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**Universitat Autònoma de Barcelona**

**Facultat de Medicina**

Departament de Pediatria, d'Obstetrícia i Ginecologia,  
i de Medicina Preventiva

**“Solitud, suport social i participació  
de les persones grans  
des d'una perspectiva de la salut”**



**TESI DOCTORAL**

**Laura Coll i Planas**

**Directores: Maria Teresa Puig Reixach i Fredrica Nyqvist**

Abril - 2017

All graphic material used in this thesis comes from the programme “Camins”.  
Sentences written in the section covers are expressions said by participants of the programme  
“Camins” and have been handwritten by my grandmother, Alicia Anzano.  
Graphic designer: Cecilia Garcia Rico.  
Photography of the cover: Anna Mas i Talens

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Memòria de Tesi com a compendi de publicacions presentada per Laura Coll i Planas per optar al grau de Doctor en Medicina per la Universitat Autònoma de Barcelona i realitzada sota la direcció de la Dra. Teresa Puig Reixach i la Dra. Fredrica Nyqvist



**Universitat Autònoma de Barcelona**

**Facultat de Medicina**

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i de Medicina Preventiva

# **Loneliness, social support and participation of older people from a health perspective**

**DOCTORAL THESIS**

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This is a compilation thesis based on publications presented by Laura Coll i Planas to receive the PhD in Medicine by the Universtat Autònoma de Barcelona and has been conducted under the supervision of Dr. Teresa Puig Reixach and Dr. Fredrica Nyqvist

It ain't what you do.  
It's the way that you do it.

Melvin "Sy" Oliver and James "Trummy" Young.

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## CONTENT TABLE

<b>1. Abstract</b>	<b>10</b>
<b>2. Background</b>	<b>17</b>
2.1 Ageing	18
2.1.1. Ageing in numbers	18
2.1.2 Ageing and public health	20
2.2. Loneliness	22
2.2.1. Definitions	22
2.2.2. Risk factors for loneliness and loneliness as a risk factor	22
2.2.3. Loneliness in long-term care	24
2.2.4. Loneliness interventions	25
2.2.4.1. Theoretical frameworks that inform interventions to reduce loneliness	25
2.2.4.2. Intervention strategies and effects	26
2.3. Social capital: an umbrella concept including social support and participation	27
2.3.1. Definitions	27
2.3.2. Social support, participation and health	33
2.3.3. Social capital and health	34
2.3.4. Social capital interventions in health research	35
2.3.5. Social capital interventions in health care practice and policy	36
2.3.6. Social capital as a social determinant of health and health inequalities	37
2.3.7. The context of Spain in social capital interventions from a health perspective	38
2.3.8. Harmful effects of social capital	38
2.4. Justification for this research	39
<b>3. Aims</b>	<b>41</b>
3.1. General aims	42
3.2. Specific aims	42
<b>4. Methods</b>	<b>45</b>
<b>5. Results</b>	<b>55</b>
5.1. Publications presented in this thesis	56
5.2. Summary of the main results	57
5.3. Original publications	63
ARTICLE 1: Social capital interventions targeting older people and their impact on health: a systematic review.	64
ARTICLE 3: Promoting social capital to alleviate loneliness and improve health among older people in Spain.	74
ARTICLE 5: Developing evidence for football (soccer) reminiscence interventions within long-term care: a co-operative approach applied in Scotland and Spain.	88
<b>6. Discussion</b>	<b>95</b>
6.1. Discussion of general aspects	96
6.1.1. Social capital interventions to address loneliness, social support and participation as health factors	96

6.1.2. Current evidence: contributions from the systematic review on social capital interventions on health effects	96
6.1.2.1. How social capital interventions impact health	97
6.1.2.2. Social capital dimensions and directions applied	98
6.1.2.3. Gender and other equity indicators and harmful effects in social capital interventions	99
6.1.2.4. Contributions from the taxonomy on social capital interventions	99
6.1.3. Contributions from our intervention programmes	100
6.1.3.1. Focusing on loneliness in the community: the programme “Camins”	100
6.1.3.2. Focusing on socialization and sense of belonging in long-term care: the football reminiscence programme	101
6.1.3.3. Social capital dimensions and directions applied in our programmes	102
6.1.3.3.1. About promoting social participation	103
6.1.3.4. Gender and other equity indicators and harmful effects in our programmes	104
6.1.4. Strengths, limitations and continuity	105
6.2. Some final personal thoughts on my research work	107
<b>7. Conclusions</b>	<b>109</b>
7.1. Implications for policy and practice	110
7.2. Implications for research	112
7.3. Final conclusions	115
<b>8. References</b>	<b>117</b>
<b>9. Annexes</b>	<b>128</b>
9.1. Annexes of the articles in submission process	129
9.1.1. Methods	129
9.1.2. Results	132
9.1.3. Completed articles	136
- ARTICLE 2: A taxonomy proposal (SOCAI) to guide the use of social capital in interventions aimed at improving health among older people.	136
- ARTICLE 4: “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.	177
9.2. Annexes of the published articles	209
9.2.1. Annexes of article 1	209
9.2.2. Annexes of article 3	268
9.2.3. Annexes of article 5	302
9.3. Other related scientific work:	318
- Coll-Planas, L. Promoting social capital in an ageing society: a win-win proposition? Gac Sanit 2016;30:323-5 - Vol. 30 Núm.5 DOI: 10.1016/j.gaceta.2016.03.018 Editorial.	318
- Coll-Planas, L., Monteserín, R., Cob, E., Blancafort, S. ¿Qué se está haciendo ya desde los equipos de atención primaria contra la soledad? What are primary care teams already doing against loneliness? Aten Primaria. 2017 Mar 30. pii: S0212-6567(16)30554-6. doi: 10.1016/j.aprim.2016.12.004. Carta al editor.	321

## 1. Abstract



Te hace pensar mucho. De decir  
"Bueno, tú ¿cómo lo ves?  
Tú ves aquello y cada uno lo ve a  
su manera, eh?"

It makes you think a lot. By saying, "well, how do you see it?" You see it your way, and everyone sees it their way, right?

## 1. Abstract

**BACKGROUND:** Ageing is a global success but poses specific challenges, such as an increased risk of loneliness, defined as a hunger for social relationships. In Spain, 14% of people over 65 feels lonely all or most of the time, being among the highest prevalence in the European Union. Loneliness is an established risk factor for poor health, while social support and social participation (embedded in the umbrella concept of social capital) are established protective factors for health. Their health effects are comparable with smoking (cessation) and physical (in)activity according to observational studies. However, experimental research in this area is weak. Therefore, in order to build an evidence base and to support the design, implementation, evaluation and synthesis of interventions in this area, we aimed to:

1. Conduct a systematic review of current evidence on interventions that promote social capital among older people to improve their health.
2. Design, implement and evaluate interventions in our context that promote social capital to alleviate loneliness among community-dwelling older people and among older people living in long-term care.

**METHODS:** We conducted a systematic review of trials with interventions that promote social capital (or its components) among older people and assessed the impact on any health outcome or the use of health-related resources. Complementarily, we built a taxonomy to guide social capital interventions combining theoretical frameworks on social capital and health with current epidemiological evidence (i.e., the trials included in the systematic review). We designed, implemented and evaluated two intervention programmes. 1) The programme “*Camins: de la solitud a la participació*” (“*Pathways: from loneliness to participation*”) promoted social support and participation among lonely older adults in the community. The complex intervention was conducted in three primary health care centres in Spain in a pre–post study with a two-year follow-up. Health and social care professionals conducted the group-based intervention and older people active in senior centres volunteered as gatekeepers. The intervention was evaluated with quantitative and qualitative methods. 2) The football-based reminiscence programme targeted older people with dementia. The group-based intervention was conducted in three long-term care settings in Spain in a pre–post study. Health professionals conducted the group, former football players contributed as volunteers with their knowledge and former football players with dementia also participated in the intervention. The programme was evaluated with qualitative methods.

**RESULTS:** In the systematic review, we examined 17,341 abstracts and included 36 trials. Trials were clinically and methodologically diverse. Interventions showed mixed effects on quality of life, well-being and self-perceived health and were generally ineffective on loneliness, mood and mortality. Trials of high quality showed favourable impacts on overall, mental, and physical health, mortality and use of health-related resources. Complementarily, we developed the SOCAI taxonomy that characterized social capital-based interventions according to health-related goals, social capital-related contents, processes and contexts. The intervention “*Camins*” proved to be feasible, 38 participants were in-



cluded and 10 volunteers took part. After the intervention, loneliness significantly decreased while social participation and support significantly increased. Exactly 65.8% of the participants built social contacts within the group and 47.4% became engaged in new activities. After the two-year follow-up, social effects were maintained and depressive symptoms had decreased. Complementary, the qualitative evaluation revealed how the programme had effects on loneliness, social participation, social support, and health. In the football-based reminiscence programme, a total of 20 people with dementia participated; three of them were former players. In addition, four former football players volunteered. The agents involved reported benefits in the participants regarding communicative interactions, cognitive abilities, mood and psychological well-being. Furthermore, it encouraged interaction between participants and provided a sense of belonging. Findings obtained in Spain were combined with those obtained in Scotland to develop a conceptual model for practice.

