicable diseases such as TB and HIV are well established with robust political and social support, the models for treating non-communicable disorders at the population level are non-existent.

I argue that MCC provides a feasible way of incorporating management of depression along with other physical disorders in primary care. The integration of mental health, especially for depression, in primary care has been advocated for many decades, but there is little evidence for progress in most developing countries. This is not surprising in view of the facts that in most developing countries less than 1% of the total health spending is earmarked for mental health or in some cases there is no separate budget for mental health. However, this is not entirely due to resource constraints. The inability to produce feasible models of care which can be included in primary care along with other public health programmes is also a contributory factor. Even if mental health becomes one of the top priorities, the economic constraints facing health and social spending in developing countries mean that providing evidence-based care for cases of depression will remain unlikely. It is therefore not feasible to provide a public health programme for depression alone, despite its high prevalence and disease burden.

A public health programme of MCC which provides treatment for depression, diabetes and hypertension will be a cost-effective way of providing treatment for the three most disabling and high priority conditions. All patients suffering from diabetes and hypertension are screened for depression and evidence-based treatments are provided using a collaborative care approach. Taken together this model will provide comprehensive care for the leading cause of disability (unipolar depression) and top two projected causes of mortality in low-income and middle-income countries (ischaemic heart disease and cerebrovascular disease).

Managing these conditions in a MCC programme is especially important in developing countries, where a lack of resources and regulatory framework means that the deficiencies of single diagnosis-based management are often multiplied. Diagnosis-specific programmes are complex, costly and likely to give rise to more vertical programmes in healthcare systems which are already overstretched due to huge demands from conditions such as HIV, TB and diabetes.

Admittedly, a MCC programme will cater for a small proportion of overall incident cases for depression. However, the primary care physicians will be able to develop skills in screening and treatment of depression, when providing treatment for depression together with diabetes and hypertension. This will lead to better diagnosis and treatment of depression in primary care for all patients. This will also help to address the behavioural aspects of chronic disease management, leading to better control of diabetes and hypertension. More importantly, perhaps it will reduce the stigma of providing care for depression and promote health seeking behaviours in those suffering from depression.

The health systems in low-income and middle-income countries face enormous challenges in delivery of effective mental health care and scaling-up of services for common mental disorders. These challenges include meagre financial resources, lack of government commitment, integration of mental health care into primary care settings, scarcity of trained mental health personnel, lack of awareness about the burden of disease caused by mental disorders and inadequate public health expertise among mental health professionals.[39] Another major challenge for adopting the MCC model at public health level would be giving increased responsibilities to already busy primary healthcare staff which will require ongoing training and peer support. This will need strong advocacy for financial commitment. The real dividend from this approach would be improved outcomes for cardiovascular and metabolic disorders, which could be a major incentive for public health and policy makers and effectively be used for achieving the financial and human resources required for a public health intervention.

Despite resource constraints many developing countries have implemented successful public health interventions for most communicable disorders and some non-communicable disorders. Mental health professionals can learn a number of lessons from these public health interventions. An example is the model derived from TB control which has been translated and evaluated for providing treatment and monitoring of the medication in patients suffering from schizophrenia.[40] Similar programmes will have to be devised in collaboration with primary care and public health specialists in order to provide care for the large populations suffering from psychiatric disorders. Treatment of depression provides a unique opportunity for bridging the gap in provision of care for chronic non-communicable disorders in developing countries, as this is one of the commonest comorbidities associated with these conditions. However, to realize this opportunity, we need a paradigm shift. We need to consider depression as a non-communicable disorder which most commonly complicates the course of many physical disorders, and not merely as a mental illness on its own.

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