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Effectiveness of a community intervention to reduce social isolation among older people in low-income neighbourhoods

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Background: Social and demographic trends show a global increase of proportion of older people at risk of social isolation. This study aimed to evaluate the effectiveness of an intervention conducted in low-income neighbourhoods to reduce social isolation and its negative effects on health in older persons. **Methods:** A quasi-experimental study with a comparison group was performed. The 'School of Health for Older People' is a weekly community intervention that promotes resources among individuals and communities to enhance their ability to identify problems and activate solutions, encouraging community participation. Data were collected at the beginning and at the end of the intervention. Social support, psychological morbidity and health-related quality of life were measured through questionnaires information on visits to the primary care centre was obtained from the electronic medical records of primary care centres. Multivariate regression models were conducted to assess changes after the intervention. **Results:** A total of 135 participants were included in the study. The intervention helped to improve participants' mental health (aPR = 0.46; 95% CI: 0.23–0.90) comparing with the comparison group. Also, the intervention helped to maintain quality of life and social support, which were worsened or maintained respectively in the case of comparison group. **Conclusions:** Our results provide evidence on how a community intervention can improve quality of life, mental health and social support in older people. The evidence can help to fill the knowledge gap in this area and might be especially useful for the design of social and public health policies and programmes for older people in disadvantaged neighbourhoods in urban areas. **Trial registration:** NCT03142048

Introduction

The proportion of elderly people has risen considerably in recent decades, especially in Europe, which has the oldest population in the world.[1] In Barcelona, 18.2% of men and 24.7% of women are 65 years or older, with projections indicating that this number will escalate over time.[2,3]

Social and demographic trends show a global increase in the proportion of older people at risk of lack of social relationships.[4] Social isolation represents the objective absence of relationships with other people.[5–9]

Social relationships are not only associated with good mental health, but their absence is linked to a significant increase in morbidity and mortality[8,10,11] because they provide support and moderate the effects of stressors of life in people.[10] Moreover, social support increases the availability of social resources, self-steem and encourages the adoption of healthy behaviours.[10] Because of the high prevalence of social isolation, together with the evidence of their negative impact on health, quality of life[12,13] and well-being,[14–18] they are an important public health concern.[14,15] A range of interventions has been developed to reduce social isolation in older people.[6] The scope of these interventions is wide, including the provision of devices, accompanying persons, home visits and health promotion interventions; these interventions can be provided one-to-one, in group activities or by community engagement.[6,14,15,19–21]

Most interventions have not been evaluated, and some have only conducted process evaluation, assessing the number of people reached and participants' satisfaction.[22] Other interventions have been assessed by qualitative methods only, or using weak study designs[6,23] to assess their effects. Additionally, there is substantial variability in the measurement tools used and the outcomes assessed.[24] Finally, interventions on social isolation often target specific population groups: nursing home residents, caregivers, ethnic minorities, widows and widowers and people with health conditions, such as serious mental health problems, among others.[14,16,17,19]

Some systematic reviews have been carried out to assess the effectiveness of interventions in older adults[6,19,20] but there is still a clear lack of conclusive evidence on their impact on social isolation and other health-related outcomes.

In Barcelona, the programme 'Barcelona Health in the Neighbourhoods' was launched in 2007 to reduce social inequalities in health and improve the health of the most disadvantaged populations through community health interventions.[25] As part of the

comprehensive action a weekly community intervention called the 'School of Health for Older People' has been implemented in low-income neighbourhoods of Barcelona since 2008.[25] This intervention aims to reduce social isolation in older people and increase their quality of life.

A qualitative evaluation has already been carried out to explore the perceptions of those attending the 'School of Health for Older People', but no information has been studied regarding health indicators. Now, the objective of this study was to evaluate the effectiveness of this intervention, by measuring its impact on self-perceived health, mental health, health-related quality of life (HRQoL), social support and primary care use.

Methods

Design

Quasi-experimental study, with an intervention group (IG) and a comparison group (CG).[26]

Setting and subjects

The study population consisted of community-dwelling adults aged 60 years or older living in low-income neighbourhoods in Barcelona (Spain). Two intervention neighbourhoods (Besos and Guineueta) and two comparisons (Trinitat Nova and Raval) were selected on a convenience basis, ensuring similar socioeconomic characteristics.

