Review

Adult community health-promoting interventions in primary health care: A systematic review

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Abstract

Objective. To examine evidence on the effectiveness of health-promoting community interventions carried out in primary health care.

Methods. Systematic review of originals and systematic reviews of health-promoting community interventions with the participation of primary health care. A working definition of community activities was used in the inclusion criteria. Databases searched up to 2013: PUBMED, EMBASE, CINHAL, Web of SCIENCE, IBECS, IME, and PSICODOC. No restrictions on year of publication or design. Articles were reviewed by separate researchers to identify risks of bias.

Results. Fifty-one articles published between 1966 and 2013 were included: 11 systematic reviews and 40 originals that described 39 community interventions. There is evidence on the effectiveness of community interventions in reducing cardiovascular risk factors, encouraging physical exercise, preventing falls and improving self-care among chronic patients compared with usual individual care. The effectiveness of some interventions increases when the community is involved in their development. Most assessments show positive results despite design limitations.

Conclusions. The community approach may be more effective than the individual in usual preventive interventions in primary care. There is a lack of evidence on many community interventions in primary care and further research is needed.

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Introduction

The increase in life expectancy in all countries in the last century, together with the drop in nativity, has led to population ageing (Fernández-Ballesteros et al., 2013). This underlines the importance of active, healthy-ageing strategies whose lines of action necessarily involve providing people with tools to better manage their health, and thus to develop health-promoting interventions even though there are questions regarding the efficacy of these types of interventions (Renehan et al., 2012).

According to the Ottawa charter (WHO, 1986), health promotion consists of providing people with the means necessary to improve and exercise more effective control over their health. Its conception is linked to the idea of community action, as its focus is generally on the population and attempts to raise awareness and encourage community responsibility and involvement in their own activities. In turn, these ideas are closely linked to the origins and development of primary health care (PHC). This level of care is, in many countries like Spain, the foundation of the health system, mostly because of its role as a gatekeeper. It is ideally placed to develop health-promoting community interventions (Starfield et al., 2005) and is accessible to the majority of the population. It consists of multidisciplinary teams grouped in health centres located throughout the territory which, from a biopsychosocial perspective, allow comprehensive health care to the community.

Nevertheless, community interventions are underdeveloped in PHC and there are various reasons for this (March et al., 2014; Rubio-Valera et al., 2014; Guldan, 1996). There are barriers between professionals (doubts about effectiveness, self-efficacy to carry them out, low motivation, lack of training, etc.), community issues (resistance or reluctance among the population to take part in certain interventions, previous experiences of failure, cultural or linguistic barriers, etc.), institutional matters (biomedical model hegemony, guided incentives) and political aspects (political and economic context, health department priorities).

In recent decades, diverse initiatives have emerged to pool information on the effectiveness of health-promoting community interventions (Task Force on Community Preventive Services, National Institute for Health and Clinical Excellence, Regional Office for Europe’s Health Evidence Network, The Community Tool box) although most of these are not particular to PHC and are specific to certain types of intervention.

The aim of this review is to describe the available evidence on the effectiveness of health-promoting community interventions carried out with the participation of PHC in the adult population to promote active healthy ageing. So, our purpose is to explore the research developed about this topic to detect difficulties, limitations and future lines of research in this field.
Data extraction and analysis of methodological quality

All identified articles were independently reviewed by two study authors. Discrepancies were discussed and where agreement was not reached, they were evaluated by a third reviewer and noted in a register of review incidents.

During the critical reading process, the following relevant aspects were considered: a) features of the intervention; b) study methodology description; c) assessment of methodological quality; d) evaluation and analysis of results; and e) applicability of results to our context. All these aspects were evaluated in a previously piloted data-collection sheet designed for the review.

The interventions included were classified according to: aims (prevention of falls, reduction of cardiovascular risk, promotion of mental health, self-care and monitoring of chronic illnesses, diabetes control, participation in cancer screening programmes, appropriate use of health services, physical activity in the elderly) and type of intervention applied, distinguishing between: activities in the community (programmed actions carried out in the community such as physical exercise sessions); community-based interventions (direct community resources towards a goal, such as a campaign coordinated among entities to promote mental health); group education with participatory methodologies conducted by professionals (e.g., debate groups on self-care in chronic patients); and peer education (e.g., expert patients offering self-care sessions to other diabetics).

