Review article

Healthcare team training programs aimed at improving depression management in primary care: A systematic review

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ABSTRACT

Background: Although evidence from Latin America and the Caribbean suggests that depression can be effectively treated in primary care settings, depression management remains unevenly performed. This systematic review evaluates all the international evidence on healthcare team training programs aimed at improving the outcomes of patients with depression.

Methods: Three databases were searched for articles in English or Spanish indexed up to November 20, 2014. Studies were included if they fulfilled the following conditions: clinical trials, meta-analyses, or systematic reviews; and if they evaluated a training or educational program intended to improve the management of depression by primary healthcare teams, and assessed change in depressive symptoms, diagnosis or response rates, referral rates, patients’ satisfaction and/or quality of life, and the effectiveness of treatments.

Results: Nine studies were included in this systematic review. Five trials tested the effectiveness of multi-component interventions (training included), and the remaining studies evaluated the effectiveness of specific training programs for depression management. All the studies that implemented multi-component interventions were efficacious, and half of the training trials were shown to be effective.

Limitations: Contribution of training programs alone to the effectiveness of multi-component interventions is yet to be established. The lack of specificity regarding health providers’ characteristics might be a confounding factor.

Conclusions: The review conducted suggests that stand-alone training programs are less effective than multi-component interventions. In applying the evidence gathered from developed countries to Latin America and the Caribbean, these training programs must consider and address local conditions of mental health systems, and therefore multi-component interventions may be warranted.

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Abbreviations: LMICs, Low and Middle-Income Countries; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses; RCT, Randomized Controlled Trial; HAM-D, Hamilton Depression Rating Scale; CES-D, Centre for Epidemiological Studies-Depression Scale; EPDS, Edinburgh Postnatal Depression Scale; HAD, Hospital Anxiety and Depression; PHQ-9, Patient Health Questionnaire

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1. Introduction

Depression is a prevalent mental disorder worldwide, and one of the leading causes of disease burden (Ferrari et al., 2013). In some developing countries, it has been recognized as a public health problem, with research showing that nearly 40% of primary care patients suffer from current depressive episodes (Rojas et al., 2000; Vöhringer et al., 2013).

Additionally, evidence suggests that depression can be effectively treated with pharmacotherapy and/or psychotherapy (Schulberg et al., 1998) and collaborative stepped-care programs have proven to be effective in the management of depression in primary care clinics, by delivering treatments supported by evidence-based guidelines (Araya et al., 2003).

In order to address this public health issue, some Low and Middle-Income Countries (LMICs) have developed public health policies based on depression programs centered on the primary level of health care, which have then been scaled-up to a national level (Ministry of Health of Chile, n/d). Specifically in Chile, depression was incorporated into the so-called “Explicit Health Guarantees” public health policy, in order to achieve universal health coverage (Ministry of Health of Chile, 2006), and clinical guidelines were disseminated to ensure protocol-driven management of depression (Ministry of Health of Chile, 2013).

However, in daily practice, depression management remains unevenly performed in primary care settings, and depression tends to be an under-diagnosed condition in these services (Vöhringer et al., 2013). Further, even when it is recognized, its severity is frequently underestimated, inadequate interventions are provided, and compliance with treatment is often insufficient (Alvarado et al., 2009; Alvarado and Rojas, 2011).

In light of this, it is clear that the aforementioned research regarding depression treatment in primary care has not yet translated into the provision of optimal care. Moreover, the literature suggests that multi-component training strategies and systematic practice-based interventions are warranted, especially when changes in clinical practices are most needed (Davis et al., 1995).

Currently in Latin America and the Caribbean, evidence indicates that physicians’ training has limited impact on their daily practice, although no studies have been conducted in this region to evaluate the effectiveness of training programs in improving patients’ outcomes (Levav et al., 2005).

The present study is a systematic review of the effectiveness of primary healthcare team training programs aimed at improving management of depression in primary care settings.

2. Methods

Following PRISMA guidelines (Moher et al., 2009), a systematic review was conducted to identify “healthcare team training programs aimed at improving the management of depression in primary care.”

The PubMed, Embase, and Cochrane Library databases were searched with no time limit. For the PubMed database, two search strategies were performed: 1) (“Depressive Disorder”[Mesh] AND “Education”[Mesh]) AND “Primary Health Care”[Mesh] AND (Clinical Trial[ptyp] AND has abstract[text] AND (English[lang] OR Spanish[lang])); and 2) (“Primary Health Care”[Mesh] OR “Physicians, Primary Care”[Mesh] OR “Primary Care Nursing”[Mesh]) AND “educa-tion”[Subheading] AND (Depressive Disorder”[Mesh] OR “Depressive Disorder, Major”[Mesh]) AND (Clinical Trial[ptyp] AND (English[lang] OR Spanish[lang])).