Risk of social isolation was not an inclusion criteria. However, people considered at risk of solitude by professionals (adults aged 60 years or older, living in the four selected neighbourhoods) were tried to be recruited through professionals of social and health services of primary care in the area. Also, people could voluntarily sign up through the elderly community centres. In both the IG and CG, older people were informed about the study and once they had expressed their interest in participating, their names and contact telephone numbers were registered. Each participant was contacted and an appointment was arranged in which they were informed about the study.

The School of Health had not been conducted before in the neighbourhoods where the study was performed. All participants from the CG were informed that they could participate in a School of Health after their participation in the study. Meanwhile, all participants could attend community activities already established in the neighbourhoods, such as attending civic centres or community dining halls, e.g. although they are not activities comparable to the evaluated intervention.

A theoretical sample was recruited with 80 participants in each group (IG and CG) (≈40 people in each neighbourhood), accepting an alpha risk of 5% and a power of 80% in a unilateral contrast, and assuming a loss of 10%. Further details are available in the published protocol.[26] Both groups were balanced in terms of the participants' recruitment site (primary care centres, social services and community centres).

The exclusion criteria were: (i) inability to understand or speak Spanish or Catalan; (ii) inability to maintain participation for 6 months and (iii) failure to attend at least 50% of the sessions in the case of participants in the IG.

Ethical considerations

Participants were informed both verbally and in writing about the aims, methods, procedures and measures of this study. Also about ethical issues, such as confidentiality, their right to ask any questions they might have during the study and to withdraw at any time without penalty. All participants signed a written consent form. This study was approved by the Parc de Salut MAR Clinical Research Ethics Committee (code n° 2015/6500/I).

Description of the intervention

The intervention 'School of Health for Older People' was held from January to June 2015. It consisted of 22 weekly group sessions of 1.5 h, with discussions on health, including biological, psychological and social topics. Attendance was free and sessions were held in community centres in the selected neighbourhoods. The different sessions of the intervention were linked to networking in the neighbourhood derived from the ongoing community process. Detailed contents of the intervention are described in the published protocol[26] and in a Supplementary table S1.

All sessions were designed to encourage interaction among participants and to work on personal skills. Most sessions were led by an expert on the topic covered, who worked in the same neighbourhood as the participants (professionals from the health services, social services, markets or neighbourhood associations).

Information sources

The main information source was a face-to-face questionnaire, designed *ad-hoc* and composed of items from validated questionnaires.[27–31] The same questionnaire was administered before (PRE) (January 2015) and at the end of the intervention (POST) (June 2015) by the research team and trained personnel from the Agència de Salut Pública de Barcelona (ASPB).

Main outcomes

Attendance was registered at each session. At the end participants' satisfaction was measured asking them to rate speakers, place/space, frequency, schedule, duration and general satisfaction from 0 to 10. Also participants were asked if they recommend the School of Health to a friend. With a yes/no answer.

Sociodemographic information was collected in the baseline questionnaire: age, sex, educational level (no education/primary/secondary or university), marital status (married/divorced or separated/never married/widowed), household type (living alone/with other family members/others) and neighbourhood of residence.

HRQoL was measured through the EuroQoL (EQ-5D-3L) questionnaire.[27] The five dimensions analyzed were mobility, self-care, usual activities, pain/discomfort and anxiety/depression, which had three possible answers (no problems, moderate problems and severe problems). A final index containing all dimensions was obtained assigning a weight to each response and subsequently adjusting it according to the reference group. The final index ranged from 0 (death) to 1 (the best health status).

Mental health was measured through the Goldberg General Health Questionnaire (GHQ-12),[28,29] which refers to possible problems people can feel or have in the last 30 days. A final score was calculated for the 12 items using a binary scoring method for each item, by scoring 0 or 1 depending on the response category. The score ranged from 0 to 12, with higher scores indicating worse mental health.[28] The variable was subsequently dichotomized using a cut-off of four points, given that GHQ-12 has lower specificity in the population older than 65 years.[28,29] Participants scoring four or higher were more likely to experience mental health problems and were classified as 'with psychological distress'. People scoring <4 points were considered as 'without psychological distress'.