The methodology for the evaluation of intervention results was noted in the data-collection sheet (quantitative, qualitative or mixed, and type of design), description of the main variables and assessment results (positive, negative, mixed, and description and limitations).

Given the difficulty of measuring the quality of individual studies due to the heterogeneity of design and aims, it was decided to clearly define their objectives, design, results and limitations, and include an item to determine whether the intervention and its evaluation were correctly described using three response options: high, medium or low quality. The methodological quality of the reviews was measured using a modified version of the OQAQ (Overview Quality Assessment Questionnaire) (Oxman and Guyatt, 1991), which covers 5 aspects: search methods, inclusion criteria bias, methodological quality, combination of results and appropriate conclusions.

A descriptive analysis of the variables included was carried out along with a narrative description of the review results.

Results

Study selection

A total of 2004 records were identified; PUBMED (n = 1,551), EMBASE (n = 30), CINHAL (n = 177), Web of SCIENCE (n = 173), IBECs (n = 33), IME (n = 5) and Psicodoc (n = 35). Once identified, duplicates were eliminated and the records that met the required criteria underwent a selection process based on title and summary. Some 1847 records were excluded. In the second phase, the entire texts of the remaining 157 articles were reviewed, verifying that they met the inclusion criteria, and a further review based on the bibliographies of the originally selected articles was performed leading to the inclusion of 11 potentially eligible articles. The flow of review information is shown in Fig. 1.

Over 80% of the identified interventions considered the active participation of the community to which they were addressed. Mostly half (47.4%) incorporated cross-sector actions in conjunction with participatory teaching methods that considered the subjects as active rather than purely passive audience. The results of community participation in the interventions identified can be seen in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Participation of the community</th>
<th>Cross sector action</th>
<th>Participatory pedagogical methodology</th>
<th>Cross sector action + participatory pedagogical methodology</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>12 (31.6%)</td>
<td>3 (7.9%)</td>
<td>17 (44.7%)</td>
<td>32 (84.2%)</td>
</tr>
<tr>
<td>Passive</td>
<td>1 (2.7%)</td>
<td>4 (10.6%)</td>
<td>1 (2.7%)</td>
<td>6 (15.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>13 (34.2%)</td>
<td>7 (18.4%)</td>
<td>18 (47.4%)</td>
<td>38 (100%)</td>
</tr>
</tbody>
</table>

Fall prevention

Seven studies, three trials and four reviews were identified whose aims were: promotion of exercise to prevent falls and reduction of the incidence of injuries and fractures.

With regard to physical exercise interventions to reduce the number of falls among the elderly, a randomised controlled trial (Shumway-Cook et al., 2007) was unable to demonstrate a decrease in the rate of incidents of falls with respect to a control group (RR 0.75–IC 95%, 0.52–1.09) when applying thrice-weekly group exercise sessions, although they did achieve improvements in balance, mobility and leg-strength. In another study (Granh Kronhied et al., 2006), the adoption of preventive measures through community activities, which included advertising in the media and cooperation between services, also failed to reduce falls at two-year follow-up although an increase in physical activity was observed.

Gates et al. (2008) did not find results in their systematic review that supported the effectiveness of multifactorial interventions in the prevention of falls and fractures. It appeared that the number of falls had decreased but the result was modest 0.91 (IC 95%:0.82–1.02) and not significantly different compared with controls.

On the other hand, a study that evaluated a complex intervention, while not demonstrating reductions in falls at two-year follow-up, did
report a tendency towards a decrease in related complications (fractures, admissions, etc.) (Pujiula Blanch et al., 2010). Nevertheless, in a later study (Gillespie et al., 2012) on the effectiveness of interventions designed to reduce the incidence of falls, it was observed that multicomponent interventions carried out in groups or at home lowered the risk of falls by 15% and 22%, respectively. Taken together, all the interventions included significantly reduced the risk of fractures associated with falls by 67%.

