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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.

Contents

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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 his 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.

Methods

A systematic review of the literature was conducted according to guidelines described in the PRISMA declaration covering the publication of systematic reviews and meta-analyses (Urrutia and Bonfill, 2010).

Eligibility criteria

Originals and systematic reviews of evaluations (regardless of type of design) of health-promoting community interventions carried out in PHC which met the following criteria:

- Addressed to the general population or those over 40 years old.
- Focused on health promotion, that is, they attempt to provide people with the means necessary to improve and exercise more effective control over their health and illness processes.
- Participation of PHC professionals in intervention design, development, or recruitment/referral of patients and their assessment.
- Active community participation in the design, development and/or evaluation of the intervention, or acting as motivators/promoters. For this article we understand by community groups showing common characteristics, needs or interests.
- If participation is not active, they are included only if they formed part of an intersectoral action (collaboration between the health sector and others such as education, social services, and NGOs) or group health education that explicitly states that participatory methodologies are used.

Excluded were:

- Editorials, letters to the editor, descriptions of experiences without assessment results, or articles on theory.
- Interventions with an exclusively individual approach.
- No PHC participation.

Search strategies

Searches of electronic databases were carried out: PUBMED, EMBASE, CINHAL, Web of SCIENCE, IBECS, IME and PSICODOC. The following search terms were used as free text descriptors in the title, summary or keywords without time restrictions and up to December 2013 in the English, French and Spanish languages: ("Program Evaluation" OR "Outcome Assessment" AND "Primary Health Care" OR "Family Practice" OR "General Practitioners" OR "General Practice" AND "Health Promotion" OR "Health Education" OR "community" AND "Aged" OR "Adult"). The search was completed with a secondary review of the bibliographies of identified articles.

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 included 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 consider the subjects as active rather than purely passive audience. The results of community participation in the interventions identified can be seen in Table 1.

Study characteristics

Fifty-one articles published between 1995 and 2013 met the inclusion criteria: 11 systematic reviews and 40 originals that described 39 interventions, one of which was described in two documents (Phelan et al., 2002, 2006). The reviews always included more than one country and 70% surpassed the cut-off point of 14 on the OQAQ. Their characteristics are shown in Table 1. Of the originals, 15 were from the United States, 6 from the United Kingdom, 4 from Sweden and 4 from Spain. The remainder came from various European, North and South American, and Asiatic and Oceanic countries. Eighteen originals were considered to be of high quality, 19 medium and 2 low. Regarding design, 16 were randomised controlled trials (3 of them were community trials), and 7 were non-randomised (3 community trials). Of the other articles, 12 were quasi-experimental studies, pre–post with no control group, 1 was a pre–post with a ten-year follow-up and ecological analysis, and 3 only collected descriptive results of the process or intervention results. More than 50% evaluated results through quantitative methodology (27 of 39) while the others combined quantitative with qualitative. The features of the interventions can be seen in Tables 2, 3, 4 and 5 according to intervention type. Table 6 shows a summary of the evidence gathered. The interventions were heterogeneous, mostly complex, without clear differentiation of components. The majority were based on group health education, whether that was with the support of trained peers or conducted by professionals applying participatory, pedagogical methodologies. An evidence summary is presented in Table 7.

The implication of PHC in the community interventions was different too: In 29 of them (76.3%) PHC professionals participated in the recruitment and referral of individuals; they performed the intervention in 32 (84.2%); participated in the intersectorial group in 18 (47.3%); and collaborated in the evaluation in 18 (47.3%). In 11 (30%) interventions, PHC participated in those four moments of the process (recruitment, intervention, intersectorial participation and evaluation), and in 12 more, participated in at least three.

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 (Grahn Kronhed 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

Table 1
Community participation in the identified interventions.

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

Table 2
Summary of reviews included.

