

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 (EPDS); 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., 2005; 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 "education"[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 (Aragonès et al., 2012; Gask et al., 2004; Katzelnick et al., 2000; Morrell et al., 2009; Rost et al., 2001; Thompson et al., 2000; 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 (Aragonès 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. Aragonès 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 Aragonès 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 assessments, patient education, 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., 2009; 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 cognitive and behavioral skills. 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 (Aragonès et al., 2012; Gask et al., 2004; Katzelnick et al., 2000; Morrell et al., 2009; Rost et al., 2001; Thompson et al., 2000; Wells et al., 2000, 2004; Worrall et al., 1999), management of antidepressants (Aragonès et al., 2012; Gask

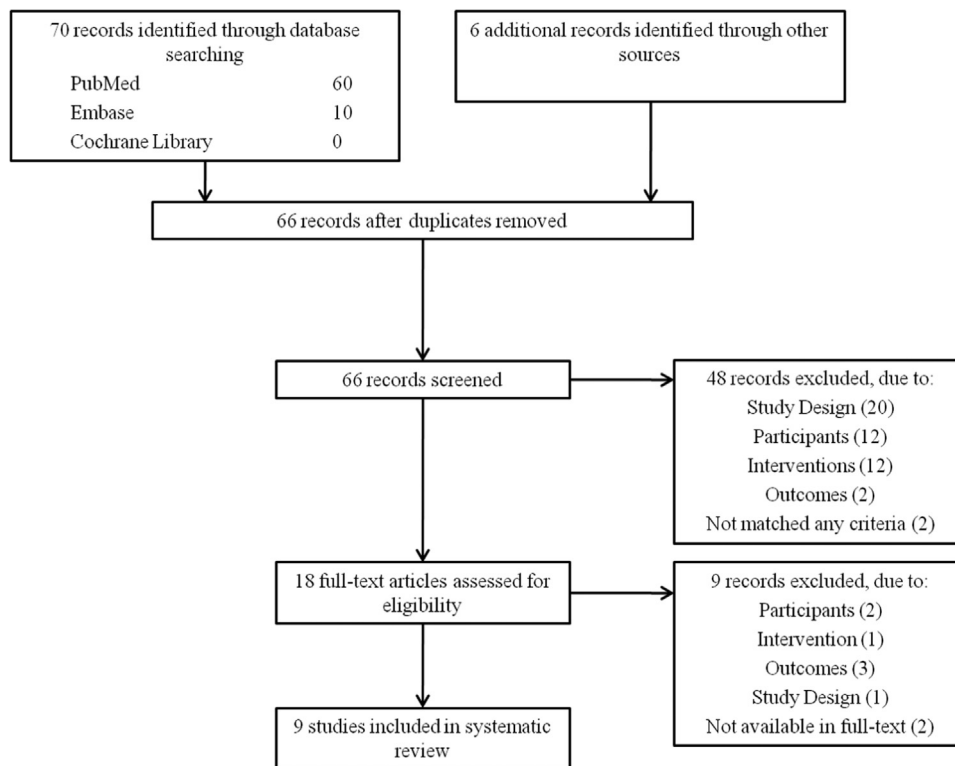


Fig. 1. Systematic review flow chart.

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; Morrell et al., 2009; Rost et al., 2001; Thompson et al., 2000; Wells et al., 2000, 2004), provided information and skills related to patient education (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

Table 1
Characteristics of the studies reviewed.