Another review (McClure et al., 2005) that assessed the effectiveness of community-based interventions to reduce injuries sustained by the elderly in falls, where the unit of analysis was the community itself, noted that despite the design limitations, the six studies included reported a significant reduction (between 6 and 33%) in injuries related to falls.

**Reduction of cardiovascular risk (CVR)**

Several of the studies reviewed aimed to reduce cardiovascular risk (CVR) factors. Evaluation designs were heterogeneous: four randomised clinical trials, one non-randomised, one non-randomised community trial, two pre–post studies, one ecological and one descriptive.

Ferrer et al. (2009) did not demonstrate the effectiveness of an intervention based on referrals by a health care professional to group activities according to the patients’ risk profile. A subsequent study (Puig-Girbau et al., 2011) attempted to evaluate both improvement in clinical parameters and the management of monitoring measures through participatory pedagogy, group education workshops compared with usual care. While no improvements were noted in clinical parameters (BMI, heart rate) at one-year follow-up, the intervention group had increased control measures (blood tests, blood-pressure monitoring and reporting of habits). Although the intervention group achieved a reduction in nursing-care time, there was an increase in appointments and medication. On the other hand, results from a study (Park et al., 2011) on hypertensive elderly people demonstrated the efficacy of a multicomponent programme (group education, individual advice and physical exercise sessions) with multidisciplinary collaboration in reducing systolic pressure and improving self-care.

Only three of the studies based on community interventions included health measures (like mortality or coronary events) in addition to intermediate results (like intensity of the intervention) (Record et al., 2000, Weinehall et al., 2001, Farnkvist and Weinehall, 2006). These analysed CVR prevention campaigns used various community resources to achieve their goal producing positive results in lowering mortality (25–40%) and an improvement in CVR factors at ten-year follow-up.

Some studies used peer group education to encourage healthy lifestyles with different outcome measures. In a study by Haber (1996) improvements were observed in knowledge about healthy habits although the changes in habits were not measured. However, another study (Farooqi and Bhavsar, 2001) addressed to Asian immigrants did not significantly improve this type of knowledge. On the other hand, a study by Chambers et al. (2005), in which the intervention was carried out in pharmacies, improved both professional and patient satisfaction. Changes in CVR factors were not measured.

Another study reported on a complex weight-loss intervention for obese people (Laws, 2004) with incentives and training by professionals. This was an individual patient-centred approach using behavioural-change techniques in addition to patient group discussions. It achieved positive results at 2 years compared with usual care; a third of patients reduced their weight by more than 5%.

Finally, a systematic review (Taggart et al., 2012) assessed the impact of interventions focused on improving health literacy to reduce CVR factors. It was observed that group health education interventions were effective in achieving improvements in nutrition, increased physical activity, weight loss and self-efficacy. The individual intervention to help give up smoking was more effective than group or community interventions. In contrast, promotion of physical exercise or healthy eating appeared to be more effective in the group or community environment.

**Promotion of mental health**

Some interventions identified attempted to improve mental health and reach objectives such as reduction of depressive symptoms and...
social isolation or improvements in functional disability and quality of life.

One review (Frederick et al., 2007) aimed to describe the effectiveness of various interventions to reduce depression including individual and group psychotherapy, education or physical exercise. The panel of experts who took part in the review concluded that the only effective intervention was joint care management between distinct care models in which a health professional (psychiatrist, psychologist, nurse, social worker, etc.) plays a coordinating role with PHC in the treatment of depression. Also highlighted was the finding that group physical exercise sessions were more effective than prescribed exercise done at home.

Another review (Cattan et al., 2005) evaluated the effectiveness of health promotion interventions to reduce loneliness and isolation among the elderly. It was observed that group education, group social activities and physical exercise workshops all succeeded in reducing loneliness and isolation. It was also noted that the greater the involvement of the community in the development of the intervention, the greater its effectiveness.

A pre–post study without control groups (Phelan et al., 2002, 2006) achieved good results in an intervention to prevent functional decline in the elderly with the support of peers. The follow-up year demonstrated improvements in health/functional status and a reduction in hospitalisations. A more recent pre–post study (López-Téllez et al., 2012) that offered physical exercise sessions to elderly people at risk of social isolation achieved improvements in quality of life and functional capacity.