Reference	Selection	Health focus	Target population	Type of intervention	Results	OQAQ
Gillespie et al. (2012)	RCT/quasi-experimental	Prevention of falls/physical activity	The elderly	Multifactorial: combination of home or group physical exercise/suitability of housing/	Positive	18++
Gates et al. (2008)	RCT and quasi-experimental	Prevention of falls	The elderly	Group education Multifactorial Educational programme Referrals	Positive	17++
McClure et al. (2005)	CCT	Prevention of falls	The elderly	Community action	Positive	17++
Cattan et al. (2005)	Quantitative (RCT, community, dissemination)	Social isolation	The elderly	Guided group activities (walks, physical exercise workshops) Education by peers Community action Individual	Mixed	15++
Garrett et al. (2011)	RCT	Physical exercise	General population	Group activities (gym sessions, walks) Individual (prescription, brief advice by email or telephone)	Positive	16++
Taggart et al. (2012)	RCTs and quasi-experimental	Health literacy	General population	Group education Individual (from consultation)	Mixed	17++
Frederick et al. (2007)	Quantitative	Mental health	The elderly	Physical exercise group activities Group education Group therapy Individual (home exercise prescription)	Mixed	14+
Yanez-Cadena et al. (2006)	RCT	Improve quality	Chronic patients	Groups with participatory pedagogy Community action	Positive	11−
Norris et al. (2001)	RCT	Diabetic self-care	Diabetics	Group education with participatory pedagogy Didactic group activities	Positive	12−
Hayes et al. (2012)	RCT/quasi-experimental	Collaboration (local agent and health)	General population	Community action	Mixed	18++
George et al. (2012)	RCT/pre–post	Physical activity + diet	Men ≥ 18	Group/individual/written material/Internet/ Community action	Positive	10−

RCT: randomised controlled trial; CCT: community trial; OQAQ (Overview Quality Assessment Questionnaire valour): ++ (high quality), + (medium quality), − (low quality).

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

Table 3
Community action intervention characteristics.

Intervention	Design	Aims	Target population Country	Description of intervention	Follow-up	Outcome measures	Results
Grahn Kronhed et al. (2006)	NRCT	Improve osteoporosis knowledge and elderly falls	Pop. general adult Sweden	I: Campaign with educational sessions, advertising in the media, information and support from distinct community businesses and services. C: Communities without campaign.	2 years	Lifestyles, fractures, health status, safe behaviour and physical activity.	Mixed
Pujiula Blanch et al. (2010)	NRCT	Reduce elderly falls	The elderly Spain	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.	2 years	Number of falls, fractures and medical care.	Negative
Cobiac et al. (2009)	RCT	Promote physical exercise	Pop. general adult Australia	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	1 year	Disability adjusted life years (DALY), Quality adjusted life years (QALY) and cost per intervention.	Positive
Farnkvist and Weinehall (2006)	NRCCT	Reduce CVR factors	Pop. general adult Sweden	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	10 years	Annual variation of CVR and activities carried out.	Positive
Record et al. (2000)	Ecological	Improve detection and follow-up of CV problems	Pop. general adult USA	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.	+20 years	Coronary diseases and mortality, and intervention intensity of programmed activities performed.	Positive
Weinehall et al. (2001)	NRCT	Prevent CV events	Pop. general adult Sweden	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	Interv 10 years	CVR factors and predicted cardiovascular mortality.	Positive
Zanjani et al. (2012)	NRCCT	Raise awareness of mental health problems	Pop. general adult USA	I: Community campaign with training of community agents, community identification of mental health problems, distribution of promotional material and media campaign. Semi-control: Usual follow-up + media campaign. C: Usual follow-up.	Interv 1.5 years	Health status knowledge and awareness of mental health problems and ageing.	Mixed

Pop: population. I: intervention. C: control. RCT: randomised controlled trial; NRCT: non-randomised controlled trial; RCCT: randomised community trial; NRCCT: non-randomised community clinical trial. Interv: intervention duration when there is no post-intervention follow-up. CVR: cardiovascular risk. Mixed: positive and negative results depending on study variables (please see text).

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.

Table 4
Group activity intervention characteristics.