For the Embase and Cochrane Library databases, the following combination of search terms was used: (Depression AND primary care AND education).

The cutoff date was November 20, 2014. Reference lists of articles found were reviewed to identify additional studies. Search results were restricted to published full-text articles in English or Spanish.

The inclusion criteria for this study were as follows: (a) clinical trials, meta-analyses, and systematic reviews; (b) presence of a training and/or educational intervention program aimed at improving the detection and/or management of depression by primary healthcare teams, with the inclusion of a control group; and (c) assessment of one or more of the following outcomes related to depression in patients: change in symptoms, diagnosis or response rates, referral rates, patients’ satisfaction and quality of life, and treatment effectiveness.

3. Results

As shown in Fig. 1, 70 articles were identified through the database search, and 6 additional articles were included after reviewing bibliographic references. Ten studies were removed due to duplication. Applying inclusion/exclusion criteria, 48 articles were excluded after a title and abstract review: 20 did not fulﬁll study design requirements, 12 lacked required participants, 12 were not interventions by a primary healthcare team, 2 did not report outcomes, and 2 did not match any of the criteria. After screening, 18 full-text studies were assessed for eligibility, which led to the exclusion of 9 studies: 2 lacked required participants, 1 did not report on a training or educational intervention, 3 did not report selected outcomes, 1 did not match study design requirements, and 2 articles were not available in full-text.

Consequently, 9 articles were included in this systematic review (Aragonés et al., 2012; Gask et al., 2004; Katzelnick et al., 2000; Morrell et al., 2005; Rost et al., 2001; Thompson et al., 2009; Wells et al., 2000, 2004; Worrall et al., 1999). When discrepancies arose, two experts decided which studies should be included, by consensus (PV, PM).

All 9 studies were randomized controlled trials (RCT), which included a total of 4581 participants.

The main characteristics of the selected studies are shown in Table 1. Five trials tested the effectiveness of multi-component interventions (Aragonés et al., 2012; Katzelnick et al., 2000; Wells et al., 2000, 2004) that included a training component for the management of depression in primary care. Aragonés et al. (2012) and Katzelnick et al. (2000) depression management programs incorporated clinician training, patient education (provided by trained staff), antidepressant treatment, treatment coordination, and support tools (guides, algorithms) for decision making. Specifically, in Aragonés et al. (2012) study, nurses were trained as case-managers. Wells et al. (2000) and Wells et al. (2004), carried out a quality improvement study in which clinicians were trained in depression management and were staff-supervised, and nurses were trained to provide clinical and follow-up assessment, medication, management, and treatment adherence support; additionally, therapists were trained to deliver cognitive behavioral therapy. Finally, Rost et al. (2001) tested an intervention in which primary care teams (physicians, nurses, and administrative staff) redefined their roles through a brief training program focused on two-stage depression screening, clinical assessment of depression, patient education, pharmacotherapy, and recommendations for referral to mental health specialists.

The remaining four RCTs evaluated the effectiveness of specific training programs for disease management (Gask et al., 2004; Morrell et al., 2000; Thompson et al., 2000; Worrall et al., 1999). Worrall et al. (1999) carried out an educational intervention for physicians, which consisted of case-based training in clinical practice guidelines for depression and psychiatric consultation for advice on patient management. Secondly, Morrell et al. (2009) prepared and evaluated a training program for health visitors, who were trained to assess and identify depressive symptoms and to deliver psychologically informed sessions, based on cognitive behavioral or person-centered approaches. Third, Gask et al. (2004) training course for general practitioners utilized a multifaceted and interactive training package, which consisted of depression assessment, treatment negotiation, pharmacological treatment, problem-solving therapy and social interventions, suicide risk assessment, and referral. Finally, Thompson et al. (2000) evaluated healthcare team training programs based on clinical practice guidelines that included recognition and diagnosis of depression, antidepressant management, non-pharmacological treatment, and assessment of suicide risk.