Two of the studies aimed to assess the benefits of a mental health intervention programme. Eades and Ager (2008) evaluated an art programme as a social health model addressed to anxious–depressive people, without a control group, which obtained improvements in mental health and quality of life. A non-randomised community trial (Zanjani et al., 2012) assessed a community awareness programme on mental health problems, drug abuse and ageing, and obtained improvements in willingness to give support to elderly people with mental health problems, although these improvements were not significant in terms of health at 18-month follow-up.

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Table 3
Community action intervention characteristics.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Design</th>
<th>Aims</th>
<th>Target population</th>
<th>Country</th>
<th>Description of intervention</th>
<th>Follow-up</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grahn Kronheden et al. (2006)</td>
<td>NRCT</td>
<td>Improve osteoporosis knowledge and elderly falls</td>
<td>Pop. general adult</td>
<td>Sweden</td>
<td>I: Campaign with educational sessions, advertising in the media, information and support from distinct community businesses and services. C: Communities without campaign.</td>
<td>2 years</td>
<td>Lifestyles, fractures, health status, safe behaviour and physical activity.</td>
<td>Mixed</td>
</tr>
<tr>
<td>Pujila Blanch et al. (2010)</td>
<td>NRCT</td>
<td>Reduce elderly falls</td>
<td>The elderly</td>
<td>Spain</td>
<td>I: Campaign combining individual intervention in doctor’s surgery and at home with advice + intervention among professionals with training and follow-up + dissemination of information among the population + intersectoral coordination with local council. C: Usual intervention.</td>
<td>2 years</td>
<td>Number of falls, fractures and medical care.</td>
<td>Negative</td>
</tr>
<tr>
<td>Cobiac et al. (2009)</td>
<td>RCT</td>
<td>Promote physical exercise</td>
<td>Pop. general adult</td>
<td>Australia</td>
<td>I1: Doctor’s individual prescription. I2: Medical referral to physiotherapist specialising in exercise. I3: Media campaigns. I4: Healthy routes + active transport strategy + promotional material (maps, leaflets ...). I5: Use of pedometers. I6: Advice and information via the web</td>
<td>1 year</td>
<td>Disability adjusted life years (DALY), Quality adjusted life years (QALY) and cost per intervention.</td>
<td>Positive</td>
</tr>
<tr>
<td>Farnkvist and Weinehall (2006)</td>
<td>NRCCT</td>
<td>Reduce CVR factors</td>
<td>Pop. general adult</td>
<td>Sweden</td>
<td>I: Community mobilisation on CVR factors through activities carried out by professionals with citizens’ support + media campaign + labelled food + collaboration with local businesses and services + detection of CVR. C: Usual intervention</td>
<td>10 years</td>
<td>Annual variation of CVR and activities carried out.</td>
<td>Positive</td>
</tr>
<tr>
<td>Record et al. (2000)</td>
<td>Ecological</td>
<td>Improve detection and follow-up of CV problems</td>
<td>Pop. general adult</td>
<td>USA</td>
<td>I: Coordinated community awareness programme with the doctor, interventions addressed to population with lowest educational level, professionals and community, employers recommending medical check-ups, and individual follow-up with life-habits advice from nurses.</td>
<td>+20 years</td>
<td>Coronary diseases and mortality, and intervention intensity of programmed activities performed.</td>
<td>Positive</td>
</tr>
<tr>
<td>Weinehall et al. (2001)</td>
<td>NRCT</td>
<td>Prevent CV events</td>
<td>Pop. general adult</td>
<td>Sweden</td>
<td>Population campaign with promotion of healthy activities, development by associations, sports clubs, businesses, communication media and health centres + individual advice in independent consultation for CVR</td>
<td>Interv 10 years</td>
<td>CVR factors and predicted cardiovascular mortality.</td>
<td>Positive</td>
</tr>
</tbody>
</table>
Self-care and control of chronic illnesses

Two studies that attempted to improve self-care and control of chronic pathologies through participatory group education obtained positive results. In a randomised controlled trial (Scott et al., 2004) on outpatients, hospitalisations and visits to accident and emergency departments (A&E) were reduced. Satisfaction with the PHC doctor, quality of life and self-efficacy all improved with respect to usual care. In another pre–post study on asthmatics (Tousman et al., 2007), without a control group, improvements were observed in spirometry, quality of life and self-management as well as a reduction in the use of emergency medication.