**DISCUSSION:** The systematic review is the first one that assesses the impact of clinical trials based on social capital on health outcomes. It highlights the lack of evidence, high clinical diversity between trials and the low quality, while suggesting the potential of social capital to impact health in older adults. Complementary, the SOCAI taxonomy is the first one to systematize evidence to fill the gap between social capital theory and practice from a health perspective. The intervention “Camins” contributes a novel and culturally appropriate strategy for alleviating loneliness among older adults while prompting meaningful changes in their lives. Group-based football reminiscence interventions are feasible and brought people with dementia together to enjoy a shared and meaningful activity. Both intervention designs were enriched by theoretical frameworks and contributed towards creating conceptual models to guide further programmes.

**CONCLUSIONS:** This thesis contributes epidemiological and conceptual work to support introducing social capital as a protective health factor and loneliness as a risk factor for health into intervention strategies targeting older people. Furthermore, social capital should be especially considered from a salutogenic approach as source of health and well-being, and thus as a way of contributing to a more meaningful life in ageing. However, achieving the potential health benefits of social capital faces a major challenge: understanding and managing the complexity of effectively improving existing networks and successfully creating new ones while considering costs, adverse effects and its implications in health inequalities.

## 1. Resum

**INTRODUCCIÓ:** L'envelliment és un èxit a nivell global però comporta reptes específics, com un augment del risc de soledat, definida com l'anhel de relacions socials. A Espanya, 14% de les persones més grans de 65 anys se sent sola sempre o la major part del temps, essent aquesta una prevalença de les més altes de la Unió Europea.

La soledat és un factor de risc establert de mala salut, i el suport social i la participació social (integrats en el concepte paraigües de capital social) són factors protectors de la salut també ben establerts. Cal remarcar que els seus efectes en salut han estat comparables amb (deixar de) fumar i la (in)activitat física segons estudis observacionals. De totes maneres, la recerca experimental en aquesta àrea és feble. Per aquests motius, per tal de construir una base d'evidència per donar suport al disseny, la implementació, l'avaluació i la síntesis d'intervencions en aquesta àrea, els objectius són:

1. Realitzar una revisió sistemàtica de l'evidència actual en intervencions que promouen el capital social entre les persones grans per tal de millorar la seva salut.

2. Dissenyar, implementar i avaluar intervencions en el nostre context que promoguin el capital social per tal d'alleugerir la soledat de les persones grans de la comunitat i d'aquelles que viuen a l'entorn residencial.

**MÈTODES:** S'ha realitzat una revisió sistemàtica d'assajos clínics amb intervencions que promouen el capital social (o els seus components) en les persones grans i que avaluen l'impacte en qualsevol resultat de salut o en l'ús de recursos relacionats amb la salut. Complementàriament, s'ha construït una taxonomia per tal de guiar les intervencions en capital social combinant marcs teòrics de capital social i salut amb evidència epidemiològica actual (és a dir, els assajos clínics inclosos a la revisió sistemàtica). S'han dissenyat, implementat i avaluat dues intervencions. 1) El programa "*Camins: de la solitud a la participació*" ha promogut el capital social i la participació de persones grans de la comunitat que se senten soles. La intervenció complexa s'ha implementat a tres centres d'atenció primària de salut d'Espanya en un estudi pre-post amb un seguiment de dos anys. Professionals de l'atenció social i sanitària han dinamitzat el grup i persones grans actives en casals de gent gran han participat com a voluntàries per tal de facilitar la vinculació amb els recursos de la comunitat. La intervenció ha estat avaluada quantitativa i qualitativament. 2) El programa de reminiscència basat en el futbol s'ha adreçat a persones grans amb demència. La intervenció grupal s'ha realitzat a tres centres residencials d'Espanya en un estudi pre-post. Professionals de la salut han conduït el grup, exfutbolistes han fet de voluntaris aportant els seus coneixements i exfutbolistes amb demència també han participat en la intervenció. El programa s'ha avaluat amb mètodes qualitius.

**RESULTATS:** En la revisió sistemàtica, s'han examinat 17.341 *abstracts* i inclòs 36 assajos clínics. Els assajos clínics eren clínica i metodològicament diversos. Les intervencions han mostrat efectes mixtes en qualitat de vida, benestar i salut autopercebuda, i han estat generalment inefectives en soledat, estat d'ànim i mortalitat. Els assajos clínics d'alta qualitat han mostrat resultats favorables en salut general, mental i física, mortalitat i ús de recursos relacionats amb la salut. Complementàriament, s'ha desenvolupat la taxonomia SOCAI que caracteritza intervencions basades en capital social segons els seus

objectius relacionats amb la salut, segons els seus continguts relacionats amb el capital social, i segons els processos i contextos. La intervenció “*Camins*” s’ha provat com a factible, 38 participants van ser inclosos i es van implicar 10 persones voluntàries. Després de la intervenció, la soledat va disminuir significativament, i la participació i el suport van augmentar significativament. Exactament el 65,8% dels participants van construir nous contactes socials dins del grup i el 47,4% es va implicar en noves activitats. Als dos anys de seguiment, els efectes socials es van mantenir i els símptomes depressius van disminuir participant en activitats. Complementàriament, l’avaluació qualitativa va fer palès com el programa tenia efectes en soledat, participació social, suport social i salut. En el programa de reminiscència basada en el futbol, un total de 20 persones amb demència van participar, tres dels quals eren exfutbolistes. A més, quatre exfutbolistes van ser voluntaris. Els agents involucrats van reportar beneficis en relació amb les interaccions comunicatives, habilitats cognitives, estat d’ànim i benestar psicològic. A més, la intervenció va encoratjar la interacció entre participants i els va aportar sentiment de pertinença. Els resultats obtinguts a Espanya van ser combinats amb els d’Escòcia per desenvolupar un model conceptual per a la pràctica.

**DISCUSSIÓ:** Aquesta és la primera revisió sistemàtica que valora l’impacte d’assajos clínics basats en el capital social en resultats de salut. Destaca la falta d’evidència, l’alta diversitat clínica i la baixa qualitat, mentre suggereix el potencial del capital social d’impactar en la salut de les persones grans. Complementàriament, la taxonomia SOCAI ha estat la primera en sistematitzar l’evidència per omplir el buit entre la teoria i la pràctica de capital social des d’una perspectiva de la salut. La intervenció “*Camins*” ha aportat una estratègia d’intervenció innovadora, apropiada al nostre context cultural per tal d’alleugerir la solitud de les persones grans promovent canvis significatius en les seves vides. El programa grupal de reminiscència basat en el futbol ha estat factible i ha unit persones amb demència per gaudir d’una activitat compartida i significativa. Ambdós dissenys d’intervenció han estat enriquits per marcs teòrics i han contribuït a crear models conceptuals per guiar futurs programes.

**CONCLUSIONS:** Aquesta tesi aporta un treball epidemiològic i conceptual per tal de donar suport a la introducció del capital social com a factor protector de la salut, i la solitud com un factor de risc, en estratègies d’intervenció adreçades a persones grans. A més, el capital social hauria de ser especialment considerat des d’una perspectiva de la salutogènesi com un recurs de salut i benestar i, així doncs, com una manera de contribuir a una vida més significativa a l’envellir. De totes maneres, per tal d’aconseguir els potencials beneficis en salut del capital social cal afrontar un repte major: entendre i gestionar la complexitat de millorar efectivament les xarxes socials existents i crear-ne de noves amb èxit, tot considerant els costos, els efectes adversos i les seves implicacions en les desigualtats en salut.

## 1. Resumen

**INTRODUCCIÓN:** El envejecimiento es un éxito a nivel global pero conlleva retos específicos, como un aumento del riesgo de soledad, definida como el hambre de relaciones sociales. En España, el 14% de las personas mayores de 65 años se siente sola siempre o la mayor parte del tiempo, siendo una prevalencia de las más altas de la Unión Europea.

La soledad es un factor de riesgo establecido de mala salud, y el apoyo social y la participación social (integrados en el concepto paraguas de capital social) son factores protectores de la salud también bien establecidos. Hay que remarcar que sus efectos en salud han sido comparables con (dejar de) fumar y la (in)actividad física según estudios observacionales. Sin embargo, la investigación experimental es débil. Por estos motivos, con el fin de construir una base de evidencia para dar apoyo al diseño, la implementación, la evaluación y la síntesis de intervenciones en este área, los objetivos son:

1. Realizar una revisión sistemática de la evidencia actual en intervenciones que promueven el capital social entre las personas mayores para mejorar su salud.

2. Diseñar, implementar y evaluar intervenciones en nuestro contexto que promuevan el capital social con el fin de aliviar la soledad de las personas mayores de la comunidad y de aquellas que viven en el entorno residencial.

**MÉTODOS:** Se ha realizado una revisión sistemática de ensayos clínicos con intervenciones que promueven el capital social (o sus componentes) en las personas mayores y que evalúan el impacto en cualquier resultado de salud o en el uso de recursos relacionados con la salud. Complementariamente, se ha construido una taxonomía que guíe las intervenciones en capital social combinando marcos teóricos de capital social y salud con evidencia epidemiológica actual (es decir, los ensayos clínicos incluidos en la revisión sistemática). Se han diseñado, implementado y evaluado dos intervenciones. 1) El programa “*Camins: de la solitud a la participació*” (“*Caminos: de la soledad a la participación*”) ha promovido el capital social y la participación de personas mayores de la comunidad que se sienten solas. La intervención compleja se ha implementado en tres centros de atención primaria de salud de España en un estudio pre-post con un seguimiento de dos años. Los profesionales de la atención social y sanitaria han facilitado el grupo y las personas mayores activas en centros de mayores se han ofrecido voluntarias para facilitar la vinculación con los recursos de la comunidad. La intervención se ha evaluado cuantitativa y cualitativamente. 2) El programa de reminiscencia basado en el fútbol se ha dirigido a personas mayores con demencia. La intervención grupal se ha realizado en tres centros residenciales de España en un estudio pre-post. Los profesionales de la salud han conducido el grupo, exfutbolistas han hecho de voluntarios aportando sus conocimientos y exfutbolistas con demencia también han participado en la intervención. El programa se ha evaluado con métodos cualitativos.