Intervention	Design	Aims	Target population Country	Description of intervention	Follow-up	Outcome measures	Results
Shumway-Cook et al. (2007)	RCT	Prevent falls	The elderly USA	I: Multifaceted: 3 weekly exercise sessions + fall prevention talks + reporting fall risk measures to doctor. C: Usual intervention.	1 year	Rate of falls	Negative
López-Téllez et al. (2012)	Pre–post	Improve quality of life and physical condition	The elderly at risk of social exclusion Spain	I: Physical exercise sessions twice per week and health education.	6 months	Quality of life and functional status.	Positive
Park et al. (2011)	RCT	Improve control of hypertension	Elderly with hypertension South Korea	I: Physical exercise sessions and health education. C: Usual intervention.	1 year	Self-care, self-efficacy, quality of life and physical exercise.	Positive
Gusi et al. (2008)	RCT	Promote physical exercise	Elderly overweight or with moderate depression Spain	I: Guided walks in public parks. C: Usual intervention + physical exercise advice.	6 months	Cost-utility for improvement of physical exercise and quality of life.	Positive
Munro et al. (2004)	RCCT	Promote physical exercise	The elderly United Kingdom	I: Invitation to take part in physical exercise sessions led by a monitor trained in civic centres, and in other mobility and social interaction activities (bowling, swimming, walks, etc.).	2 years	Mortality, hospital use, health status (SF36) and cost-utility.	Mixed
Ferrer et al. (2009)	RCT	Promote healthy lifestyles	Adults with CVR USA	I: Medical assistants identify and refer patients according to risk profile to general practitioners and/or interventions carried out by the health system or community: Physical activity sessions, cooking classes, etc. C: Usual treatment.	1 year	Lifestyles	Negative
Eades and Ager (2008)	Pre–post + qualitative	Improve mental health treatment	Anxious or mildly/moderately depressed United Kingdom	I: Referral to an artistic creation programme (painting, narration, etc.) led by specialists.	No	Health status, anxiety, mental health.	Positive

I: intervention. C: control. RCT: randomised clinical trial; NRCT: non-randomised controlled trial; RCCT: randomised community trial; NRCCT: non-randomised community trial. Interv: intervention duration. CVR: cardiovascular risk. Mixed: positive/negative results depending on study variables (please see text).

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, knowledge, 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 educational 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.

Table 5
Education by peers. Intervention characteristics.

Intervention	Design	Aims	Target population Country	Description of intervention	Follow-up	Outcome measures	Results
Phelan et al. (2002), Phelan et al. (2006)	Pre–post	Prevent functional decline	The elderly USA	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".	1 year	Health status, functional status and hospitalisations.	Positive
Haber (1996)	Pre–post	Health promotion	Elderly at risk of social exclusion USA	I: Training of leaders in an elderly persons' day centre to encourage health promotion activities in the centre.	1 month	Self-efficacy and self-esteem of leaders and promoted actions.	Positive
Farooqi and Bhavsar (2001)	Pre–post	Promote healthy lifestyles	Asian immigrants United Kingdom	I: Training of professionals in CVR + community sensitisation campaign with sessions carried out by trained Asian peers.	None	Peer activities, assessment and knowledge of participants.	Negative
Chambers et al. (2005)	Descriptive	Improve detection and follow-up of CV problems	The elderly Canada	I: Education sessions for health and CVR imparted in pharmacies by trained peers. CV risk profile is determined followed by referral to general practitioner if it is high.	None	Patient, peer and professional satisfaction, and participation in workshops.	Negative
Bazzano et al. (2009)	Pre–post	Improve diabetes control	Diabetics or obese USA	I: Education and physical activity workshops imparted or promoted by "peer mentors".	Interv 7 months	BMI, waist circumference, service use, nutrition, physical activity and quality of life.	Positive
Uitewaal et al. (2004)	Pre–post	Improve self-care in diabetes	Diabetic Turkish immigrants Netherlands	I: Group and individual education, imparted by a trained person of Turkish origin.	3 months	Glycemic control, CVR, doctor and patient satisfaction, and health care workload	Requires review 40% lost to study
Oba et al. (2011)	Pre–post	Diabetes prevention	Prediabetics Thailand	I: Community volunteers trained to offer nutrition and physical exercise sessions.	3 months	Lifestyles, diabetes risk, BMI, blood pressure and waist circumference.	Positive
Baksi et al. (2008)	RCT	Improve knowledge of diabetes	Diabetics United Kingdom	I: Diabetes group imparted by a trained peer education. C: the same imparted by a health professional.	6 months	Knowledge, participation, glycosylated haemoglobin and diabetic care profile.	Negative
Barceló et al. (2010)	RCCT	Improve self-care in diabetes	Diabetics Mexico	I: health education imparted by professionals with the support of peers. C: Usual follow-up.	18 months	Glycemic index and problems with diabetes.	Positive
Vivilaki et al. (2005)	Descriptive	Improve cervical cancer screening	Elderly women Greece	I: Training of a group of elderly women to arrange group visits to rural hospitals to undergo cervical tests.	None	Participation, women recruited, screening antecedents.	Positive
Lowe et al. (2004)	Pre–post + qualitative	Improve skin cancer screening	General adult population Australia	I: Community dissemination of educational materials + media campaign + community members trained to carry out educational and dissemination activities	None	Acceptability, satisfaction and knowledge of programme and mammograms.	Positive
Urban et al. (1995)	NRCCT	Improve breast cancer screening	Women USA	I: For a 1 year period, doctors and community women carry out awareness raising and educational activities.	Interv 1 year	Presentation of interventions promoting screening and mammography use.	Negative
Dick et al. (2007)	Mixed: RCCT + qualitative	Control of tuberculosis and other pathologies	Rural communities with no access to services South Africa	I: Health-promotion community activities carried out by trained members of the community, with the support of health technicians. C: No community intervention.	None	Effectiveness and cost-effectiveness in reducing tuberculosis prevalence.	Positive
Hale et al. (1997)	Descriptive	Improve health education	General adult population USA	I: recruitment through religious institutions of volunteers to be trained to carry out and coordinate health education actions.	2 years	Satisfaction with course and organised activities.	Mixed