A systematic review (Yanez-Cadena et al., 2006) of the effectiveness of interventions to improve the treatment and control of chronic illnesses only included one intervention with a community approach. The authors concluded that to achieve good treatment, the patients should be actively involved in therapy decision-making within a proactive health system.

Diabetes control

Six studies were included: two randomised controlled trials (Anderson et al., 1995; Hornsten et al., 2005), two pre–post (Esden and Nichols, 2013; Choi and Rush, 2012) and two community trials, one non-randomised (Bray et al., 2005) and the other randomised (Khunti et al., 2012), and one systematic review (Norris et al., 2001). All assessed the effectiveness of a group education intervention with participatory methodology to improve disease control or self-care in patients with diabetes and all reported improvements in some clinical parameters (Table 5). Three of the studies also found improvements in self-efficacy in the management of diabetes. One study (Anderson et al., 1995) showed improvements in patients’ attitudes. Subsequently, in an intervention carried out by nurses (Esden and Nichols, 2013), knowledge of the disease improved significantly. On the other hand, in another trial (Khunti et al., 2012) improvements were found in health beliefs although without differences with respect to controls in clinical parameters at three-year follow-up.

A review (Norris et al., 2001) of the effectiveness of self-management interventions demonstrated improvements in knowledge, compliance and glycemic control at 6 months but no improvements in lipids, weight, blood pressure or physical activity. The authors concluded that education–al interventions based on active patient participation (empowerment model) could show greater effectiveness than those that were purely didactic.

Finally, one randomised controlled trial (Baradaran et al., 2006) that compared group education with an intercultural focus in ethnic minority groups with respect to usual care did not demonstrate significant differences in improvements in knowledge of diabetes or attitudes towards the disease.

Five health education interventions imparted by trained peers to improve self-care, knowledge or diabetes prevention obtained varied results. Three of these were applied only by peers and evaluated without comparison with a control group. One (Bazzano et al., 2009) detected improvements in BMI, waist circumference, service use, physical activity and quality of life. Another (Oba et al., 2011) that assessed a diabetes prevention programme addressed to patients at risk, found that the intervention achieved significant improvements in physical activity, BMI, waist circumference and systolic pressure. On the other hand, a programme addressed to Turkish immigrants (Uitewaal et al., 2004) was rated highly by patients and professionals although the loss to study of 40% of participants hampered evaluation of its effectiveness.

Baksi et al. (2008) compared the intervention carried out by a trained peer with that conducted by a health professional without finding any differences in knowledge, participation or clinical parameters.
However, in an intervention (Barceló et al., 2010) where group education was imparted by peers and professionals together, improvements in glyceric index were achieved with respect to usual care.