**RESULTADOS:** Se han examinado 17.341 *abstracts* e incluido 73 artículos que corresponden a 36 ensayos clínicos. Los ensayos clínicos eran clínica y metodológicamente diversos. Las intervenciones han mostrado efectos mixtos en calidad de vida, bienestar y salud autopercebida, y han sido generalmente inefectivas en soledad, estado de ánimo y mortalidad. Los ensayos clínicos de alta calidad han mostrado resultados favorables en salud general, mental y física, mortalidad y uso de recursos

relacionados con la salud. Complementariamente, se ha desarrollado la taxonomía SOCAI que caracteriza intervenciones basadas en capital social según sus objetivos relacionados con la salud, según sus contenidos relacionados con el capital social, y según los procesos y contextos. La intervención “*Camins*” se ha probado como factible, 38 participantes fueron incluidos y se implicaron 10 personas voluntarias. Después de la intervención, la soledad disminuyó significativamente, y la participación y el apoyo aumentaron significativamente. Exactamente el 65,8% de los participantes construyeron nuevos contactos sociales dentro del grupo y el 47,4% se implicó en nuevas actividades. A los dos años de seguimiento, los efectos sociales se mantuvieron y los síntomas depresivos disminuyeron participando en actividades. Complementariamente, la evaluación cualitativa mostró como el programa tenía efectos en soledad, participación social, apoyo social y salud. En el programa de reminiscencia basada en el fútbol participaron un total de 20 personas con demencia, tres de las cuales eran exfutbolistas. Además, cuatro exfutbolistas fueron voluntarios. Los agentes involucrados reportaron beneficios en relación a las interacciones comunicativas, las habilidades cognitivas, el estado de ánimo y el bienestar psicológico. Además, la intervención alentó la interacción entre participantes y les aportó sentimiento de pertenencia. Los resultados obtenidos en España se combinaron con los de Escocia para desarrollar un modelo conceptual para la práctica clínica.

**DISCUSIÓN:** Esta es la primera revisión sistemática que valora el impacto de ensayos clínicos basados en el capital social en resultados de salud. Destaca la falta de evidencia, la alta diversidad clínica y la baja calidad, y sugiere el potencial del capital social para impactar en la salud de las personas mayores. Complementariamente, la taxonomía SOCAI es la primera en sistematizar la evidencia para llenar el vacío entre la teoría y la práctica del capital social desde una perspectiva de la salud. La intervención “*Camins*” ha aportado una estrategia de intervención innovadora, apropiada a nuestro contexto cultural para aliviar la soledad de las personas mayores promoviendo cambios significativos en sus vidas. El programa grupal de reminiscencia basado en el fútbol ha resultado factible y ha juntado personas con demencia para disfrutar de una actividad compartida y significativa. Ambos diseños de intervención han sido enriquecidos por marcos teóricos y han contribuido a crear modelos conceptuales para guiar futuros programas.

**CONCLUSIONES:** Esta tesis aporta un trabajo epidemiológico y conceptual con la finalidad de introducir el capital social como factor protector de la salud, y la soledad como un factor de riesgo, en las estrategias de intervención dirigidas a personas mayores. Además, el capital social debería ser especialmente considerado desde una perspectiva de la salutogénesis como un recurso de salud y bienestar, así como una manera de contribuir a una vida más significativa al envejecer. Sin embargo, para conseguir los beneficios potenciales en salud del capital social es necesario afrontar un reto mayor: entender y gestionar la complejidad de mejorar efectivamente las redes sociales existentes y crear nuevas redes con éxito, considerando los costes, efectos adversos y sus implicaciones en las desigualdades en salud.

## 2. Background



*Io mi sento sola... però... no estic sola*

**I feel lonely... but... I'm not alone...**

## 2. Background

This thesis is focused on ageing as a challenge, particularly, in the social sphere of older people from a health perspective. Therefore, it addresses loneliness as a major cause of discomfort, and the promotion of social support and social participation as a strategy to alleviate loneliness. Moreover, it also targets how social support and social participation improve health and well-being among older people, including loneliness but not exclusively, to get a broader picture of the potential benefits of this type of intervention. This work uses the term social capital as an umbrella concept that embeds social support and participation, among other social resources.

The background includes the definitions of the main terms used since they are polysemic and used with different meanings. It highlights global and local data as well as the state of the art of research in this area. Moreover, theoretical frameworks are presented as a basis for the empirical work, together with the main related global and local policies.

The **first chapter** frames the work around the relevance of ageing as a global trend and presents its social dimension from a public health perspective.

The **second chapter** focuses on loneliness as a major cause of discomfort, its causes, its consequences, different approaches to inform interventions and current evidence linking loneliness and health from observational and experimental studies. It highlights the relevance of loneliness among community-dwelling older adults and those in long-term care settings.

The **third chapter addresses** social support and social participation as a strategy to alleviate loneliness and to improve other health and well-being aspects among older people. It presents the term “social capital” as an umbrella concept that embeds social support and participation and its implications for health, including health inequalities. Afterwards, we justify the need for this research.

### 2.1. Ageing

#### 2.1.1. Ageing in numbers

Older people are the world's fastest growing population group.<sup>1,2</sup> Persons aged 60 years or over are increasing in number and proportion all across the world. Although the speed of population ageing varies across countries, it is particularly rapid in the European Union.<sup>2</sup> Globally, the United Nations estimates that older persons aged 60 years or over will increase from 810 million in 2015 to more than 2 billion in 2050.<sup>2</sup>

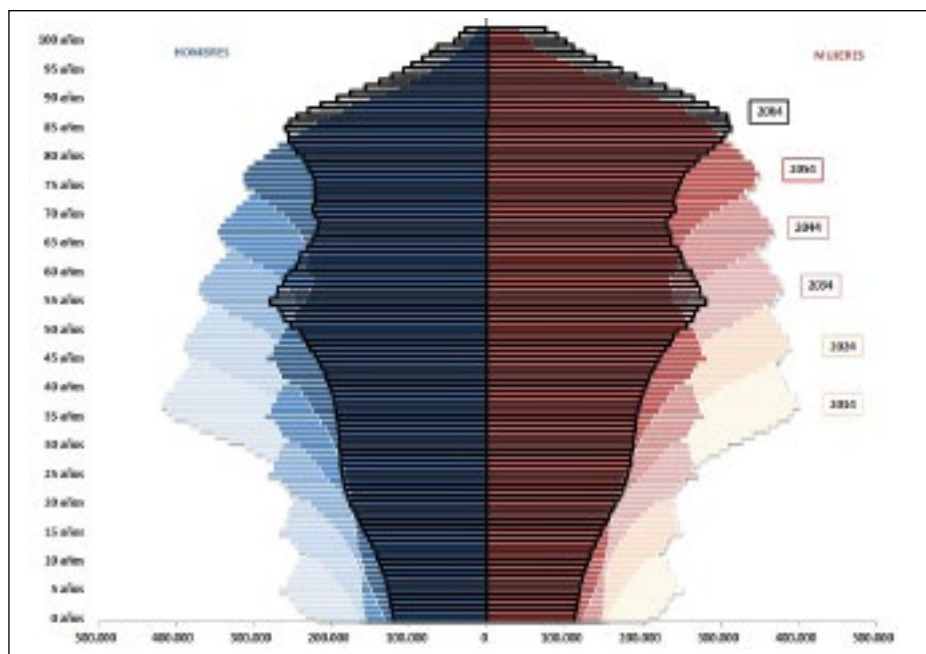
On average, women live longer than men. Specifically, in 2010–2015, women overall lived an average of 4.5 years more than men. Thus, women are a majority among older persons, even more so at more advanced ages. In particular, women comprised 54% of the global population aged 60 years or over and 61% among those aged 80 years or over. Global projections for 2050 estimate that the sex balance will remain relatively unchanged. Specifically, the ratio in 2015 of 86 men for every 100 women aged



60 years or over, and 63 men for every 100 women aged 80 years or over is expected to rise to 89 and 73 respectively.<sup>3</sup>

In Spain, according to the INE (Instituto Nacional de Estadística), in 2015 there were 8,573,985 older people (aged 65 years or over), representing 18.4% of the overall population (46,624,382).<sup>4</sup> Projections for 2061 estimate more than 16 million older people, representing 38,7% of the overall population. Life expectancy in Spain at birth and at age 65 years, among men and women, is among the highest in the European Union. Specifically, in 2014, Spanish women had a life expectancy at birth of 85.6 years old, and Spanish men of 80.1 (INE).<sup>4</sup> Spanish data also show that there were 33% more older women (4,897,713) than older men (3,676,272) in 2015.<sup>4</sup> See the projections of the Spanish population in figure 1 and 2.