I: intervention. C: control. RCT: randomised controlled trial; NRCT: non-randomised controlled trial; RCCT: randomised community trial; NRCCT: non-randomised community trial. Interv: intervention duration. CV: cardiovascular. CVR: cardiovascular risk. Mixed: positive/negative depending on study variables (please see text). BMI: body mass index.

However, in an intervention (Barceló et al., 2010) where group education was imparted by peers and professionals together, improvements in glycemic index were achieved with respect to usual care.

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.

Table 6
Characteristics of group education interventions with participatory pedagogy.

Intervention	Design	Aims	Target population Country	Description of intervention	Follow-up	Outcome measures	Results
Anderson et al. (1995)	RCT	Improve self-care in diabetes	Diabetics USA	I: Group education based on the empowerment model, with debates open to participation of family members.	Inter. 1 year	Self-efficacy, attitude to diabetes scales (DAS) and diabetes care profile (DCP), and haemoglobin.	Positive
Puig-Girbau et al. (2011)	RCT	Improve control and management of CVR	Adults with medium/high CVR Spain	I: Group education carried out by a nurse, using debate as a methodology. C: Nurse led individual intervention carrying out follow-up and providing advice.	3 months	Clinical and management variables (no. of visits, medication expenses, allocation/nursing time).	Mixed
Laws (2004)	RCT	Improve obesity management	Obese adults United Kingdom	I: Complex intervention with training and incentivisation for professionals, individual patient-centred approach, healthy habits advice, behavioural change techniques, and six group discussion sessions. C: Usual treatment.	2 years	Programme compliance, BMI, weight.	Positive
Scott et al. (2004)	RCT	Improve chronic patient self-care	The elderly with chronic pathology USA	I: Group encounters led by a doctor and a nurse with participatory methodologies to debate self-care issues. C: Usual treatment.	2 years	Service use (hospitalisation, emergencies, home visits), satisfaction, self-efficacy and activities of daily life.	Mixed
Tousman et al. (2007)	Pre–post	Improve asthma self-management	Asthma patients USA	I: group education led by health professionals using methodologies centred on patients and social support.	Inter. 2 months	Asthma questionnaire (QOL), clinical data (spirometry, pulse, blood pressure), and self-management and knowledge of illness.	Positive
Bray et al. (2005)	NRCT	Improve diabetes control	Afro-Americans in a rural area USA	I: Follow-up by a nurse, individual and group health education. C: Usual follow-up	Inter. 12 months	Weight, blood pressure, and haemoglobin.	Positive
Hornsten et al. (2005)	RCT	Improve self-care in diabetes	Diabetics Sweden	I: Group sessions led by a nurse focused on understanding of the illness.	1 year	Haemoglobin, quality of life, satisfaction with treatment, symptoms, HDL, LDL, triglycerides, blood pressure, BMI.	Positive
Choi and Rush (2012)	Pre–post	Improve self-care in diabetes	Diabetic Korean immigrants USA	I: Culturally oriented group education imparted by Korean-speaking nurses, with debates and accounts of patients' experiences.	3 months	Quality of life, knowledge of illness, self-efficacy, clinical and life habits.	Positive
Khunti et al. (2012)	RCT	Improve self-care in diabetes	Diabetics England, Ireland, Australia	I: Group education led by trained health professionals, focused on empowering patients. C: Usual intervention.	3 years	Glycosylated haemoglobin, blood pressure, weight, lipids, lifestyle and quality of life, beliefs about the illness, depression, emotional impact of diabetes and use of medication.	Mixed
Esden and Nichols (2013)	Pre–post	Improve self-care in diabetes	Diabetics USA	I: Group education led by nurses with debate spaces + referral to doctors of those with abnormal parameters + provision of free pedometers.	Inter. 3 months	Self-management and knowledge of the illness.	Positive
Baradaran et al. (2006)	RCT	Increase knowledge of diabetes	Diabetics among Asian minorities United Kingdom	I: Group education on diabetes imparted by intercultural health professional C1: Routine monitoring of target population. C2: Routine control of indigenous population.	6 months	Illness knowledge, attitudes and practice.	Negative