Author (year, country)	Study design	Procedure	Comparison	Outcomes
Worrall et al. (1999), Canada	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.	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.	UC. Mailed a copy of the CPG but were given no specific instructions on their use.	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)*.
Katzelnick et al. (2000), USA	RCT. 163 PCPs in 3 health maintenance organizations of USA were included. 407 depressed patients, all high utilizers, agreed to enroll, 218 in the IG and 189 in the UC group. Follow-up at 6 weeks, 3, 6 and 12 months.	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.	UC. No additional monitoring, case management, or psychiatric liaison services were provided.	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; -7.3 vs -4.0 at 6 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*.
Thompson et al. (2000), UK	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.	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.	Untrained GPs. Started seminars 2 months after education had been completed in the intervention group.	Educated and control groups did not differ for the primary study endpoints of improvement (at 6 weeks OR 1.19, 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.
Wells et al. (2000), USA	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.	Study staff screened consecutive visitors over a 5- to 7-month period, using the affective disorder section of the CIDI.	UC. Clinical medical directors were mailed depression practice guidelines.	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])**.
Rost et al. (2001), USA	Cluster RCT. Six out of twelve stratified practices were randomized into the intervention. 479 patients were enrolled. Follow-up of 6 months.	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.	Treatment as usual.	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).
Gask et al. (2004), UK	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.	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.	Untrained GP.	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).
Wells et al. (2004), USA	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.	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.	UC. Clinical medical directors were mailed depression practice guidelines.	Intervention effects on 57-month clinical outcomes showed that, relative to UC, QI-P lowered the adjusted rate of probable depressive disorder at follow-up by 7.4% (95% CI 0.1-14.6)* and QI-M lowered the rate by 5.7% (95% CI -0.5 to 11.9), the latter being non significant.
Morrell et al. (2009), UK	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.	GP, midwives and hospital obstetricians meet women early in pregnancy to plan care.	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)

Author (year, country)	Study design	Procedure	Comparison	Outcomes
Aragonès et al. (2012), Spain	Cluster, single blinded (outcomes assessor), RCT. Pair-matched cluster randomized allocation. 338 depressed patients, treated by 78 participant GPs at 20 PHC clinics, were included in the study. Follow-up at 3, 6, and 12 months.	Patients assigned to doctor's list at participating primary care centers were selected by trained participant GPs. GPs verified PHQ-9 severity criteria and DSM-IV criteria for major depression.	UC. Doctors were trained to diagnose and detect depression.	At 12 months, mean [SD] PHQ-9 score was lower in IG compared to UC (9.48 [7.14] vs 11.90 [6.97], OR = 1.76), but not statistically significant; the treatment response rate was higher (66.9% vs 51.5%, OR 1.9, 95%CI 1.2–3.1); and remission rate followed the same trend (48.8% vs 35.4%, OR 1.8, 95%CI 1.1–2.9).

RCT, randomized controlled trial; QI, quality improvement; PCP, primary care practices; PHC, primary health care; QOC, quality of care; UC, usual care; CID, Composite International Diagnostic Interview; CES-D, Centre for Epidemiologic Studies Depression scale; HRQOL, health related quality of life; HSU, health service utilization; QI-P, quality improvement-psychotherapy; GPs, general practitioners; CBT, cognitive behavioral therapy; IG, intervention group; GAD, generalized anxiety disorder; PHQ-9, Patient Health Questionnaire; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; DUSOI, Duke Severity Illness Checklist; PRIME-MD, Primary Care Evaluation of Mental Disorders; OR, Odds Ratio; CME, continuing medical education; CG, control group; SP, standardized patients; FP, family physician; HV, health visitors; Ham-D, Hamilton Depression Rating Scale. SCID, Structured Clinical Interview for DSM-IV, HAD, hospital anxiety and depression scale.

* $p \leq 0.05$.

** $p \leq 0.01$.

*** $p \leq 0.001$.

visitors for women with postnatal depression was shown to have good internal and external validity, providing sound evidence of the benefit of such multi-component interventions.

In addition, a common element of these multi-component interventions is task-shifting, in which health personnel without formal training in mental health performs tasks usually reserved for specialized personnel (World Health Organization, 2008). An example is the use of "case managers", nurses especially trained to perform tasks such as education, monitoring and follow-up care of the patient, as in Aragonès et al. (2012). In the context of primary care settings, this may reduce the workload of physicians and health care costs, and could promote or improve close collaboration of healthcare workers (World Health Organization, 2008).