Brief information about the control condition in each study is reported in Table 1. The core topics of most training programs included: clinical assessment of depression (Aragonés et al., 2012; Gask et al., 2004; Katzelnick et al. 2000; Morrell et al., 2009; Rost et al., 2001; Thompson et al., 2009; Wells et al., 2000, 2004; Worrall et al., 1999), management of antidepressants (Aragonés et al., 2012; Gask et al., 2004).
et al., 2004; Katzelnick et al., 2000; Morrell et al., 2009; Thompson et al., 2000; Wells et al., 2000, 2004), and non-pharmacological interventions (Aragonès et al., 2012; Gask et al., 2004; Morrell et al., 2009; Rost et al., 2001; Thompson et al., 2000; Wells et al., 2000, 2004; Worrall et al., 1999). Additionally, the trials incorporated education on clinical practice guidelines for depression (Aragonès et al., 2012; Katzelnick et al., 2000; Wells et al., 2000, 2004), and discussed practice cases during training (Gask et al., 2004; Morrell et al., 2009; Thompson et al., 2000).

In terms of patient participant recruitment, in four of the nine reviewed trials, patients were recruited by the study staff (Katzelnick et al., 2000; Thompson et al., 2000; Wells et al., 2000, 2004); in three other studies, physicians selected patients after having been trained (Aragonès et al., 2012; Gask et al., 2004; Worrall et al., 1999); another study had trained administrative staff select participants (Rost et al., 2001); and the remaining trial reported that patients were recruited by health visitors (Morrell et al., 2009).

Seven of the nine RCTs used structured, scored questionnaires to assess depression (the Hamilton Depression Rating Scale (HAM-D) (Gask et al., 2004; Katzelnick et al., 2000) and the Centre for Epidemiological Studies-Depression Scale (CES-D) (Rost et al., 2001; Worrall et al., 1999)) were the most frequently used instruments, with each being part of two studies. Other scales used were the Edinburgh Postnatal Depression Scale (EPDS) (Morrell et al., 2009), the Hospital Anxiety and Depression (HAD) scale (Thompson et al., 2000), and the Patient Health Questionnaire (PHQ-9) (Aragonès et al., 2012).

All the studies that implemented multi-component interventions (training included) proved to be efficacious (Aragonès et al., 2012; Katzelnick et al., 2000; Wells et al., 2000, 2004), while half of the purely training trials demonstrated educational program effectiveness (Worrall et al., 1999; Morrell et al., 2009). Overall, seven of the nine studies (78%) showed clinically positive results (a significant decrease in depression scales scores for the active group, when compared with controls) (Aragonès et al., 2012; Katzelnick et al., 2000; Morrell et al., 2009; Rost et al., 2001; Wells et al., 2000, 2004; Worrall et al., 1999) (see Table 1).

4. Discussion

Our findings show that a high proportion of the reviewed trials (seven out of nine, or 78%) reported a statistically significant reduction in the depression levels of patients, when compared with the control groups (Aragonès et al., 2012; Katzelnick et al., 2000; Morrell et al., 2009; Rost et al., 2001; Wells et al., 2000, 2004; Worrall et al., 1999).

With regard to multi-component interventions for the management of depression in primary care, it was not possible to isolate and measure the specific contribution of the training programs alone.

Moreover, although clinics were matched by the characteristics of study sites, physician-level features were not reported; consequently there was no baseline assessment of physicians, even though Aragonès et al. (2012), for example, reported some relevant data (gender, age, and years of professional practice). Recent empirical evidence, however, has pointed out that physician-level features are very important to consider. Another RCT (not included in this review) demonstrated that in order to change physicians’ behavior in depression care through educational programs, specific characteristics of the clinicians themselves must be addressed, such as their readiness to change (Shirazi et al., 2013). Thus, the reviewed studies’ lack of specificity on health providers’ characteristics and outlook represents a serious limitation for determining the true effectiveness of the training programs, as this information is crucial to correctly developing and evaluating interventions.

On the other hand, the impact of training components could be deduced on the basis of the existing literature, which has suggested utilizing a more systematic approach to the treatment process, since specific interventions have shown conflicting results (Bijl et al., 2004). Indeed, the results of the sole training trials included in this review are quite different from those of RCTs which have effectively implemented multi-component interventions. Gask et al. (2004) and Thompson et al. (2000), for one, have studied the impact of interventions focused only on training physicians, and their results showed no relevant differences between the control and intervention groups, suggesting that training programs focused only on physician continuing education have no impact on outcomes related to depression management, in contrast to multi-component interventions. For instance, Morrell et al. (2009) psychologically informed training approach with health

Fig. 1. Systematic review flow chart.
Table 1
Characteristics of the studies reviewed.