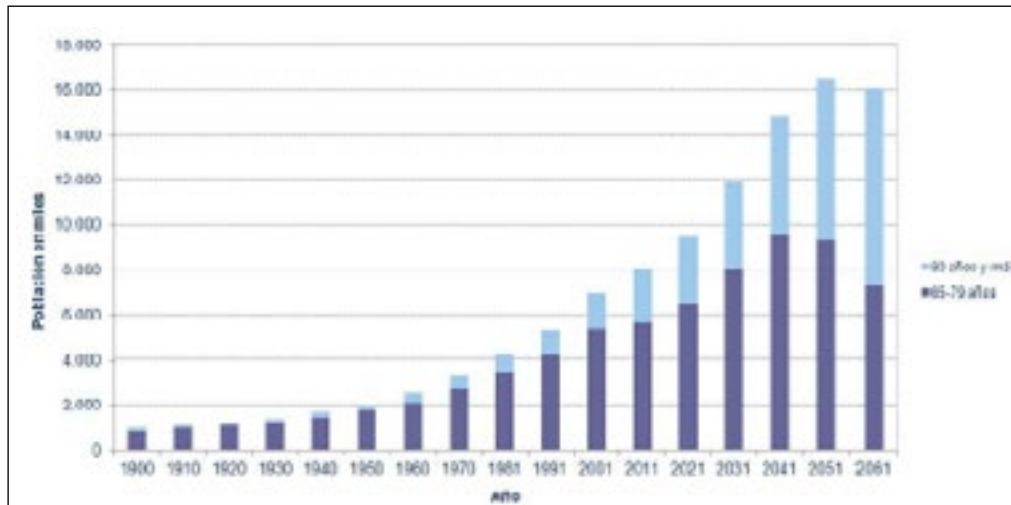
Figure 1. Projection of population according to sex and age. Spain 2014-2064.



Source: INE (Spanish National Institute of Statistics)



Figure 2. Evolution of the older population, 1900-2061  
Population in thousands



Source: INE

1900-2001: Population figures

2011: Population figures. National results, population and housing census 2011

2021-2061: Projections of population. Consulted in January 2016.

Ageing increases the likelihood of developing disabilities and dementia, thus requiring support from the family and the social network and from long-term care (LTC) services. These services include publicly and privately provided institutional and community care (services received at home), the latter of which are currently growing. In the OECD countries (Organisation for Economic Co-operation and Development), the proportion of the population receiving LCT has increased from 1.9% in 2000 to 2.3% in 2013. The availability of publicly funded LCT and the cultural norms around the degree to which families look after older people determines the diverse utilisation of LTC services across countries.<sup>2</sup> In Spain, in 2011 270,286 people were living in a nursing home. The vast majority of them were aged 65 or over. This data represented 3.3% of older people. In 2001, the total number was of 96,338 persons and the proportion was 1.4%. Accordingly, the proportion of older people living in a nursing home has been duplicated from 2001 to 2011.<sup>4</sup>

### 2.1.2. Ageing and public health

Ageing is commonly seen as a problem and a deficit perspective sustains ageism thus hiding older people's potential at a social, economic and political level. However, the WHO stated the global ageing trend is a success but also a challenge to face.

Public health has increased its attention on ageing reinforcing a shift towards a strengths-based and salutogenic approach. However, the WHO has recently warned that health systems around the world are failing to meet the needs of older persons. Specifically, the report states:<sup>5</sup>

*Current public-health approaches to population ageing have clearly been ineffective. The health of older people is not keeping up with increasing longevity; marked health inequities are apparent in the health status of older people; current health systems are poorly aligned to the care that older populations require even in high-income countries; long-term care models are both inadequate and unsustainable; and physical and social environments present multiple barriers and disincentives to both health and participation.*

Accordingly, public health, health care systems and long-term care models require urgent actions to respond to the challenge of ageing, facing health inequalities and also physical and social environments.

This is precisely the big challenge that frames this thesis.

Old age is associated with major changes in the **social environment** mainly due to the loss of role after retirement, widowhood, loss of peers and age-related disability, with older people thus being especially at risk of social isolation and loneliness once the ability to adapt to these changes declines.<sup>6</sup> Moreover, the lack of social integration also contributes to poor health.<sup>7</sup> At the same time, current societal and structural changes are reframing the quantity and quality of social contacts in a variety of ways. Changes in the family structures reinforce loneliness by increasing the number of people living alone. Nevertheless, the vision of ageing is slowly but increasingly moving from a protection approach towards older people as vulnerable human beings to a framing of generativity, emphasizing older people's productive and collective roles.<sup>8</sup> Likewise, other social changes such as the increasing use of new technologies provide new opportunities for social relationships and participation in ageing. Moreover, the assumption that the proportion of older people feeling loneliness is increasing has been questioned.<sup>9,10</sup> Accordingly, an increased tendency to reflect actively on our experiences and build satisfying relationships could explain why loneliness is remaining stable or even decreasing. In comparison, other authors like Zygmunt Bauman have pointed out that the liquid modernity, with its less binding social bonds in the community, in intimate relationships, friendship, and kinship may account for a more generalised distribution of loneliness.<sup>11,12</sup> In this vein, the increasing innovative means of communicating and interacting via online socializing would indeed generate loneliness, by structuring social relations in such a way that contributes to the new model of sociability based on individualism.<sup>11,12</sup>

The importance of social relationships and social engagement in later life was first pointed out in the model of successful ageing.<sup>13</sup> Then, in 2002, the World Health Organization (WHO) defined the **Active Ageing** paradigm as *"the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age"*.<sup>14</sup> Thus, the WHO Active Ageing policy emphasizes participation next to security and health, while reinforcing social wellbeing as part of the health concept. In this framework, policies and programmes that promote mental health and social connections are as important as those that improve physical health status. Moreover, it is an inclusive framework with a life-cycle approach and thus seeks to apply the mentioned process of optimization to the entire ageing population, from those who are robust to those who are frail or have severe disabilities or dementia. The WHO policy urges local governments to work in this line. This paradigm was updated in 2015, highlighting, among other aspects, the connection between social support, loneliness and mental and

physical health, and encouraging the promotion of social networks for ageing people while highlighting that social networks shape resilience and health throughout life.<sup>15</sup>

## 2.2. Loneliness

### 2.2.1. Definitions

**Loneliness** is understood as a negative feeling due to the perception that the social needs of the person are not corresponded, neither in quantity nor in quality, by the social relationships that the person has.<sup>16</sup> It is a subjective experience and, accordingly, can only be described by a person him/herself.<sup>17</sup>

From an evolutionary perspective, loneliness has also been defined as the hunger for social relationships to survive.<sup>18</sup>

**Social loneliness** occurs when the number of relationships with friends and colleagues is smaller than is considered desirable, while **emotional loneliness** refers to situations where the intimacy in confident relationships one wishes for has not been realized.<sup>19</sup>

**Aloneness:** having no one else present. It does not reveal anything about how the person is feeling.

**Solitude:** the state or situation of being alone. The work of Anthony Storr emphasized the benefits and joy of solitude.<sup>20</sup> Thus, it reinforced the positive implications of aloneness enhancing individual's well-being and productivity.

**Living alone:** is a risk factor for feeling lonely but it does not imply loneliness; it depends on how the person copes with it.

**Social isolation:** it refers to the low number of contacts with others and can be objectively measured. Loneliness and social isolation are inter-related and often used interchangeably.<sup>17</sup>

In the English language *loneliness*, *aloneness* and *solitude* refer to different although related phenomena. In comparison, we only have the term “**soledad**” in Spanish, and the term “**soledat**”, a synonym of “**solitud**”, in Catalan. Therefore, they are often used to refer to being alone, to feeling lonely and to living alone. In Catalan, to refer to the discomfort or well-being associated to aloneness, it is often used the term of “**soledat volguda**” and “**soledat no volguda**”, i.e., “wanted or unwanted aloneness/loneliness”.

### 2.2.2. Risk factors for loneliness and loneliness as a risk factor

Epidemiological studies have shown a high number of risk factors to be consistently associated with loneliness: socio-demographic, health-related, social, psychological and contextual aspects.

Socio-demographic risk factors include age, being a woman, living alone and having limited education and a low socioeconomic status. The relationship between age and loneliness shows a U-shaped curve due to the relatively higher rates of loneliness around adolescence, a decrease in adulthood and

an increase again in old age.<sup>21</sup> Furthermore, differences in loneliness between urban and rural areas seem to disappear when taking gender, income and education into account.<sup>17</sup>

Health factors comprise: poor self-rated health, functional decline and depression. Social aspects include: weak social support, poor quality and infrequent contacts or small quantity of social networks and negative life events such as recent bereavement.<sup>22–25,17</sup> In addition, those living alone and having bad health are ten times more likely to feel lonely than those living with someone and having good health.<sup>26</sup> Regarding social networks, contact with friends and neighbours have stronger associations with loneliness than contact with family members.<sup>22</sup> From a psychological perspective, low competence and low self-efficacy, understood as the confidence and self-belief an individual has about performing an activity, including the confidence to overcome perceived barriers to change, have also been shown to predict loneliness.<sup>27–29</sup>

Social and physical losses are linked to being alone but do not always entail feeling lonely. Previous qualitative research points out that the way older people handle loss explains whether they feel lonely or not, and this is key in their attitudes towards social participation and social relationships.<sup>30</sup> According to this previous research, those feeling overwhelmed by loss feel lonely and have problems finding meaningful activities, and encounter difficulties in keeping up social relations.