Table 5
Education by peers. Intervention characteristics.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Design</th>
<th>Aims</th>
<th>Target population</th>
<th>Country</th>
<th>Description of intervention</th>
<th>Follow-up</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phelan et al. (2002), Phelan et al. (2006)</td>
<td>Pre-post</td>
<td>Prevent functional decline</td>
<td>The elderly</td>
<td>USA</td>
<td>Individual follow-up by nurses and offer of: a) physical exercise sessions. b) Self-care course. c) Support and advice from a peer assigned as a “health mentor”.</td>
<td>1 year</td>
<td>Health status, functional status and hospitalisations.</td>
<td>Positive</td>
</tr>
<tr>
<td>Haber (1996)</td>
<td>Pre-post</td>
<td>Health promotion</td>
<td>Elderly at risk of social exclusion</td>
<td>USA</td>
<td>I: Training of leaders in an elderly persons’ day centre to encourage health promotion activities in the centre.</td>
<td>1 month</td>
<td>Self-efficacy and self-esteem of leaders and promoted actions.</td>
<td>Positive</td>
</tr>
<tr>
<td>Farooqui and Bhavsar (2001)</td>
<td>Pre-post</td>
<td>Promote healthy lifestyles</td>
<td>Asian immigrants</td>
<td>United Kingdom</td>
<td>I: Training of professionals in CVR + community sensitisation campaign with sessions carried out by trained Asian peers.</td>
<td>None</td>
<td>Peer activities, assessment and knowledge of participants.</td>
<td>Negative</td>
</tr>
<tr>
<td>Chambers et al. (2005)</td>
<td>Descriptive</td>
<td>Improve detection and follow-up of CV problems</td>
<td>The elderly</td>
<td>Canada</td>
<td>I: Education sessions for health and CVR imparted in pharmacies by trained peers. CV risk profile is determined followed by referral to general practitioners if it is high.</td>
<td>None</td>
<td>Patient peer professional satisfaction, and participation in workshops.</td>
<td>Negative</td>
</tr>
<tr>
<td>Bazzano et al. (2009)</td>
<td>Pre-post</td>
<td>Improve diabetes control</td>
<td>Diabetics or obese</td>
<td>USA</td>
<td>I: Education and physical activity workshops imparted or promoted by “peer mentors”.</td>
<td>Interv 7 months</td>
<td>BMI, waist circumference, service use, nutrition, physical activity and quality of life.</td>
<td>Positive</td>
</tr>
<tr>
<td>Oba et al. (2011)</td>
<td>Pre-post</td>
<td>Improve self-care in diabetes</td>
<td>Diabetic Turkish immigrants</td>
<td>Netherlands</td>
<td>I: Group and individual education, imparted by a trained person of Turkish origin.</td>
<td>3 months</td>
<td>Requires review</td>
<td>Positive</td>
</tr>
<tr>
<td>Oba et al. (2011)</td>
<td>Pre-post</td>
<td>Diabetes prevention</td>
<td>Prediabetics</td>
<td>Thailand</td>
<td>I: Community volunteers trained to offer nutrition and physical exercise sessions.</td>
<td>3 months</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Baksi et al. (2008)</td>
<td>RCT</td>
<td>Improve knowledge of diabetes</td>
<td>Diabetics</td>
<td>United Kingdom</td>
<td>I: Diabetes group imparted by a trained peer education. C: the same imparted by a health professional.</td>
<td>6 months</td>
<td>Knowledge, participation, glycosylated haemoglobin and diabetic care profile.</td>
<td>Negative</td>
</tr>
<tr>
<td>Barceló et al. (2010)</td>
<td>RCT</td>
<td>Improve self-care in diabetes</td>
<td>Diabetics</td>
<td>Mexico</td>
<td>I: health education imparted by professionals with the support of peers. C: Usual follow-up.</td>
<td>18 months</td>
<td>Glycemic control, CVR, doctor and patient satisfaction, and health care workload</td>
<td>Positive</td>
</tr>
<tr>
<td>Vivilaki et al. (2005)</td>
<td>Descriptive</td>
<td>Improve cervical cancer screening</td>
<td>Elderly women</td>
<td>Greece</td>
<td>I: Training of a group of elderly women to arrange group visits to rural hospitals to undergo cervical tests.</td>
<td>None</td>
<td>Participation, women recruited, screening antecedents.</td>
<td>Positive</td>
</tr>
<tr>
<td>Lowe et al. (2004)</td>
<td>Pre-post + qualitative</td>
<td>Improve skin cancer screening</td>
<td>General adult population</td>
<td>Australia</td>
<td>I: Community dissemination of educational materials + media campaign + community members trained to carry out educational and dissemination activities</td>
<td>None</td>
<td>Acceptability, satisfaction and knowledge of programme and mammograms.</td>
<td>Positive</td>
</tr>
<tr>
<td>Urban et al. (1995)</td>
<td>NRCT</td>
<td>Improve breast cancer screening</td>
<td>Women</td>
<td>USA</td>
<td>I: For a 1 year period, doctors and community women carry out awareness raising and educational activities.</td>
<td>Interv 1 year</td>
<td>Presentation of interventions promoting screening and mammography use.</td>
<td>Negative</td>
</tr>
<tr>
<td>Dick et al. (2007)</td>
<td>Mixed: RCT + qualitative</td>
<td>Control of tuberculosis and other pathologies</td>
<td>Rural communities with no access to services</td>
<td>South Africa</td>
<td>I: Health-promotion community activities carried out by trained members of the community, with the support of health technicians. C: No community intervention.</td>
<td>None</td>
<td>Effectiveness and cost-effectiveness in reducing tuberculosis prevalence.</td>
<td>Positive</td>
</tr>
<tr>
<td>Hale et al. (1997)</td>
<td>Descriptive</td>
<td>Improve health education</td>
<td>General adult population</td>
<td>USA</td>
<td>I: recruitment through religious institutions of volunteers to be carried out and coordinate health education actions.</td>
<td>2 years</td>
<td>Satisfaction with course and organised activities.</td>
<td>Mixed</td>
</tr>
</tbody>
</table>