Social support was measured through questions drawn from the Measures of Quality of Life Core Survey of Medical Outcomes Study (MOS).[30] The following two questions were included: 'How often is this kind of support available to you? 1) Someone to get together with for relaxation, and 2) Someone to do things with to help you take your mind off things', with response options of 'none of the time', 'a little of the time', 'some of the time' and 'most/all of the time'. Social support was also measured through questions drawn from the National Social Life, Health, and Aging Project (NSHAP) questionnaire[31]: 'How often can you/do you feel you can rely on your friends?' and 'How often can you/do you feel that you lack companionship?' with response options of 'often', 'some of the time' and 'never or hardly ever'. These variables were dichotomized by

grouping them among those who reported having social support and those who reported having it hardly ever or not at all.

Information was obtained on the number of visits to the primary care centre [general practitioners (GPs) and nurses] for the 6 months prior to the intervention and the 6 months after the intervention through the records provided by electronic medical records of primary care centres.

Data analysis

Finally 17 people in the IG (eight from Guineueta and nine from Besòs) were excluded from the analyses because they failed to attend the minimum of 50% of the sessions. Causes were death or prolonged hospital admission, change of address, having to take care for relatives on the days the intervention was offered and in some, reason of absence was unknown. In the CG, six people (one person from Raval and five from Trinitat) were lost to follow-up due to telephone registration errors, home relocations or death. These 23 people were also excluded of the analysis. We analyzed potential differences in sociodemographic characteristics between excluded and included participants and there were no statistically significant differences between them neither in IG nor in CG (Supplementary table S2).

A descriptive analysis of the baseline characteristics of the two groups was conducted. Percentages (qualitative variables) were compared using the chi-square test and medians (quantitative variables) were compared using the Mann–Whitney U test.

Further descriptive analyses were conducted to compare results at baseline (PRE) and at follow-up (POST). Differences between baseline and 6-month follow-up measurements were assessed for both the IG and CG and were compared with the McNemar test, sign-test or Wilcoxon test, as appropriate. The percentage difference or scoring difference between baseline and 6-month follow-up were calculated and were compared between the IG and the CG using the two-sample McNemar test or Mann–Whitney U test.

To assess the effectiveness of the intervention, multivariate Poisson regression models with robust variance were built for qualitative variables and a multivariate Box–Cox regression model was built for the quantitative variable (EuroQol utilities). Models contained as independent variables the group to which participants belonged (IG or CG) and the measurement taken at baseline.

All analyses were conducted using SPSS v25 and Stata v13.

Results

Participants' demographic characteristics are summarized in table 1. A total of 135 participants were included in the study: 70 were recruited in the IG and 65 in the CG. About 90% were older than 64 years and 80% were women. Most of them had no education (57.0%), were married or widowed (90.4%) and 57.0% were living with other family members. There were no differences between the IG and CG.

Attendance rates were 85.7% in the Besòs neighbourhood and 76.5% in Guineueta. As for overall satisfaction, 98.6% of the participants would recommend the activity to a friend. Satisfaction with different items received scores of around nine: speakers (8.74), place (9.20), frequency (9.09), schedule (9.06), duration (9.28) and overall score (9.01) (data not shown in tables).

The five dimensions of the HRQoL showed no differences between the IG and CG at baseline. When comparing PRE and POST measurements, there were no differences in the IG, while the CG showed an increase in the prevalence of problems in all dimensions except for self-care. The median scores of the EuroQoL utilities index were 0.799 in the IG and 0.790 in CG at baseline. After the intervention, utilities scores did not significantly change in the IG and worsened in the CG to 0.739 ($P < 0.001$) (table 2).

Regarding mental health, the prevalence of people experiencing psychological distress was higher in the IG (24.6%) than in the CG (9.4%) ($P = 0.023$) at baseline. After the intervention, in the CG, the percentage of participants with psychological distress doubled at the follow-up (from 9.4% to 21.9%; $P = 0.021$) (table 2).