I: intervention. C: control. RCT: randomised trial; NRCT: non-randomised trial; RCCT: randomised community trial; NRCCT: non-randomised community trial. Interv: intervention duration. CVR: cardiovascular risk. Mixed: positive/negative results depending on study variables (please see text).

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 (Gusi 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

Table 7
Evidence summary.

Topic	Evidence	Type of interventions
Physical activity	Reduce isolation/loneliness Improve quality of life Improve blood pressure	Group activities, community participation
	Reduction of risk and number of falls	Group activities
	Cost effective	Community interventions promoting physical exercise
	No evidence: mortality and hospitalisation reductions.	
Cardiovascular risk factors	Reduction of cardiovascular risk factors and mortality Weight reduction	Action or community mobilisation Group education with participatory pedagogy
Chronic illnesses	Reduction of hospitalisations and emergencies. Improve patient satisfaction and self-efficacy	Group education with participatory pedagogy
	No evidence: improvements in functional or health status or reduction in number of home visits.	
Diabetics	Improve clinical parameters	Group education with participatory pedagogy Education with support from peers
	Improve self-efficacy Improve health attitudes and beliefs.	Group education with participatory pedagogy

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 most 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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References

Anderson, R.M., Funnell, M.M., Butler, P.M., Arnold, M.S., Fitzgerald, J.T., Feste, C.C., 1995. Patient empowerment. Results of a randomized controlled trial. Diabetes Care 18 (7), 943–949.

Baksi, A.K., Al-Mrayat, M., Hogan, D., Whittingstall, E., Wilson, P., Wex, J., 2008. Peer advisers compared with specialist health professionals in delivering a training programme on self-management to people with diabetes: a randomized controlled trial. Diabet. Med. 25 (9), 1076–1082.

Baradaran, H.R., Knill-Jones, R.P., Wallia, S., Rodgers, A., 2006. A controlled trial of the effectiveness of a diabetes education programme in a multi-ethnic community in Glasgow [ISRCTN28317455]. BMC Public Health 6, 134.

Barceló, A., Cafiero, E., De Boer, M., et al., 2010. Using collaborative learning to improve diabetes care and outcomes: the VIDA project. Prim. Care Diabetes 4 (3), 145–153.

Bazzano, A.T., Zeldin, A.S., Diab, I.R.S., et al., 2009. The healthy lifestyle change program a pilot of a community-based health promotion intervention for adults with developmental disabilities. Am. J. Prev. Med. 37 (6), S201–S208.

Bradling, J., House, W., 2009. Social prescribing in general practice: adding meaning to medicine. Br. J. Gen. Pract. 59 (563), 454–456.

Bray, P., Thompson, D., Wynn, J.D., Cummings, D.M., Whetstone, L., 2005. Confronting disparities in diabetes care: the clinical effectiveness of redesigning care management for minority patients in rural primary care practices. J. Rural. Health 21 (4), 317–321.

Cattan, M., White, M., Bond, J., Learmouth, A., 2005. Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions. Ageing Soc. 25, 41–67.

Chambers, L.W., Kaczorowski, J., Dolovich, L., et al., 2005. A community-based program for Cardiovascular Health Awareness. Can. J. Public Health 96 (4), 294–298.

Choi, S.E., Rush, E.B., 2012. Effect of a short-duration, culturally tailored, community-based diabetes self-management intervention for Korean immigrants: a pilot study. Diabetes Educ. 38 (3), 377–385.

Cobiac, L.J., Vos, T., Barendregt, J.J., 2009. Cost-effectiveness of interventions to promote physical activity: a modelling study. Plos Medicine 6 (7) (e1000110-e1000110).

Cofino, R., Álvarez, B., Fernández, S., Hernández, R., 2005. Health promotion based on evidence: do community health programmes really work? Aten. Primaria 35 (9), 478–483.