Participation in cancer screening programmes
Three studies attempted to improve participation in screening programmes for distinct types of cancer through trained peers. Although two of these showed some differences in design and assessment (without a control group or baseline measurements, only process results), an increase in participation was achieved. Specifically, a programme for cervical cancer (Vivilaki et al., 2005) increased the rate of compliance by 52.1% and a programme for skin cancer (Lowe et al., 2004) raised community awareness by 30% after 4 months of application. Similarly, in a non-randomised community clinical trial to increase participation in a breast-cancer screening programme (Urban et al., 1995) no differences between communities were found after one year.

Appropriate use of health services
One of the studies based on the participation of volunteers to coordinate health education actions showed good results related to satisfaction although effectiveness was not measured (Hale et al., 1997).

A review (Hayes et al., 2012) that assessed the effects of collaboration between health entities and local government to obtain improvements in the health of the population did not find sufficient evidence of effectiveness compared with standard services. The authors suggested that most studies have difficulties in demonstrating solid evidence of effectiveness due to lack of detail, robustness of design and specific health outcome results.
Physical activity in the elderly

Three studies and one review explored the effectiveness of physical exercise promotion programmes for the elderly. The studies were a community trial (Munro et al., 2004) that applied a programme of physical exercise sessions twice per week, another trial (Guisi et al., 2008) that involved walking for elderly people who were overweight or suffering from moderate depression, and a community programme (Cobiac et al., 2009) with media campaigns and pedometer promotion. The systematic review (Garrett et al., 2011) concluded that the majority of physical exercise promotion interventions in PHC (walks, groups or brief advice) were more cost-effective than exercise activities that required the supervision of a professional. The prescription of exercise at a consultation or brief advice offered by email or telephone is more cost-effective (in QALYs, quality-adjusted life-years) than directed activities (walking groups or sessions in a sports centre). The group exercise sessions are more cost-effective that the sports-centre sessions. Furthermore, interventions carried out by nurses are more cost-effective than those conducted by doctors.

On the other hand, a community trial (Dick et al., 2007) demonstrated that an intervention in a rural setting without access to health services in which members of the community were trained to carry out health promotion for tuberculosis control was both effective and cost-effective.

Discussion

The results of this review indicate that although there is insufficient evidence on the effectiveness of many community interventions developed with PHC participation, they have proven to be effective in promoting self-care in people with chronic illnesses, in encouraging physical activity and in controlling CVR factors. Community interventions appear to be effective in achieving clinical improvements, are cost effective and
demonstrate improvements in self-care components such as self-efficacy or knowledge of the disease. Many of the selected interventions combine the community aspect with an individual intervention in the professional’s surgery as these approaches are perfectly compatible and complementary. The results suggest that in some of them, such as those intended to reduce weight, improve nutrition or increase physical activity, the group/community approach may be more beneficial. They also indicate that active patient participation can increase the effectiveness of some interventions, including those designed to reduce loneliness in the elderly, improve the care of people with chronic illnesses, or have a positive impact on clinical parameters in diabetic patients. In the opinion of this research team, social prescription (Bradling and House, 2009) could be a useful health-promotion strategy as it is efficient in community resource use, facilitates continuity between individual care and the focus on the population in general, and overcomes some barriers among professionals to health promotion (Rubio-Valera et al., 2014).