Table 1 Participants' demographic characteristics at baseline. School of Health for Older People, Barcelona 2015

	IG ($N = 70$), *n* (%)	CG ($N = 65$), *n* (%)	P^a
Age			*0.056*
<65 years	9 (12.8)	3 (4.6)	
65 to <75 years	31 (44.3)	22 (33.9)	
≥75 years	30 (42.9)	40 (61.5)	
Sex			
Female	52 (74.3)	56 (86.2)	*0.085*
Male	18 (25.7)	9 (13.8)	
Educational level			
No education	35 (50.0)	42 (64.6)	*0.164*
Primary	23 (32.9)	19 (29.2)	
Secondary to university	12 (17.1)	4 (6.2)	
Marital status			
Married	39 (55.7)	24 (36.9)	*0.177*
Divorced or separated	2 (2.9)	3 (4.6)	
Never married	3 (4.3)	5 (7.7)	
Widowed	26 (37.1)	33 (50.8)	
Household type			
Single	24 (34.3)	31 (47.7)	*0.198*
With family members	45 (64.3)	32 (49.2)	
Others	1 (1.4)	2 (3.1)	

IG, intervention group; CG, comparison group.
a: *P*-values using the chi-square test.

Regarding self-perceived health, the percentages were similar in the two groups and did not differ significantly after the intervention (table 2).

Regarding social support (table 3), questions extracted from the MOS questionnaire showed no differences between the IG and the CG at baseline. Comparison between baseline and follow-up showed an increase in social support in the IG in terms of having someone to get together with for relaxation (from 34.8% to 59.4%) and having someone to do things with to help them take their mind off things (from 40% to 61.4%). There were no significant changes in social support in the CG.

There were differences between groups in well-being through interaction with others at baseline. In the CG, 23.8% of the participants thought they could rely on friends often, while this percentage was 44.3% in IG. The percentage of participants who expressed a lack of companionship often or some of the time was higher in the CG than in the IG. After 6 months, no pre–post differences were obtained in either group (table 3).

After adjusting for the baseline measurement, the decrease in the HRQoL utilities was lower in the IG than in the CG ($\beta = 0.090$; $P = 0.001$) (table 4).

The percentage of participants suffering psychological distress on the BHQ-12 decreased by 10.1% after the intervention in the IG, but increased by 12.5% in the CG. After adjustment by measurements taken at baseline, participants in the IG were more likely to have improved their mental health [adjusted prevalence ratio (aPR)=0.46; 95% confidence interval (95% CI): 0.23–0.90].

Results of the intervention on social support indicators are shown in table 4. In questions drawn from the MOS questionnaire there was an improvement in the IG. However, there were no significant differences between the two groups. Regarding MOS, the percentage of participants without someone to get together with for relaxation decreased by 24.6% after the intervention in the IG, but increased by 14.1% in the CG. In contrast, when asked whether they felt they could not rely on friends, the percentage in the CG increased by 4.8% while that in the IG increased by 1.4%. For lack of companionship, the CG improved by 3%, and the IG decreased by 2.9%. After adjusting for the measurement at baseline, the difference in the percentage

Table 2 Health-related quality of life (HRQoL), mental health (GHQ-12) and perceived health among participants at baseline and after the intervention. School of Health for Older People, Barcelona 2015