This systematic review have several limitations. There was not a priori study protocol, this may hinder the rigor of this study. However, all authors previously agreed procedures following PRISMA statement (Moher et al., 2009), and there were no changes to previous agreements. Additionally, articles written in other languages than Spanish (native language of the authors) or English were excluded for the reviewing process, since it would have exceeded our existing resources. However, English has achieved a lingua franca status in science, and it seems reasonable to assume that the vast majority of studies related to this topic are written in this language. Another important limitation is the information sources restrictions, databases such as PSYCHINFO and CINAHL are missing, and we acknowledge that this could lead to an exclusion of several studies. Additionally, there was neither a structured critical appraisal of the included studies assessment, be it quality or risk of bias assessments, nor report on a possible publication bias among the included studies, just clinical judgment by researchers was applied in this matter.

In conclusion, considering the aforementioned evidence, it seems reasonable to suggest that physician and health staff's commitment to change, along with organizational changes in health services, may both boost the effect of training. These factors could explain the 'long-term effects' of these interventions (Wells et al., 2000, 2004).

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).

References

- Alvarado, R., Rojas, G., 2011. El programa nacional para el diagnóstico y tratamiento de depresión en atención primaria: una evaluación necesaria. *Rev. Méd Chile*

- 139 (5), 592–599. <http://dx.doi.org/10.4067/S0034-988720110005000005>.
- Alvarado, R., Vega, J., Sanhueza, G., Muñoz, M.G., 2005. Evaluación del programa para la detección, diagnóstico y tratamiento integral de la depresión en atención primaria, en Chile. *Rev. Panam. Salud Pública* 18 (4–5), 278–286. <http://dx.doi.org/10.1590/S1020-49892005000900008>.
- Aragonès, E., Piñol, J.L., Caballero, A., López-Cortacans, G., Casaus, P., Hernández, J. M., et al., 2012. Effectiveness of a multi-component programme for managing depression in primary care: a cluster randomized trial. The INDI project. *J. Affect Disord.* 142 (2012), 297–305.
- Araya, R., Rojas, G., Fritsch, R., Gaete, J., Rojas, M., Simon, G., et al., 2003. Treating depression in primary care in low-income women in Santiago, Chile: a randomized controlled trial. *Lancet* 361 (9362), 995–1000. [http://dx.doi.org/10.1016/S0140-6736\(03\)12825-5](http://dx.doi.org/10.1016/S0140-6736(03)12825-5).
- Bijl, D., van Marwijk, H.W., de Haan, M., van Tilburg, W., Beekman, A.J., 2004. Effectiveness of disease management programmes for recognition, diagnosis and treatment of depression in primary care. *Eur. J. Gen. Pract.* 10 (1), 6–12.
- Caldas de Almeida, J.M., Horvitz-Lennon, M., 2010. Mental health care reforms in Latin America: an overview of mental health care reforms in Latin America and the Caribbean. *Psych. Serv.* 61 (3), 218–221. <http://dx.doi.org/10.1176/appi.ps.61.3.218>.
- Davis, D.A., Thomson, M.A., Oxman, A.D., Haynes, R.B., 1995. Changing physician performance. A systematic review of the effect of continuing medical education strategies. *JAMA* 274 (9), 700–705. <http://dx.doi.org/10.1001/jama.1995.03530090032018>.
- Ferrari, A.J., Charlson, F.J., Norman, R.E., Patten, S.B., Freedman, G., Murray, C.J.L., et al., 2013. Burden of depressive disorders by country, sex, age and year: findings from the global burden of disease study 2010. *PLoS Med.* 10 (11), e1001547. <http://dx.doi.org/10.1371/journal.pmed.1001547>.
- Gask, L., Dowrick, C., Dixon, C., Sutton, C., Perry, R., Torgerson, D., et al., 2004. A pragmatic cluster randomized controlled trial of an educational intervention for GPs in the assessment and management of depression. *Psychol. Med.* 34, 63–72. <http://dx.doi.org/10.1017/S0033291703001065>.