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<tr>
<th>Author (year, country)</th>
<th>Study design</th>
<th>Procedure</th>
<th>Comparison</th>
<th>Outcomes</th>
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<tr>
<td>Worrall et al. (1999), Canada</td>
<td>RCT. 42 FPs participated. 147 patients newly diagnosed with depression. FPs were assigned to IG (n = 22) or CG (n = 20). Patients were assigned to IG (n = 91) or CG (n = 56). 6-month follow-up.</td>
<td>All FPs were contacted regularly by a research assistant to encourage protocol compliance. Patients gave informed consent and completed CES-D for inclusion criteria assessment. All patients were treated as usual.</td>
<td>UC. Mailed a copy of the CPG but were given no specific instructions on their use.</td>
<td>Mean patient CES-D score (SD) at baseline CG 38.7 (8.1) vs IG 37.3 (8.9). Mean patient CES-D score (SD) at 6 month CG 22.2 (11.7) vs IG 19.4 (13.6). Mean patient CES-D gain score (SD) CG 15.5 (14.8) vs IG 19.3 (14.6). Improvements in Ham-D scores were significantly greater in the IG than in the UC group: -3.3 vs -2.0 at 6 weeks*, -5.6 vs -3.9 at 3 months**, and 9.2 vs 5.6 at 12 months***. At 12 months, IG patients reported significantly better social functioning, mental health, and general health perceptions than UC patients on the SF-20*. Educated and control groups did not differ for the primary study endpoints of improvement (at 6 weeks OR 1.99, 95% CI 0.84–1.68; and at 6 months OR 1.23, 95% CI 0.84–1.79) and patients still cases (at 6 weeks OR 0.95, 95% CI 0.66–1.38; and at 6 months OR 0.82, 95% CI 0.55–1.21) for the whole group with a HAD depression score of at least 8.</td>
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<td>Katzelnick et al. (2000), USA</td>
<td>RCT. 163 PCPs in 3 health maintenance organizations of USA were included. 407 depressed patients, all high utilizers, agreed to enrol, 218 in the IG and 189 in the UC group. Follow-up at 6 weeks, 3, 6 and 12 months.</td>
<td>A 2-stage telephone-screening was performed to identify high utilizers likely to benefit from depression treatment. Those screened positive for a major depressive episode according to SCID went through a second telephone interview to assess depression severity, using the 17-item Ham-D.</td>
<td>UC. No additional monitoring, case management, or psychiatric liaison services were provided.</td>
<td>Untrained GPs. Started seminars 2 months after education had been completed in the intervention group.</td>
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<td>Thompson et al. (2000), UK</td>
<td>RCT. 232 practices in the county of Hampshire, UK, were offered education. 59 practices (169 physicians) were randomly assigned, 1247 patients with current depressive symptoms, according to HAD. Follow-up at 6 weeks and 6 months.</td>
<td>Consecutive adult patients attending surgeries on selected days completed the hospital HAD scale before entering the consulting room. At each phase of the study every patient with a positive HAD depression score was followed up by postal HAD.</td>
<td>Treatment as usual.</td>
<td>At 6 months, the intervention improved the depression symptoms of patients beginning new treatment by 8.2 points (95% CI 0.2, 16.1, p-value = 0.04).</td>
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<td>Wells et al. (2000), USA</td>
<td>Cluster RCT. Matched clinics were randomized to UC, or 1 of 2 QI-programs. 181 primary care clinicians, from 46 PHC clinics, participated in the study. 1356 patients, with current depressive symptoms, were included. Follow-up at 6 and 12 months.</td>
<td>Study staff screened consecutive visitors over a 5- to 7-month period, using the affective disorder section of the CIDI.</td>
<td>QI patients were less likely to be depressed (95% CI) compared to patients in UC, at both 6-month (39.9% [36.8–42.9] vs 49.9% [45.8–54.0]) and 12-month follow-up (41.6% [38.5–44.7] vs 51.2 [46.7–55.8]).</td>
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<td>Rost et al. (2001), USA</td>
<td>Cluster RCT. Six out of twelve stratified practices were randomized into the intervention. 479 patients were enrolled. Follow-up of 6 months.</td>
<td>Two PCPs, one nurse and one administrative staff member in each practice received brief training to improve detection and management of depression. Administrative staff from enhanced and usual care practices recruited subjects meeting inclusion criteria.</td>
<td>UC. Clinical medical directors were mailed depression practice guidelines.</td>
<td>Untrained GP.</td>
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<td>Gask et al. (2004), UK</td>
<td>Cluster RCT. 18 and 20 GPs were recruited at Manchester and Liverpool, respectively. 189 currently depressed patients were recruited by GPs. Follow-up at 3 and 12 months.</td>
<td>All GP principals were approached by letter. All study GPs were asked to select patients attending surgery who fulfilled the inclusion criteria of the study.</td>
<td>QI-P was less likely to be depressed (95% CI) compared to patients in UC, at both 6-month (39.9% [36.8–42.9] vs 49.9% [45.8–54.0]) and 12-month follow-up (41.6% [38.5–44.7] vs 51.2 [46.7–55.8]).</td>
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<tr>
<td>Wells et al. (2004), USA</td>
<td>Cluster RCT. Participating clinics were matched prior to being randomized to UC, or 1 of 2 QI-programs. Clinicians and patients enrolled knew about their intervention status. 181 primary care clinicians, from 46 PHC clinics, participated into the study. 1356 patients, with current depressive symptoms, were included. Follow-up every 6 months for 24 months, then a 57-month follow-up was completed.</td>
<td>Study staff screened consecutive visitors over a 5- to 7-month period, using the affective disorder section of the CIDI. 991 completed the study follow-up period. Patients were asked to complete a telephone CIDI for depression and economic status, and a mailed survey at baseline. Then, the research group mailed follow-up surveys every 6 months for 24 months.</td>
<td>UC. Clinical medical directors were mailed depression practice guidelines.</td>
<td>There were no differences for clinical outcomes between groups. Ham-D score (95% CI) at 3 months – 0.9 (-3.1 to 1.3) and at 12 months – 1.9 (-4.1 to 0.3). GHQ-12 score (95% CI) at 3 months – 0.9, (-2.6 to 0.8) at 6 months – 0.4 (-1.7 to 0.9) and at 12 months – 0.8 (-2.1 to 0.6).</td>
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<td>Morrell et al. (2009), UK</td>
<td>Cluster RCT. 418 women, from 101 general practices in Trent participated. Clusters were randomly allocated to either cognitive behavioral or person centered approach IG or the control group UC in ratio 1:1:1. Women were sent a postal questionnaire at six weeks postnatally to collect demographic details, measure depressive symptoms using the EPDS, and measure social support and stressful life events using the measure of social relationships.</td>
<td>UC. Clinical medical directors were mailed depression practice guidelines.</td>
<td>Women scored significantly lower on the EPDS than UC at 6 months (3.1 to 1.3) and at 12 months (3.1 to 1.3). EPDS scores of patients beginning new treatment by 8.2 points (95% CI 0.2, 16.1, p-value = 0.04).</td>
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For women with a six-week EPDS ≥ 12, 45.6% in the CG vs 33.9% in the IG scored positive on the six month EPDS, with a difference of 11.7% (95% CI 0.4–22.9). Mean (SD) EPDS score at 6-month and 12-month postnatal was 11.3 (5.4) in the CG vs 9.2 (5.4) in the IG*.
Table 1 (continued)