Characteristics	IG ($n = 70$)			CG ($n = 65$)			P^a
	n (%) Baseline	*n* (%) Follow-up	P^b	*n* (%) Baseline	*n* (%) Follow-up	P^b	
QUALITY OF LIFE (EQ-5D questionnaire)							
Mobility							
No problems	56 (81.2)	49 (71.0)	*0.189*	51 (78.5)	40 (61.5)	*0.013*	*0.697*
Some problems/confined to bed	13 (18.8)	20 (29.0)		14 (21.5)	25 (38.5)		
Self-care							
No problems	66 (95.7)	65 (94.2)	*1*	59 (90.8)	57 (87.7)	*0.727*	*0.315*
Some problems/unable to wash or dress myself	3 (4.3)	4 (5.8)		6 (9.2)	8 (12.3)		
Usual activities							
No problems	60 (87.0)	59 (85.5)	*1*	58 (89.2)	50 (76.9)	*0.039*	*0.685*
Some problems/unable to perform my usual activities	9 (13.0)	10 (14.5)		7 (10.8)	15 (23.1)		
Pain/discomfort							
No pain	38 (55.1)	40 (58.0)	*0.815*	34 (52.3)	21 (32.3)	*0.007*	*0.784*
Moderate/extreme pain or discomfort	31 (44.9)	29 (42.0)		31 (47.7)	44 (67.7)		
Anxiety/depression							
Not anxious or depressed	53 (76.8)	49 (71.0)	*0.481*	51 (78.5)	36 (55.4)	*0.001*	*0.819*
Moderately/extremely anxious or depressed	16 (23.2)	20 (29.0)		14 (21.5)	29 (44.6)		
EuroQoL utilities (0–1), median (IQR)	0.799 (0.705–1.000)	0.790 (0.705–1.000)	*0.372*[c]	0.790 (0.701–1.000)	0.739 (0.493–0.793)	*0.000*[c]	*0.382*[d]
MENTAL HEALTH (GOLDBERG GHQ-12 questionnaire)[e]							
With psychological distress	17 (24.6)	10 (14.5)	*0.052*	6 (9.4)	14 (21.9)	*0.021*	*0.023*
Without psychological distress	52 (75.4)	59 (85.5)		58 (90.6)	50 (78.1)		
PERCEIVED HEALTH							
Good/very good	38 (54.3)	40 (57.1)	*0.754*	31 (47.7)	28 (43.1)	*0.629*	*0.444*
Fair/bad/very bad	32 (45.7)	30 (42.9)		34 (52.3)	37 (56.9)		

IG, intervention group; CG, comparison group.
a: *P*-values at baseline using the chi-square test or Fisher test to assess differences between the IG and CG.
b: *P*-values based on McNemar test to assess differences between baseline and follow-up in the same group.
c: *P*-values based on the Wilcoxon sign test to assess differences between baseline and follow-up in the same group.
d: *P*-values at baseline based on the Mann–Whitney U test to assess differences between the IG and CG.
e: Score on the GHQ-12 using binary scoring method (0–0–1–1) ranges from 0 to 12, the caseness threshold is 4.

of those who could not rely on friends decreased significantly in the IG compared with the CG (aPR = 0.77; 95% CI: 0.61–0.96).

Finally, no significant changes were observed in the number of health visits to primary care centres, either to GPs or nurses (data not shown in tables).

Discussion

Results show that the intervention helped to maintain or improve participants' health in terms of quality of life, mental health and social support. In contrast, there was no change in participants' self-perceived health and primary care use.

A loss of capabilities and quality of life is common with advancing age.[32] This intervention succeeded in maintaining levels of HRQoL and in improving mental health, while those of participants in the CG declined, as expected at this age.

Another intervention implemented by primary care professionals and conducted in Spain also aimed to alleviate loneliness among older people at risk.[33] The intervention consisted of alternate visits to community places and sessions to discuss the visits. However, that intervention produced no improvement either in the mental or the physical components of HRQoL. These differences with our study might be due to the use of a different instrument to assess quality of life (EuroQol vs. SF-12). EuroQoL was chosen because it is the most commonly used tool to calculate utilities for cost-effectiveness analyses,[34] which is foreseen in the near future. Moreover, EuroQol has shown superior performance to that of the SF-12 and is considered one of the best indicators to estimate HRQoL.[35] Another reason why these results may differ from those obtained by the prior Spanish study concerns the organizational aspects present in our intervention, such as the quantity and type of going-out activities offered, the leadership of the group coordinators and the encouragement of connections. In this intervention, most of the sessions were conducted by leaders and stakeholders in their own neighbourhoods, allowing participants to get in touch with each other and learn of new resources.

Social isolation is also associated with depressive symptoms. Mental health improved after the intervention in the IG, but significantly worsened in the CG. A systematic review[19] that assessed 36 studies focussed on the health impact of social capital interventions in older people, and found that they were ineffective in changing mood. As occurred in quality of life, the way connections were fostered in the School of Health by maintaining the shared interests of the group, promoting reciprocity and allowing exchange of experiences could have played a key role.