- Katzelnick, D.J., Simon, G.E., Pearson, S.D., Manning, W.G., Helstad, C.P., Henk, H.J., et al., 2000. Randomized trial of a depression management program in high utilizers of medical care. *Arch. Fam. Med.* 9 (4), 345–351.
- Levav, I., Kohn, R., Montoya, I., Palacio, C., Rozic, P., Solano, I., et al., 2005. Training Latin American primary care physicians in the WPA module on depression: results of a multicenter trial. *Psychol. Med.* 35 (1), 35–45. <http://dx.doi.org/10.1017/S0033291704002764>.
- Ministry of Health of Chile, 2006. Segundo Régimen de Garantías Explícitas en Salud. [Online] Available from: (<http://www.minsal.cl/portal/url/item/73259fba7f95efafe04001011f011215.pdf>) (accessed: 13.01.14).
- Ministry of Health of Chile, 2013. Guía Clínica Depresión en personas de 15 años y más. Santiago: MINSAL.
- Ministry of Health of Chile, n/d. Programa Nacional de Diagnóstico y Tratamiento de la Depresión. [Online] Available from: (http://salunet.minsal.gov.cl/portal/page?_pageid=94,5030525&_dad=portal&_schema=PORTAL) (accessed: 13.01.14).
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., The PRISMA Group, 2009. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 6 (7), e1000097. <http://dx.doi.org/10.1371/journal.pmed.1000097>.
- Morrell, C.J., Slade, P., Warner, R., Paley, G., Dixon, S., Walters, S.J., et al., 2009. Clinical effectiveness of health visitor training in psychologically informed approaches for depression in postnatal women: pragmatic cluster randomised trial in primary care. *BMJ* 338, a3045. <http://dx.doi.org/10.1136/bmj.a3045>.
- Rojas, G., Araya, R., Fritsch, R., 2000. Salud mental, problem asplicosociales y atención primaria de salud. *Acta. Psicol. Am. Lat.* 46 (2), 119–126.
- Rost, K., Nutting, P., Smith, J., Werner, J., Duan, N., 2001. Improving depression outcomes in community primary care practice. *J. Gen. Intern. Med.* 16, 143–149.
- Schulberg, H.C., Katon, W., Simon, G.E., Rush, A.J., 1998. Treating major depression in primary care practice: an update of the agency for health care policy and research practice guidelines. *Arch. Gen. Psychiatry* 55 (12), 1121–1127. <http://dx.doi.org/10.1001/archpsyc.55.12.1121>.
- Shirazi, M., Lonka, K., Parikh, S.V., Ristner, G., Alaeddini, F., Sadeghi, M., et al., 2013. A tailored educational intervention improves doctor's performance in managing depression: a randomized controlled trial. *J. Eval. Clin. Pract.* 19 (1), 16–24. <http://dx.doi.org/10.1111/j.1365-2753.2011.01761.x>.
- Thompson, C., Kinmonth, A.L., Stevens, L., Peveler, R.C., Stevens, A., Ostler, K.J., et al., 2000. Effects of a clinical-practice guideline and practice-based education on detection and outcome of depression in primary care: Hampshire Depression Project randomised controlled trial. *Lancet* 355, 185–191.
- Vöhringer, P.A., Jimenez, M.I., Igor, M.A., Fores, G.A., Correa, M.O., Sullivan, M.C., et al., 2013. Detecting mood disorder in resource-limited primary care settings: comparison of a self-administered screening tool to general practitioner assessment. *J. Med. Screen.* 20 (3), 118–124. <http://dx.doi.org/10.1177/09691413133503954>.
- Wells, K., Sherbourne, C., Schoenbaum, M., Ettner, S., Duan, N., Miranda, J., et al., 2004. Five-year impact of quality improvement for depression. *Arch. Gen. Psychiatry* 61 (4), 378–386.
- Wells, K.B., Sherbourne, C., Schoenbaum, M., Duan, N., Meredith, L., Unützer, J., et al., 2000. Impact of disseminating quality improvement programs for depression in managed primary care. *JAMA* 283 (2), 212–220.
- World Health Organization, 2008. Task Shifting: Global Recommendations and Guidelines. World Health Organization, Geneva.
- World Health Organization, 2013. WHO-AIMS regional report on mental health systems in Latin America and the Caribbean. PAHO, Washington, DC.
- Worrall, G., Angel, J., Chaulk, P., Clarke, C., Robbins, M., 1999. Effectiveness of an educational strategy to improve family physicians' detection and management of depression: a randomized controlled trial. *CMAJ* 161, 37–40.