As mentioned above, being a woman is a risk factor for loneliness. However, the specific association between gender and loneliness is unclear. Some studies showed that women were more likely than men to report loneliness,<sup>31</sup> while other studies reveal that the higher prevalence among women was mediated by widowhood.<sup>32</sup> Other studies indicated that loneliness was differently associated with mental and physical health among men and women.<sup>33</sup> Accordingly, in men loneliness was more associated with depression, low satisfaction with life and low resilience, although women had more disadvantaged situations regarding living arrangements, physical and mental health.

The prevalence of loneliness also differs across nations, with the nation in which one lives having a greater impact than age on reported loneliness.<sup>21</sup> Specific national cohort studies allow establishing the prevalence of loneliness at country level and its changes over time.<sup>10</sup> To compare countries, repeated European cross-sectional surveys such as the European Social Survey (ESS) and the Survey of Health, Ageing, and Retirement in Europe (SHARE study) provide reliable cross-national comparative data. According to the SHARE study, the prevalence of loneliness (i.e. feeling lonely all or most of the time) among people over 65 varies in Europe from 4% in Switzerland to 20% in Greece, and stands at 14% in Spain.<sup>26</sup> While the ESS indicates a range from 3.2% in Denmark to 34% in Ukraine of people over 60 feeling lonely over the past week all or most of the time, the figure stands at 11.5% in Spain.<sup>21</sup> Both studies confirm a north-south gradient, with loneliness always being higher in southern countries, contrary to what is generally assumed. The north-south gradient seems to be related with a poorer social integration in terms of lower participation in social organizations and personal networks, and higher expectations of family members in southern countries compared to Northern European countries.<sup>9,34,35</sup> This is despite the fact that the south presents more favourable social conditions: its dominant pattern of parent-child relations comprises co-residence and daily contact.<sup>36</sup> Likewise, the proportion of older people (65 and above) living alone in Europe is 31.1%, ranging from 19% in Greece to 43% in Denmark. In Spain, it is 22.5% and in Catalonia, 24% of older people live

alone. Twice as many women as men are living alone in Europe (40.1% of women versus 19.3% of men) and in Spain (28.8% of women and 14.2% of men).<sup>37</sup>

Thus, Spain is one of the countries with the highest prevalence of loneliness. It has been specifically attributed to a combination of factors such as a high age, a high proportion of women, a high proportion of unmarried individuals, unfavourable socioeconomic circumstances, poor health, and limited social networks.<sup>38</sup> Moreover, a relatively large group of older people provides personal care to a household member, explaining part of the large prevalence of loneliness.<sup>38</sup>

There is also increasing evidence that loneliness is a risk factor for negative health outcomes. Thus, at the same time, poor health is a risk factor for loneliness and loneliness a risk factor for poor health. Observational studies and systematic reviews indicate loneliness as an established risk factor for a diversity of mental and physical health outcomes, such as an increased incidence of depression, dementia and all-cause mortality.<sup>39,40</sup>

Moreover, loneliness has been associated with an increased use of health services in primary care consultations as well as in emergency hospitalisations,<sup>41–43</sup> thus increasing workload and health care system costs. Loneliness also increases the odds of an early move to a nursing home.<sup>44,45</sup>

### 2.2.3. Loneliness in long-term care

Older people living in long-term care also suffer from loneliness despite being surrounded by others. Indeed, living in a nursing home is associated with higher levels of loneliness.<sup>22</sup>

Moving into a nursing home has significant influences on social relationships: visits from family and friends tend to decrease, new relationships can be established with other residents and staff but there is a high prevalence of disability and dementia among residents and there is a low possibility of intimate relationships. In addition, nursing home residents have a low sense of autonomy and control over their own life and being dependent limits reciprocity on giving and receiving, making them feel useless and meaningless with no significant roles to play.<sup>46,47</sup> Moreover, in this setting, death is ever-present.<sup>48</sup>

There is a lack of studies on loneliness among nursing home residents and thus few data. However, residents are suggested to be at risk for loneliness since their characteristics (female gender, low socioeconomic status, recent losses, disabilities, poor health and cognitive decline) are in line with established risk factors for loneliness.<sup>48</sup>

A study showed that 54% of cognitively intact nursing home residents in Norway suffered from loneliness.<sup>49</sup> However, the majority of residents suffer from cognitive decline.

In a Spanish study, institutionalized and community-dwelling older people showed similarities and differences regarding factors associated with loneliness.<sup>50</sup> In both groups, depression and disability were factors contributing to loneliness. In the community, living without a partner was a significant risk factor, while contact with family, friends, and neighbours was related with loneliness only in long-term care settings.

A study performing the same comparison among very old people (over 85 years old) in Sweden and Finland, found that loneliness was experienced often or sometimes by 55% of those living in institutional settings and 45% of those living in the community.<sup>25</sup> Depression was linked with loneliness in long-term care and very old community-dwelling people suffered from more loneliness when living alone.

In conclusion, contextual aspects such as geographical locations and residential setting are also high determinants of loneliness.

## 2.2.4. Loneliness interventions

### 2.2.4.1. Theoretical frameworks that inform interventions to reduce loneliness

Loneliness is modifiable through psychosocial interventions, especially those that are theory-driven.<sup>51,52</sup> There are indeed several theoretical frameworks that aim to explain loneliness and inform interventions to reduce it, but it is not yet clear which one supports interventions better in terms of more effectiveness for which populations and which contexts, or their complementarity.

Firstly, the **Loneliness Model** differentiates **mild** and **transient** loneliness from **chronic loneliness**. **Mild** and **transient** loneliness contribute to the maintenance or repair of meaningful social connections (e.g., returning home after a trip). **Chronic loneliness** occurs when meaningful social connections are perceived as severed or unavailable, producing harmful effects on cognition and behaviour and thus justifying the need to intervene.<sup>53</sup> According to this model, chronic loneliness entails a cognitive bias consisting of a self-reinforcing loop associated with feeling unsafe, hypervigilance for social threat and negative social expectations that cause social distance.<sup>39</sup> This model supports cognitive behavioural therapy interventions to correct deficits in social skills and address maladaptive social cognition.<sup>54</sup>

Contrary to the Loneliness Model and according to the **empowerment theory**, loneliness is considered to be potentially alleviated through empowering lonely older people to increase their self-esteem and feeling of mastery over their own life.<sup>55-57</sup> Some interventions have applied this theory especially to promote friendship among older people.<sup>56,58</sup>

In gerontology, **three ageing** crises have been related to loneliness: the identity, the autonomy and the belonging crises.<sup>59</sup> The **identity crisis** refers to no longer feeling like who they used to be. This crisis is related with changes in the body, appearance and the loss of productive roles. The **autonomy crisis** means not feeling able to do what they used to do and is linked with the age-related disability process. The **belonging crisis** refers to the feeling that they do not belong to the places and groups of persons to which they used to belong. It is due to the loss of a partner and peers and is reinforced by the social and environmental changes they perceive around them. Remarkably, these three crises reinforce each other; for instance, losing the sense of belonging and autonomy endanger the sense of identity.

Our research work is grounded on the empowerment model and the three ageing crises.

### 2.2.4.2. Intervention strategies and effects

Systematic reviews on loneliness interventions identify certain characteristics related to higher efficiency:<sup>51,52,60</sup> group-based interventions; providing educational input or enhancing support; targeting specific groups of older adults; theory-driven interventions; training and support given to the facilitators; active participation of the older adults in the group decision-making, planning, implementation and evaluation; utilization of external community resources and building community capacity.

Intervention strategies to alleviate loneliness have been previously classified by Masi et al. according to:<sup>54</sup>

- a) Improving social skills: social training skills.
- b) Enhancing social support: intervention offering regular contact, care or companionship.
- c) Increasing opportunities for social interaction: social access to social activities.
- d) Addressing abnormal social cognition: social cognitive training.

This classification was applied in their systematic review and meta-analysis on loneliness interventions across the life span and the authors concluded that all four strategies were effective, although social cognitive training was significantly more effective than the others. However, it is important to highlight that half of the included randomized trials (10 out of 20) targeted older people and most of them (seven out of 10) applied an intervention strategy based on increasing social support. Moreover, only one trial applied the strategy of social access (i.e., increasing opportunities for social interaction) to older people and had no success. This intervention only covered technical training in basic computer use, use of email and introduction to Internet and did not actively promote social connections.

Effective trials in reducing loneliness were a total of seven (out of 20) and three of them were social support interventions, two targeting older people and one combining adults and older adults. One further effective trial targeting older adults was an individual reminiscence therapy intervention in a nursing home in Taiwan,<sup>61</sup> classified by authors as social cognitive training. The remaining effective trials targeted young populations like students.

Therefore, the meta-analysis conclusions from Masi et al. on the higher effectiveness of social cognitive training are biased by results of trials targeting young populations and do not apply to older adults. As regards trials on older adults, the most common intervention strategy applied to decrease loneliness was based on social support and this was also the only strategy showing effective results. Furthermore, the strategy of social access was understudied, and none of the interventions identified for older people applied multiple strategies to alleviate loneliness.