Another aspect to consider is that this intervention was carried out in most deprived neighbourhoods. Social determinants affect people's health by worsening the health of those living in the most under privileged neighbourhoods.[2] Community interventions want to combat social inequalities, as a priority people with worse health would be more likely to improve it. In that way, evidence suggests that combining different recruitment methods could be the most effective way to reach the target population.[36] Recruitment through health and social services in this study allowed participants to derive greater benefit from the intervention. This was also confirmed by participants' satisfaction and high adherence, in contrast with other interventions that reported low attendance rates.[24] These data, obtained in the process evaluation, also help to explain the good results in mental health and quality of life. Participants probably did not miss

Table 3 Social support (MOS and NSHAP questionnaires) among participants at baseline and after the intervention. School of Health for Older People, Barcelona 2015

	IG ($n = 70$)			CG ($n = 65$)			P^a
Social support	**Baseline**	**Follow-up**	P^b	**Baseline**	**Follow-up**	P^b	
Questions extracted from the MOS questionnaire	***n* (%)**	***n* (%)**		***n* (%)**	***n* (%)**		
How often is this kind of support available to you?							
Someone to get together with for relaxation							
Never/a little/some of the time	45 (65.2)	28 (40.6)	*0.001*	36 (56.3)	27 (42.2)	*0.108*	*0.290*
Most/all of the time	24 (34.8)	41 (59.4)		28 (43.8)	37 (57.8)		
Someone to do things with you to help you take your mind off things							
Never/a little/some of the time	42 (60.0)	27 (38.6)	*0.012*	35 (54.7)	27 (42.2)	*0.170*	*0.534*
Most/all of the time	28 (40.0)	43 (61.4)		29 (45.3)	37 (57.8)		
Questions extracted from the NSHAP questionnaire							
How often do you feel you can rely on your friends?							
Often	31 (44.3)	30 (42.9)	*1.000*	15 (23.8)	12 (19.0)	*0.684*	*0.013*
Some of the time/never or hardly ever	39 (55.7)	40 (57.1)		48 (76.2)	51 (81.0)		
How often do you feel that you lack companionship?							
Often/some of the time	28 (40.0)	30 (42.9)	*0.815*	38 (58.4)	36 (55.4)	*0.832*	*0.032*
Never or hardly ever	42 (60.0)	40 (57.1)		27 (41.6)	29 (44.6)		

IG: intervention group; CG: comparison group.
a: *P*-values at baseline using the chi-square test or Fisher test to assess differences between intervention and comparison groups.
b: *P*-values based on the McNemar test to assess differences between baseline and follow-up in the same group.

Table 4 Health-related quality of life (HRQoL), psychological distress (mental health GHQ-12 questionnaire), perceived health and social support (MOS and NSHAP questionnaires). Differences between participants at baseline and after the intervention. School of Health for Older People, Barcelona 2015

	Unadjusted differences in median score between baseline and follow-up	P^a	β (***P*-value**)[b]
HRQoL (Euroquol utilities)			
IG	−0.009	0.006	0.090 (0.001)
CG	−0.051		Ref
	Unadjusted differences between PRE–POST in %	P^a	aPR[c] (95% CI)
Psychological distress (Goldberg questionnaire)[d]			
IG	−10.1%	0.003	0.46 (0.23–0.90)
CG	12.5%		Ref
Poor Perceived health			
IG	−2.8%	0.345	0.81 (0.62–1.08)
CG	4.6%		Ref
Social support (MOS questionnaire)			
How often is this kind of support available to you?			
I don't have anyone to get together with for relaxation			
IG	−24.6%	0.185	0.90 (0.61–1.33)
CG	−14.1%		Ref
I don't have anyone to do things with to help me get my mind off things			
IG	−21.4%	0.469	0.89 (0.59–1.34)
CG	−12.5%		Ref
Social support (NSHAP questionnaire)			
How often can you/do you feel...			
...Cannot rely on your friends			
IG	1.4%	0.726	0.77 (0.61–0.96)
CG	4.8%		Ref
...that you lack companionship			
IG	2.9%	0.525	0.90 (0.65–1.25)
CG	−3%		Ref