Craig, P., Cooper, C., Gunnell, D., et al., 2012. Using natural experiments to evaluate population health interventions: new Medical Research Council guidance. J. Epidemiol. Community Health 66 (12), 1182–1186.

CTB The Community Tool Box, d. From, http://ctb.ku.edu/en/default.aspx (Accessed January 15 2014).

Dick, J., Clarke, M., Van Zyl, H., Daniels, K., 2007. Primary health care nurses implement and evaluate a community outreach approach to health care in the South African agricultural sector. Int. Nurs. Rev. 54 (4), 383–390.

Eades, G., Ager, J., 2008. Time being: difficulties in integrating arts in health. J. R. Soc. Promot. Health 128 (2), 62–67.

Esden, J.L., Nichols, M.R., 2013. Patient-centered group diabetes care: a practice innovation. Nurse Pract. 38 (4), 42–48.

Farnkvist, L., Weinehall, L., 2006. Assessment of intervention intensity: experiences from a small-scale Swedish cardiovascular disease prevention programme. Scand. J. Public Health 34 (3), 279–286.

Farooqi, A., Bhavsar, M., 2001. Project Dil: a co-ordinated Primary Care and Community Health Promotion Programme for reducing risk factors of coronary heart disease amongst the South Asian community of Leicester—experiences and evaluation of the project. Ethn. Health 6 (3–4), 265–270.

Fernández-Ballesteros, R., Robine, J.M., Walker, A., Kalache, A., 2013. Active aging: a global goal. Curr. Gerontol. Geriatr Res. 2013, 298012.

Ferrer, R.L., Mody-Bailey, P., Jaen, C.R., Gott, S., Araujo, S., 2009. A medical assistant-based program to promote healthy behaviors in primary care. Ann. Fam. Med. 7 (6), 504–512.

Frederick, J.T., Steinman, L.E., Prohaska, T., et al., 2007. Community-based treatment of late life depression — an expert panel-informed literature review demanat. Am. J. Prev. Med. 33 (3), 222–249.

Garrett, S., Elley, C.R., Rose, S.B., O'dea, D., Lawton, B.A., Dowell, A.C., 2011. Are physical activity interventions in primary care and the community cost-effective? A systematic review of the evidence. Br. J. Gen. Pract. 61 (584), 212–217.

Gates, S., Fisher, J.D., Cooke, M.W., Carter, Y.H., Lamb, S.E., 2008. Multifactorial assessment and targeted intervention for preventing falls and injuries among older people in community and emergency care settings: systematic review and meta-analysis. BMJ 336 (7636), 130–133.

George, E.S., Kolt, G.S., Duncan, M.J., et al., 2012. A review of the effectiveness of physical activity interventions for adult males. Sports Med. 42 (4), 281–300.

Gillespie, L.D., Robertson, M.C., Gillespie, W.J., et al., 2012. Interventions for preventing falls in older people living in the community. Cochrane Database Syst. Rev. 9 (CD007146-CD007146).

Glasgow, R.E., Lichtenstein, E., Marcus, A.C., 2003. Why don't we see more translation of health promotion research to practice? Rethinking the efficacy-to-effectiveness transition. Am. J. Public Health 93 (8), 1261–1267.

Grahn Kronhed, A.C., Blomberg, C., Löfman, O., Timpka, T., Möller, M., 2006. Evaluation of an osteoporosis and fall risk intervention program for community-dwelling elderly. A quasi-experimental study of behavioral modifications. Aging Clin. Exp. Res. 18 (3), 235–241.

Guldan, G.S., 1996. Obstacles to community health promotion. Soc. Sci. Med. 43 (5), 689–695.

Gusi, N., Reyes, M.C., González-Guerrero, J.L., Herrera, E., García, J.M., 2008. Cost-utility of a walking programme for moderately depressed, obese, or overweight elderly women in primary care: a randomised controlled trial. BMC Public Health 8 (231-2458-8-231).

Haber, D., 1996. Community-oriented primary care: applying the model to a senior center. Fam. Community Health 18 (4), 33–39.

Hale, W.D., Bennett, R.G., Oslos, N.R., Cochran, C.D., Burton, J.R., 1997. Project REACH: a program to train community-based lay health educators. Gerontologist 37 (5), 683–687.

Hayes, S.L., Mann, M.K., Morgan, F.M., Kelly, M.J., Weightman, A.L., 2012. Collaboration between local health and local government agencies for health improvement. Cochrane Database Syst. Rev. 10 (CD007825-CD007825).