The effects of loneliness interventions on physical and mental health are understudied and results are so far inconclusive.<sup>52</sup> A successful trial has shown a significant improvement in perceived health and cognition and a decrease in the use of health services, which was associated with a reduction of costs and of mortality after two years.<sup>62,63</sup>

A few clinical trials have endeavoured to alleviate loneliness in **nursing homes**. A variety of strategies have been used. Internet training showed a positive trend and the use of animals and robots to stimulate social interaction achieved significant positive effects reducing loneliness.<sup>64-66</sup> From a cognitive behav-



joural therapy approach, a cognitive intervention helped older adults to increase or maintain the quality of their social networks.<sup>67</sup> However, lonely people long for human relationships and fostering social interactions among people should be a priority.<sup>48</sup> In this vein, the intervention proven to be successful in the community in Finland, called “Circle of friends”, has also been successfully applied in assisted living facilities and among people with dementia.<sup>68</sup> Likewise, as mentioned before, one trial based on individual reminiscence therapy was successful at alleviating loneliness in a nursing home in Taiwan.<sup>61</sup>

Last, it is important to state that although loneliness is highly influenced by context, the relevance of geographical contexts when intervening in loneliness is understudied.<sup>17</sup>

## 2.3. Social capital: an umbrella concept including social support and participation

### 2.3.1. Definitions

The polysemic and unclear use of the words “social”, “social intervention”, “social participation”, “social capital” and other related concepts in public health might partly explain the lack of evidence on the health effects of social interventions, and consequently, the lack of evidence-based practices.<sup>69,70</sup> Therefore, we define next the main terms related to our research work.

#### **Social:**

According to the Cambridge Dictionary, “social” has two meanings: “*relating to activities in which you meet and spend time with other people and that happen during the time when you are not working*” and “*relating to society and living together in an organized way*”.

The Dictionary of Epidemiology (6<sup>th</sup> ed.) uses the word “social” without providing any definition of it.<sup>71</sup>

#### **Social intervention:**

The Dictionary of Epidemiology (6<sup>th</sup> ed.) uses the term “social intervention” without providing any definition of it.<sup>71</sup>

There is an increased effort to build evidence on social interventions such as the work of the Campbell Collaboration, which is committed to promoting positive social change through the production of high quality systematic reviews of social interventions based on the effectiveness of social programmes, policies, and practices. It covers the fields of crime and justice, education, international development and social welfare (i.e., social care).

In public health research, the term “social intervention” is used to refer to a high variety of interventions among them:<sup>69,70,72,73</sup>

- **Social activities or social programmes**, which can be defined as a “*person’s involvement in activities providing interaction with others in society or the community*” and also understood as “*an organized, planned and usually ongoing effort designated to ameliorate a social problem or improve social conditions*”.<sup>74,75</sup>



- Interventions related with **social welfare** such as:
  - **Social care services** (e.g., home help).
  - **Financial** support (e.g., income supplementation).
  - **Housing** intervention (e.g., smoke alarms).
  - **Nursing** intervention (e.g., advice from the continence nurse).
  - **Medical** support (e.g., assistance in making appointments with health professionals).
  
- **Public policy and social organization** (e.g., promoting walking and cycling instead of using cars).<sup>72</sup>

In this thesis, we focus on the first group: social activities or social programmes.

### **Psychosocial interventions:**

These are defined as any intervention that emphasizes psychological or social factors rather than biological factors.<sup>76</sup> This definition includes psychological therapies and health education as well as interventions with a focus on social aspects, such as social support and networking. Certain interventions with a physiological component add a psychosocial component (e.g., exercise groups for older people).<sup>77</sup> One of the psychosocial interventions present in the care of people with cognitive decline is **remembrance**, which contains various forms of life reviewing and recalling past events in life.

### **Social network:**

It is the web of social relationships that surround an individual.<sup>78</sup>

### **Social support:**

There are diverse complementary definitions of social support.<sup>79</sup>

The *structural aspects* of social support correspond to network size while *functional aspects* inform about the type of support: emotional, informal or instrumental.

Social support can also be classified as *provided* or as *perceived* according to the subjective experience of those receiving it.

In addition, it can be transferred within existing social *networks* or by the *formal support system*. In the latter, *professional support and non-professional support* (e.g., volunteers) coexist.

In this thesis, we apply the definition of social support according to the theory of Cohen et al.: social support comprises “*the social resources that persons perceive to be available or that are actually provided to them by non-professionals in the context of both formal support groups and informal helping relationships*”.<sup>79</sup>

### **Social support interventions:**

Two classifications have been identified for social support interventions that complement each other.

The first one defines three types:<sup>80</sup>

- Group vs. individual interventions.
- Professionally led vs. peer-provided interventions.
- Interventions aimed at increasing the network size or the perceived support vs. interventions aimed at building social skills to facilitate building support.

The second one defines four types of interventions:<sup>81</sup>

- Peer support and befriending.
- Family support and social network interventions.
- Support groups.
- Remote support interventions.

### **Participation:**

The International Classification of Functioning, Disability and Health (ICF) defines participation as a person's performance in life situations, including the size of social networks, and satisfaction with social contacts.<sup>82</sup>

### **Social participation:**

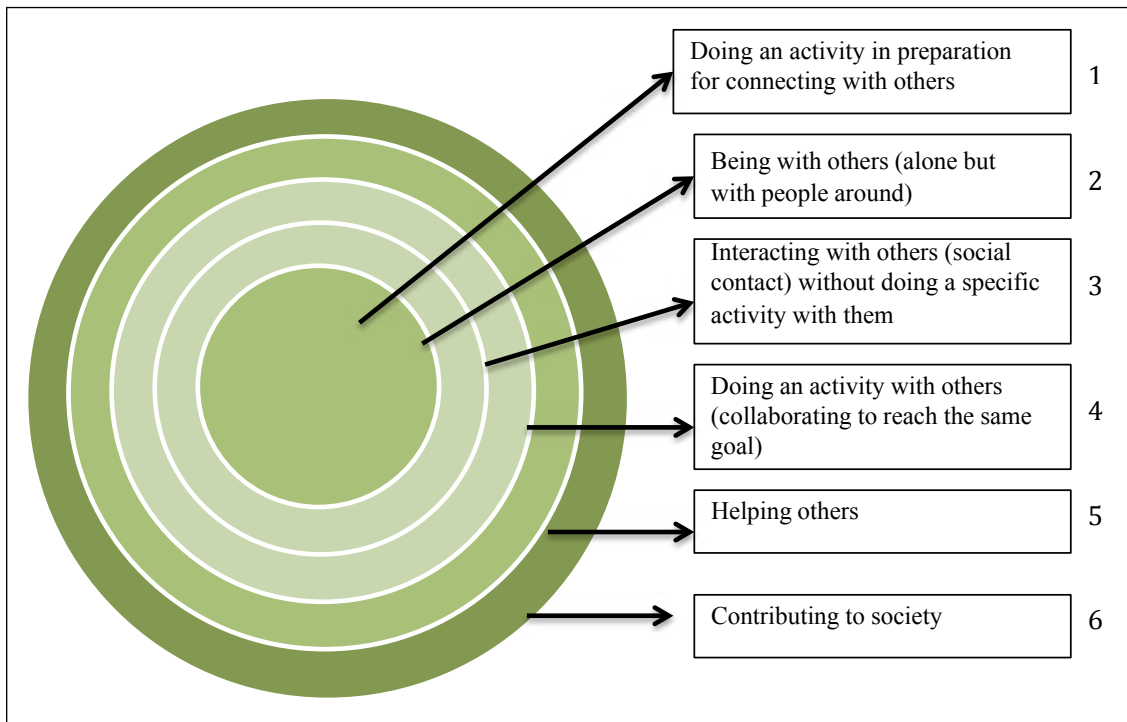
This term has a polysemic use. In this thesis, unless otherwise stated, we apply the definition from Levasseur et al. presented in the **taxonomy of social activities**, as a result of an inventory and analysis of definitions of social participation found in the ageing literature.<sup>74</sup> See figure 3.

The taxonomy is based on the individual's levels of involvement with others and with the goals of the activities. Accordingly, depending on the main goal of the social activities, six proximal to distal levels of involvement of the individual with others were identified:

- 1) Doing an activity in preparation for connecting with others.
- 2) Being with others.
- 3) Interacting with others without doing a specific activity with them.
- 4) Doing an activity with others.
- 5) Helping others.
- 6) Contributing to society.

These levels are presented as a continuum that helps to distinguish different but related terms as follows: participation includes all levels from 1 through to 6; social participation involves levels 3 to 6 and social engagement comprises levels 5 and 6.

Figure 3. Taxonomy of social activities as a result of an inventory and analysis of definitions of social participation.

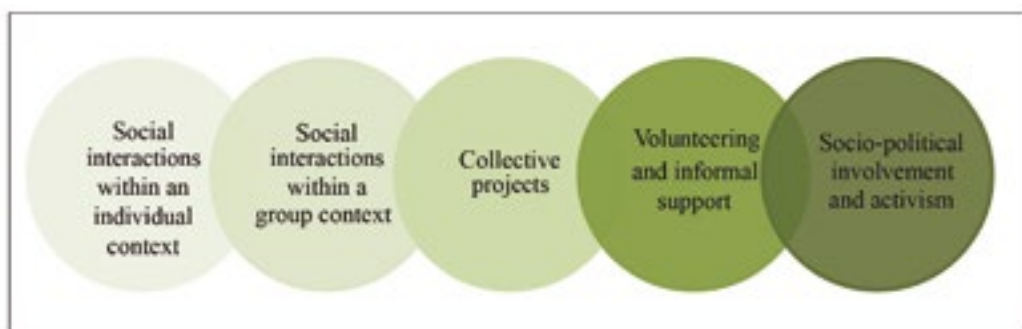


Reproduced from Levasseur et. at (2010)<sup>74</sup>

### Interventions promoting social participation:

A typology of social programmes used to promote the social participation of older people has been established according to a literature review.<sup>75</sup> See figure 4.