IG, intervention group; CG, comparison group; aPR, adjusted prevalence ratio; 95% CI, 95% confidence interval; Ref, reference category.
a: *P*-values based on the Mann–Whitney U test or the two-sample McNemar test to assess differences in the changes between IG and CG after the intervention.
b: Multivariate Box–Cox regression model adjusted for the baseline measurement.
c: Multivariate Poisson regression models with robust variance adjusted by the measurement taken at baseline.
d: Psychological distress was defined as scoring four or more points on the GHQ-12.

sessions because activities allowed them to discover resources and opportunities in their neighbourhood, and moreover they felt sessions were an opportunity to enjoy the company of peers. This is consistent with findings observed in a qualitative evaluation carried out in these participants through focus groups. The participants reported that during the rest of the week, they looked forward to attending the School of Health. In addition, according to this qualitative evaluation, they specially appreciated peer relationships, the new links with people in their communities and being heard.[37] This could also contribute to social support that was also increased in terms of having someone to get together with for relaxation and someone to do things with to help them take their mind off things. Given that lower social relationships increase morbidity and reduce life expectancy,[1,10] the results of this evaluation reinforce the idea that our intervention could be a protective health factor.

Some authors have demonstrated that social isolation impair well-being, increasing the use of health services.[15,22] No changes were observed in the number of health visits after this intervention, consistent with the findings of a similar previous study.[33] An explanation is that most appointments in older people are pre-arranged and related to chronic diseases, which need regular medical follow-up. Therefore, these appointments are generated by health professionals and are a characteristic of the local health system, which is a country-specific. Moreover, perceived health did not vary in this study, consistent with the fact that 'health' is often understood as referring only to physical health, and that chronic diseases would not vary by participation in the School of Health.

Limitations and strengths

This study has some limitations. First, the use of questionnaires can lead to information bias. However, the same questionnaire was used before and after the intervention, and therefore a systematic information bias would not affect the change observed. Furthermore, the number of visits to primary care centres (GPs and nurses) was directly obtained from the objective records provided by these centres.

Second, the items to determine social isolation were not previously validated. However, there is a wide variability in the scales used to assess this term in previous studies.[20,23] In this study, indirect items related to social support have been used, which have been found well correlated with social isolation.[9,14,15,20]

Third, the sample size was small, which could limit its power to find significant changes in some items or the opportunity to stratify by different types of population. However, the sample size was sufficiently large to assess differences between paired-samples for the main variables of the study and is in line with the sample sizes used in similar evaluation studies.[19,20]

Finally, this is a pre–post study with a 6-month follow-up. Therefore, only short-term effects of the intervention were explored. Future evaluations should be conducted to determine whether the effects of the intervention persist over time. Moreover, they should be designed in order to analyze also the influence of the community factors in the intervention.

This study has also important strengths. First, the effectiveness of an intervention like this is not usually evaluated. Second, the health outcomes were evaluated using validated questionnaires, which ensured the validity of the results and their comparability with those of other studies. Third, a quasi-experimental study including a CG allowed to disregard the attribution of the effects to factors other than the intervention, increasing the internal validity of the study.

Conclusions and implications for practice

This work provides a novel contribution to the literature and evidence on how a 6-month community intervention can improve quality of life, mental health and social support in older people living in low-income neighbourhoods.

Interventions like 'The School of Health for the older people' are not only effective, but are also low cost compared with other kind of interventions or medical technologies. Community interventions may play a key role in improving the quality of life, mental health and social support of populations at high risk of vulnerability, such as older people and those living in deprived neighbourhoods.

Supplementary data

Supplementary data are available at *EURPUB* online.

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Conflicts of interest: None declared.

Key points

- There is a lack of evidence on the effectiveness of community interventions to reduce social isolation in older people.
- The intervention evaluated in this study improved quality of life, mental health and social support in older people.
- Community interventions may play a key role in improving the health of populations at high risk of vulnerability, such as older people and people living in deprived neighbourhoods.

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