Hornsten, A., Lundman, B., Stenlund, H., Sandstrom, H., 2005. Metabolic improvement after intervention focusing on personal understanding in type 2 diabetes. Diabetes Res. Clin. Pract. 68 (1), 65–74.

Khunti, K., Gray, L.J., Skinner, T., et al., 2012. Effectiveness of a diabetes education and self management programme (DESMOND) for people with newly diagnosed type 2 diabetes mellitus: three year follow-up of a cluster randomised controlled trial in primary care. BMJ 344, e2333.

Laws, R., 2004. A new evidence-based model for weight management in primary care: the Counterweight Programme. J. Hum. Nutr. Diet. 17 (3), 191–208.

López-Téllez, A., Río, J., Molinero, F., Fernández, I., Martínez, I., Prados, P., 2012. Efectividad de un programa de intervención socio-motriz en población mayor con riesgo social. Soc. Esp. Med. Rural Gen. 38 (3), 137–144.

Lowe, J., Ball, J., Lynch, B., et al., 2004. Acceptability and feasibility of a community-based screening programme for melanoma in Australia. Health Promot. Int. 19 (4), 437–444.

Macintyre, S., 2011. Good intentions and received wisdom are not good enough: the need for controlled trials in public health. J. Epidemiol. Community Health 65 (7), 564–567.

March, S., Ramos, M., Soler, M., et al., 2011. Documental review of community health promotion experiences in primary health care. Aten. Primaria 43 (6), 289–296.

March, S., Jordán, M., Montaner, I., et al., 2014. ¿Qué hacemos en el barrio? Descripción de las actividades comunitarias de promoción de la salud en atención primaria de 5 CCAA: Proyecto frAC. Gac. Sanit. 28 (4), 267–273.

McClure, R., Turner, C., Peel, N., Spinks, A., Eakin, E., Hughes, K., 2005. Population-based interventions for the prevention of fall-related injuries in older people. Cochrane Database Syst. Rev. 1, CD004441.

Munro, J., Nicholl, J., Brazier, J., Davey, R., Cochrane, T., 2004. Cost effectiveness of a community based exercise programme in over 65 year olds: cluster randomised trial. J. Epidemiol. Community Health 58 (12), 1004–1010.

National Institute of Health and Clinical Excellence (NICE), 2008. Community engagement (PH9) (Public Health Guidance). From, http://www.nice.org.uk/Guidance/topic/public (health, London (Accessed January 22 2014)).

Navarro, A.M., Voetsch, K.P., Liburd, L.C., Giles, H.W., Collins, J.L., National Expert panel on Community Health Promotion, 2007. Charting the future of community health promotion: recommendations from the National Expert Panel on Community Health Promotion. Prev. Chronic Dis. 4 (3), A68.

Nilsen, P., 2006. The theory of community based health and safety programs: a critical examination. Inj. Prev. 12 (3), 140–145.

Norris, S.L., Engelgau, M.M., Narayan, K.M., 2001. Effectiveness of self-management training in type 2 diabetes: a systematic review of randomized controlled trials. Diabetes Care 24 (3), 561–587.

Nutbeam, D., 2000. Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. Health Promot. Int. 15 (3), 259–267.

Oba, N., McCaffrey, R., Choonhapran, P., Chutug, P., Rueangram, S., 2011. Development of a community participation program for diabetes mellitus prevention in a primary care unit, Thailand. Nurs. Health Sci. 13 (3), 352–359.

Oxman, A.D., Guyatt, G.H., 1991. Validation of an index of the quality of review articles. J. Clin. Epidemiol. 44 (11), 1271–1278.

Park, Y., Song, M., Cho, B., Lim, J., Song, W., KIM, S., 2011. The effects of an integrated health education and exercise program in community-dwelling older adults with hypertension: a randomized controlled trial. Patient Educ. Couns. 82 (1), 133–137.