Figure 4. Typology of social programmes promoting the social participation of seniors.



Reproduced from Raymond et. at (2013)<sup>75</sup>

The categorisation is based on the following characteristics of the programmes: the type of social situations, whether interactions and relationships are enabling or fostering as a way to improve social participation, and which activities are proposed to reach goals.

The typology establishes five categories:

- (a) Social interaction in an individual context:
  - a. Community-based services programmes.
  - b. At-home context.
- (b) Social interaction in a group context:
  - a. Classes.
  - b. Adult day care and senior centres.
- (c) Collective projects:
  - a. Recreational, sports and socio-cultural activities.
  - b. Intergenerational activities.
- (d) Volunteering and informal support:
  - a. Organised volunteering.
- (e) Socio-political involvement and activism:
  - a. Global scope.
  - b. Intergenerational scope.

### **Social capital:**

Social capital has several definitions according to different approaches.<sup>83</sup>

According to the Dictionary of Epidemiology (6<sup>th</sup> ed.),<sup>71</sup> there are two definitions of social capital:

1. *The resources—for example, trust, norms, and the exercise of sanctions—available to members of social groups. The social group can take different forms, such as a work place, a voluntary organization, or a tightly-knit residential community. The salient feature of this approach is that social capital is conceptualized as a group attribute.*
2. *The resources—for example, social support, information channels, social credentials—that are embedded within an individual's social networks. In this approach, social capital is conceptualized as an individual attribute as well as a property of the collective.*

Moreover, the Dictionary adds that: “*Empirical research on social capital has stimulated a vigorous debate regarding its conceptualization and definition. Two points of contention are whether social capital ought to be considered as an individual or as a group attribute, and as social cohesion or as resources embedded in networks*”.

Below, we briefly describe the three main theoretical approaches to the conceptualization of social capital:

According to **Bourdieu**, social capital is defined as *‘the aggregate of the actual potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition’*.<sup>84</sup> Social capital is related to the size of the network and the volume of accumulated social capital of each individual. This approach shows how social capital can be used to produce or reproduce inequality, for instance, people gain access to powerful positions through the direct and indirect use of social connections.

The **social network approach** describes social capital as social networks with different values for different individuals.<sup>85</sup> For Coleman, social capital ‘*consists of some aspect of social structure, and facilitates certain actions of actors- whether persons or corporate actors-within the structure*’. Accordingly, social capital is productive and has an instrumental purpose; it is used to achieve particular ends that could not be achieved otherwise.

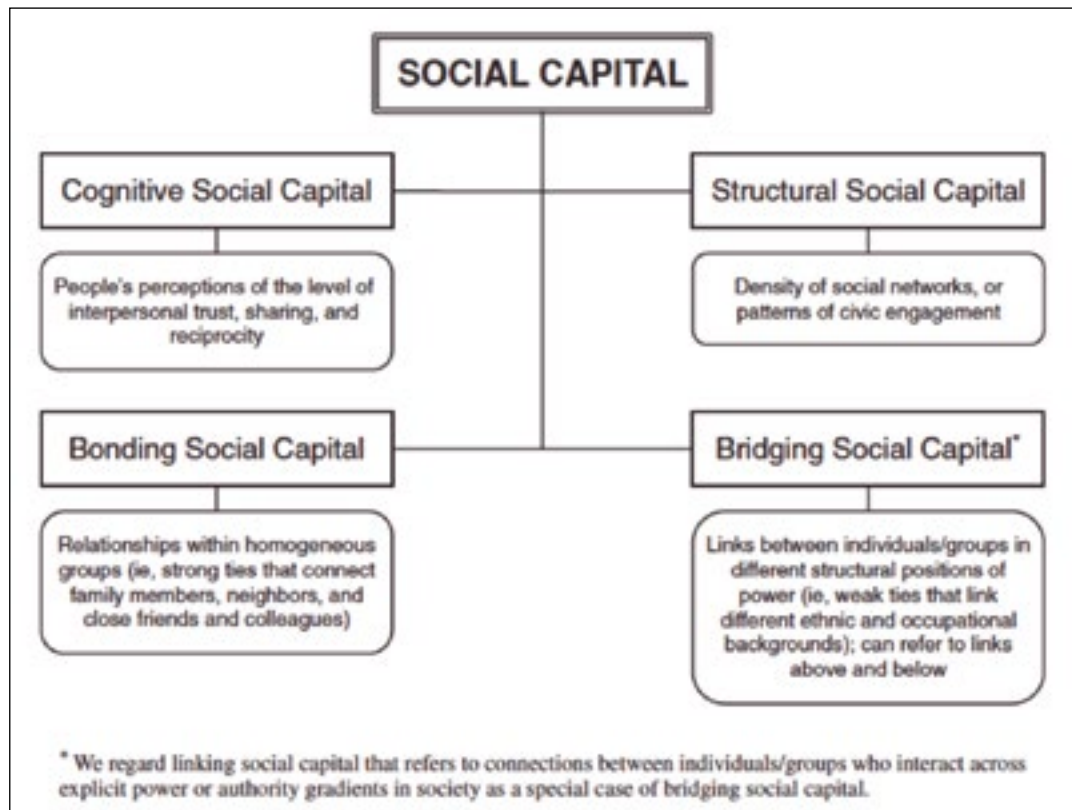
From the **social cohesion approach**, Putnam refers to social capital as a public good based on community activities. For Putnam, social capital refers to ‘*features of social organizations, such as networks, norms and trust that facilitate action and cooperation for mutual benefit*’.<sup>86,87</sup> This approach provides a much more positive perspective than Bourdieu’s. Accordingly, it frames social capital as a producer of “*civic engagement*” and also a broad societal measure of communal health. Within this approach, social capital is transformed from a resource possessed by individuals to an attribute of collectives and it focuses on norms and trust as producers of social capital and not only on individual social networks.

Putnam’s approach is the most widespread in health research and was adapted to the ageing process emphasizing the interaction between *individuals* at the individual (or micro) and the *collective* levels, comprising meso (neighbourhood) and macro (society) contexts.<sup>88,89</sup> Accordingly, **social capital** refers to an **umbrella concept**, in which social resources (social capital components) are grouped into dimensions: social networks, social contacts and participation belonging to the *structural* or objective aspects, and social support, sense of belonging and trust corresponding to the *cognitive* or subjective aspects. Moreover, depending on the *directions* of social ties, social capital is defined as bonding (intra-group ties between members sharing common characteristics), bridging (ties between heterogeneous groups) or linking (relationship between people who possess unequal wealth, power, and status).<sup>86,90,91</sup>

It is important to mention that social research is currently embedded in a controversial and appropriate debate about social capital: its definition, the appropriateness of the term, its theoretical approach, its dimensions (whether it is collective or also individual) and its role on health inequalities (whether it is a structural or intermediate determinant of health and whether it reduces or increases health inequalities).

In this thesis, we use “social capital” to refer to the operationalization of the term as an umbrella concept developed by Islam and latter by Nyqvist et al. following Putnam’s approach and adapting it to all ages.<sup>91</sup> See figure 5: Accordingly, we understand social capital as an individual and collective feature that embeds several social resources that are object of our research, such as social support and social participation. This framework allows having a comprehensive perspective on social capital and deconstructing the concept to gain clarity in the diversity of social resources embedded.<sup>92</sup>

Figure 5. Conceptual model of social capital.



Reproduced from Islam et. at (2006)<sup>91</sup>

### Social capital intervention:

In our work, we use the term “social capital intervention” to include all interventions designed to promote social capital as a generic concept or at least one of its components according to the definition of social capital as an umbrella concept that embeds structural and cognitive aspects and all directions of social ties (see above).

### 2.3.2. Social support, participation and health

Social support and participation are protective health factors. The first remarkable evidence on this was published in Science in 1988:<sup>93</sup>

*“The theory and evidence on social relationships and health increasingly approximate that available at the time of the U.S. Surgeon General’s 1964 report on smoking and health, with similar implications for future research and public policy”.*

*“Just as we discover the importance of social relationships for health, and see an increasing need for them, their prevalence and availability may be declining. Changes in other risk factors (for example, the decline of smoking) and improvements in medical technology are still producing overall improvements on health*

*and longevity, but the improvements might be even greater if the quantity and quality of social relationships were also improving”.*

Later, adequate social relationships have been associated with a 50% decrease in mortality.<sup>7</sup> The effects are comparable to other well-established protective health factors like smoking cessation and physical activity.<sup>7,93</sup> Likewise, poor social relationships are a risk factor for incident dementia with an effect comparable with other well-established risk factors for dementia, such as low educational level, physical inactivity, and late-life depression.<sup>94</sup> It is also noteworthy the established influence of social contacts with subjective well-being in ageing, specially their quality.<sup>95</sup>

Regarding participation, an increase in associational involvement and in informal socialising increases the likelihood of reporting better health in the adult population and in older age.<sup>96-98</sup> Both social relationships and social participation have protective effects on late life disability.<sup>99</sup>

From a psychological perspective, two not mutually exclusive processes explain how social support may affect health and well-being: the **stress buffering model** and the **main effects model**.<sup>100</sup> The first model emphasizes the role of social support buffering the negative consequences of acute and chronic stressors (e.g., social support buffers the stressful experience of caring for a person with dementia).