<table>
<thead>
<tr>
<th>Author (year, country)</th>
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<th>Procedure</th>
<th>Comparator</th>
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<tr>
<td>Aragonès et al. (2012), Spain</td>
<td>Cluster, single-blinded (outcomes assessor), RCT.</td>
<td>Patients assigned to doctor's list at participating primary care centers were selected by trained participant GPs. GPs verified PHQ-9 severity criteria and performed the intervention. Pair-matched cluster randomization. Follow-up at 3, 6, and 12 months.</td>
<td>IG, intervention group; UC, control group.</td>
<td>At 12 months, mean (SD) PHQ-9 score was lower in IG compared to UC (4.98 [7.14] vs 11.90 [6.97], OR = 1.76). Rate of remission was higher (66.9% vs 51.5%, OR 1.9, 95% CI 1.2 – 2.9) and remission rate followed the same trend (48.8% vs 33.8%, OR = 1.76, 95% CI 1.1 – 2.9).</td>
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An important question remains unsolved: How can the evidence obtained in high-income countries be implemented in the heterogeneous context of LMICs, such as the Latin American and the Caribbean region? While the mental health care systems of this region have gone through major transformations since the Caracas Declaration in 1990, leading to the development of mental health policies and prompting the integration of mental health into primary care, there is still a wide gap in the degree of implementation at both the regional and country level (Caldas de Almeida and Horvitz-Lennon, 2010). Relevant barriers to success concern financial issues (lack of funds and inequitable distribution of resources), low levels of mental health policy execution, hospital-centered care, and shortage of trained human resources (Caldas de Almeida and Horvitz-Lennon, 2010; World Health Organization, 2013).

Given the existing disparities, future training programs for the management of depression in primary care services should address the local features of mental health systems and staff characteristics. Furthermore, as suggested by the reviewed evidence, multi-component interventions, rather than solely training programs, should be used and adapted to local idiosyncrasies. For example, task-shifting may be used in light of the lack of physicians in LMICs, and care could be re-organized according to available resources (World Health Organization, 2013).

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