It should be pointed out that studies that evaluate interventions in mental health, weight loss or those that use group education imparted by peers, are somewhat scarce considering that these are relatively common interventions in PHC. Same with the appropriate use of health services, where the few identified studies showed no evidence of efficacy. In contexts like ours, where access to the health system is easy and free, this kind of intervention could be really interesting if efficacy was demonstrated. Further research in these areas is needed.

Although most of the interventions identified achieved positive results in their assessments, design limitations hindered their inclusion within the body of evidence. It is essential to adapt the designs which must reduce the risk of bias and, consequently, contribute more to the evidence of the effectiveness of the interventions, to the assessment of community interventions. To reach this objective, it is important to create strategic alliances between the areas most related to the research world, that is, public health, universities or research teams within the health system, and those who carry out the interventions, whether they are PHC professionals or NGOs, along with community resources. Assessments should have the capacity to include community designs (Macintyre, 2011), involve participants in their development (Cofino et al., 2005) and measure long-term health outcomes without overlooking other key promotion components such as health literacy (Nutbeam, 2000) or self-efficacy (Rubio-Valera et al., 2014). There is a growing body of literature advocating the development of new assessment approaches for these types of interventions (Rychetnik et al., 2002; Navarro et al., 2007; Craig et al., 2012) that would facilitate their translation to practice (Glasgow et al., 2003).

This review has a number of limitations, most of which are related to the difficulties of evaluation and publication of the results of health-promoting community interventions which, in turn, affect research on this topic. For instance, “community intervention” is not a descriptor in the majority of bibliographic databases in the health sciences and, as a result, this review opted for search strategies that combined more open descriptors such as “health promotion” or “health education”. This meant that search results were less specific and that the majority were discarded when the review of titles and summaries was carried out. Moreover, most sources consulted had a clear bias towards bibliographies in English (as the results demonstrate), even though Latin America, for example, has a long, well-established tradition of carrying out community interventions to promote health.

Community interventions present many obstacles in terms of assessment (Guldan, 1996, Nilsen, 2006, Cofino et al., 2005; Macintyre, 2011) given that: the results of health promotion are not usually measurable in the short term; the interventions are complex with subjects of population studies so that it is difficult to perform random selections and use traditional assessment-effectiveness designs that determine causal relationships; and, finally, they involve specific contexts where development requires the input of the views of medical professionals and participants.

The lack of publication of the assessments or the choice of non-indexed journals may be due to the fact that the contexts where these interventions are frequently carried out are far from the academic interests that use bibliometric impact to evaluate scientific production. Furthermore, it is likely that medical research journals also have a negative bias with regard to the publication of community interventions that do not always conform to the hegemony in biomedical discourse. Thus, when interventions are carried out and either not published or published in journals or reports that are difficult to identify in a bibliographic search, this indicates that a bias would be found in any review of community activities. In a previous review focused only on Spain, the grey literature was one of the main sources where documents could be obtained (March et al., 2011). This review did not search the grey literature due to identification issues at the international level.

A strength of this study is the flexibility in the assessment selection criteria, not restricting them to clinical trials, as this allowed identification of those interventions that lack evidence of effectiveness. The definition of “community intervention”, arising from a consensus reached by a panel of experts within the framework of a distinct research project (March et al., 2011), is specific enough to be operative but also wide enough to cover the actions in which PHC participates in the community, whether that involves macro-actions such as mobilising the community, micro-actions such as group health education that considers the group as an active subject, or intersectoral action.

Conclusions

There is evidence of the effectiveness of health education interventions, imparted by professionals using participatory methodologies or by trained peers, in improving self-care in people with chronic illnesses. Likewise on the effectiveness of community-based programmes which involve the use of distinct community resources to reduce CVR factors. Offering group physical exercise activities (walks, sports-centre workshops) is very effective for the elderly and cost-effective for the general population.

Results appear to indicate that some interventions work better in a group/community environment than in the individual and that greater involvement of patients and the community in interventions improves their effectiveness. Bearing in mind that group/community interventions are compatible and complementary with individual ones, it can be concluded that it is important to continue conducting research into
their effectiveness, especially in particular areas where there are no assessments that contribute to the available evidence.

Conflict of interest
The authors declare that they have no conflict of interest.

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