Phelan, E., Williams, B., Leveille, S., Snyder, S., Wagner, E., Logerfo, J., 2002. Outcomes of a community-based dissemination of the health enhancement program. J. Am. Geriatr. Soc. 50 (9), 1519–1524.
Phelan, E.A., Williams, B., Snyder, S.J., Fitts, S.S., Logerfo, J.P., 2006. A five state dissemination of a community-based disability prevention program for older adults. Clin. Interv. Aging 1 (3), 267–274.
Puig-Girbau, M.N., Lladó-Blanch, M.M., Seco-Salcedo, M.C., et al., 2011. Evaluation of an educational group intervention in the control of patients with cardiovascular risk. Enferm. Clin. 21 (5), 238–247.
Pujiula Blanch, M., Quesada Sabaté, M., Avellana Revuelta, E., Ramos Blanes, R., Cubí Monfort, R., Grupo APOC ABS Salt, 2010. Final results of a multifactorial and community intervention study for the prevention of falls in the elderly. Aten. Primaria 42 (4), 211–217.
Record, N., Harris, D., Record, S., Gilbert-Arcari, J., Desisto, M., Bunnell, S., 2000. Mortality impact of an integrated community cardiovascular health program. Am. J. Prev. Med. 19 (1), 30–38.
Renehan, E., Dow, B., Lin, X., et al., 2012. Healthy ageing literature review 2012. Available:, www.health.vic.gov.au/agedcare (last update, 12/4, 2013).
Rubio-Valera, M., Pons-Vigués, M., Martínez-Andrés, M., Moreno-Peral, P., Berenguera, A., Fernández, A., 2014. Barriers and facilitators for the implementation of primary prevention and health promotion activities in primary care: a synthesis through meta-ethnography. PLoS One 9 (2), e89554.
Rychetnik, L., Frommer, M., Hawe, P., Shiell, A., 2002. Criteria for evaluating evidence on public health interventions. J. Epidemiol. Community Health 56 (2), 119–127.
Scott, J.C., Conner, D.A., Venohr, I., et al., 2004. Effectiveness of a group outpatient visit model for chronically ill older health maintenance organization members: a 2-year randomized trial of the cooperative health care clinic. J. Am. Geriatr. Soc. 52 (9), 1463–1470.
Shumway-Cook, A., Silver, I.F., Lemier, M., York, S., Cummings, P., Koepsell, T.D., 2007. Effectiveness of a community-based multifactorial intervention on falls and fall risk factors in community-living older adults: a randomized, controlled trial. J. Gerontol. A Biol. Sci. Med. Sci. 62 (12), 1420–1427.
Starfield, B., Shi, L., Macinko, J., 2005. Contribution of primary care to health systems and health. Milbank Q. 83 (3), 457–502.
Taggart, J., Williams, A., Dennis, S., et al., 2012. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. BMC Fam. Pract. 13, 49.
Task Force on Commnity Preventive Services (TFCPS), 2005. The Guide to Community Preventive Services — Whats Works to Promote Health? OUP, New York (From http://www.thecommunityguide.org (Accessed January 15 2014).)
Tousman, S., Zeitz, H., Taylor, L.D., Bristol, C., 2007. Development, implementation and evaluation of a new adult asthma self-management program. J. Community Health Nurs. 24 (4), 237–251.
Uitewaal, P., Bruijnzeels, M., De Hoop, T., Hoes, A., Thomas, S., 2004. Feasibility of diabetes peer education for Turkish type 2 diabetes patients in Dutch general practice. Patient Educ. Couns. 53 (3), 359–363.
Urban, N., Taplin, S.H., Taylor, V.M., et al., 1995. Community organization to promote breast cancer screening among women ages 50–75. Prev. Med. 24 (5), 477–484.
Urrutia, G., Bonfill, X., 2010. PRISMA declaration: a proposal to improve the publication of systematic reviews and meta-analyses. Med. Clin. (Barc.) 135 (11), 507–511.
Vivilaki, V., Romanidou, A., Theodorakis, P., Lionis, C., 2005. Are health education meetings effective in recruiting women in cervical screening programmes? An innovative and inexpensive intervention from the island of Crete. Rural Remote Health 5 (2), 376.
Weinehall, L., Hellsten, G., Boman, K., Hallmans, G., Asplund, K., Wall, S., 2001. Can a sustainable community intervention reduce the health gap?—10-year evaluation of a Swedish community intervention program for the prevention of cardiovascular disease. Scand. J. Public Health Suppl. 56, 59–68.
WHO, 1986. Ottawa Charter of Health Promotion. OMS, Toronto, Canadá.
Yanez-Cadena, D., Sarria-Santamera, A., García-Lizana, F., 2006. Can we improve management and control of chronic diseases? Aten. Primaria 37 (4), 221–230.
Zanjani, F., Kruger, T., Murray, D., 2012. Evaluation of the mental healthiness aging initiative: community program to promote awareness about mental health and aging issues. Community Ment. Health J. 48 (2), 193–201.