The second model describes the overall protective health effects of social integration (i.e., embeddedness in a social network), by influencing health-related behaviours, social engagement (thus defining and reinforcing social and meaningful roles, identity and sense of belonging), exchange of social support (emotional, cognitive, informational and instrumental) and access to material resources (e.g., peer support can enhance initiating physical activity).<sup>78,101</sup>

### 2.3.3. Social capital and health

Several systematic reviews explore the relationship between social capital and health, analysing its cognitive and structural dimensions and its individual and collective levels.<sup>91</sup> Individual cognitive social capital seems to be protective against developing common mental disorders while evidence on collective cognitive social capital is positive but limited.<sup>102</sup> However, structural social capital was not associated with mental health at either the individual or collective level. Among older adults, a protective effect of social capital on mental wellbeing has been shown.<sup>89</sup>

A further systematic review analysing the specific effects of social capital components has identified that engaging in social participation and reporting frequent contact with friends and family explain a decrease in mortality.<sup>103</sup>

**Context** is critical in social capital and its relationship with health,<sup>88</sup> since personal networks are embedded in a broader social structure.<sup>104</sup> Thus, macro-social processes are dynamically linked with cognitive, emotional, behavioural, and biological pathways at individual level and explain how social capital components affect health.<sup>78</sup> Data on micro and macro levels of context show differentiated influences on individual health.<sup>105</sup> Besides, the influence of social networks on well-being seems to differ across societies and welfare states.<sup>35,106</sup> While collectivist societies emphasize interdependence between



humans, individualistic societies do not. At a welfare state level, differences across cultures and welfare systems (e.g., social-democratic, liberal, Mediterranean, conservative-corporatist, post-socialist) play major roles in social capital.<sup>88,91</sup> Thus, the existing social capital within a community influences the health effectiveness of an intervention.<sup>107</sup> However, the implications of context on how to build and enhance social capital are largely unknown.

At least three mechanisms have been put forward to explain why social capital positively influences individual health:<sup>108,109</sup>

1. **Improved access to health relevant information** through an individual's social interaction (friends and relatives, participation in social events, and membership in formal and informal organizations).
2. **Informal health care and support available and provided in case of illness.**
3. **Well-organized and connected groups are more effective** at coordinating people's efforts to lobby public authorities with a view to obtaining potentially health-promoting public goods, for example, health infrastructure, traffic regulations, sport facilities and green space areas.

#### 2.3.4. Social capital interventions in health research

In research, promoting social support and/or participation has been studied to benefit a variety of populations with specific conditions. For instance, social support interventions have been applied to people suffering from diseases like cancer and diabetes and being the caregiver of people with dementia.<sup>81,110,111</sup> Results are partially successful and highlight the lack of robust research.

The health effects of volunteering as a form of social engagement have been analysed. Despite the significant benefits on mortality and mental health stemming from cohort studies, evidence was lacking from experimental designs.<sup>112</sup>

Interventions aimed at alleviating loneliness among older people often promote social interaction and support between peers, provide supportive relationships with volunteers or encourage social participation by enhancing social activation or participation in social activities.<sup>51</sup> Likewise, as mentioned before, trials increasing social support are the most widely applied strategy among older people to tackle loneliness.<sup>54</sup>

Systematic reviews on interventions promoting participation among older adults have addressed those with low vision through occupational therapy and those in retirement through promoting meaningful social roles.<sup>113,114</sup> In the first case, problem-solving showed the strongest evidence. Regarding retirement, few and diverse trials were identified but promising effects on a wide range of health outcomes were shown in interventions providing explicit roles and using supportive group structures.

In a broader sense, psychosocial interventions in older adults have been reviewed regarding their effects on depressive symptoms and a small but statistically significant effect was found.<sup>77</sup> In the mentioned review, reminiscence was not significantly effective at reducing depression.



It is also to be remarked that social capital interventions, comprising social support and social participation interventions, usually contain several interacting components. Therefore, they are complex interventions and, consequently, pose theoretical and methodological challenges regarding impact mechanisms and implementation among others.<sup>115</sup> Moreover, despite the relevance placed on the promotion of social relationships and participation in ageing to increase health and well-being according to current evidence and policy, the processes that are involved to achieve successful results remain unknown.

### 2.3.5. Social capital interventions in health care practice and policy

Despite the context of few evidence, health care systems comprise already several practices based on social resources at personal or community level, like group-based interventions on health promotion or peer support and social prescribing. These practices, more or less implemented in routine care or emerging as pilots in different contexts, are often not informed by current evidence and seldom grounded on theoretical frameworks.

Indeed, evidence is scarce whereas **theoretical, conceptual and policy frameworks** have already established the basis to move into action. In the first place, the main definitions of health involve a social dimension such as social well-being.<sup>71</sup> In the second place, the **biopsychosocial model of health** (proposed in 1977) criticised the reductionism of the dominant biomedical model, stated that health needs were not being met and that biomedical research was not having a sufficient impact in human terms.<sup>116</sup> It advocated for an inclusive scientific medical model. In the third place, according to the WHO Ottawa Charter (1986), **health promotion** is the process of enabling people to increase control over, and to improve their health.<sup>1</sup> Likewise, **salutogenesis** implies to strengthen people's potential to create good health as a tool for a satisfactory and productive life.<sup>6</sup> Thus, the model of salutogenesis proposes a health promotion approach to work with strengths and promote well-being. According to the salutogenic approach to ageing, despite the physical and biological decline with age, the potential of growth regarding psychological and social salutary factors is clear.<sup>117</sup>

In the fourth place, research on **health inequalities** has pointed out the relevance to focus on social determinants of health, since they explain the majority of poor and unequal health<sup>1</sup> and increasing efforts are being made to tackle health inequalities from a public health perspective.<sup>70</sup> In this vein, it is important to highlight the relevance of **community-oriented health care** and **community actions for health**, understood as collective efforts by communities which are directed towards increasing community control over the determinants of health, and thereby improving health.<sup>118,119</sup>

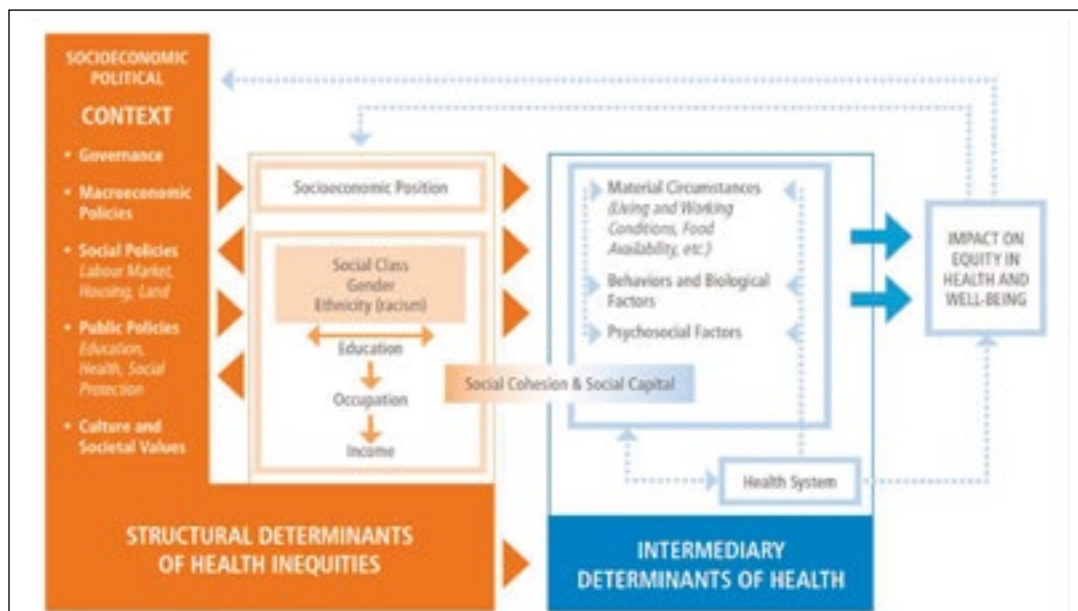
Furthermore, the Task Force on Community Preventive Services, recommends **social support health behaviour interventions**, especially peer support, to promote healthier lifestyles and better self-management of chronic illnesses.<sup>120</sup>

### 2.3.6. Social capital, social determinants of health and health inequalities

As previously stated, social determinants of health explain the majority of poor health.<sup>1</sup> Solar and Irwin developed a conceptual framework for action on the social determinants of health on behalf of the WHO.<sup>121</sup> Accordingly, social support is included in the psychosocial factors that belong to the social intermediary determinants, i.e., mediating the health effects of the structural social determinants of health inequities and thus partly explaining long-term patterns of inequality. The authors discuss the existing controversies surrounding the definition of social capital and its importance in health inequalities. Conclusively, they consider social capital as a different determinant from social support and as a social determinant cross-cutting the structural and intermediary determinants, with features linked to both.<sup>83,121</sup> See figure 6.

It is still unclear how social capital, socioeconomic inequalities and health are related. The **buffer effect hypothesis** suggests that social capital has higher effects on health among those people living in low socio-economic conditions. On the contrary, the **dependency hypothesis** points out a higher effect of social capital on health only among those with high socioeconomic conditions, in line with Bourdieu's approach. The buffer effect hypothesis would mean that interventions based on social capital might reduce health inequalities, while the dependency hypothesis points out the risk of increasing inequalities. Currently, there is some evidence for the coexistence of both a buffer effect and a dependency effect of social capital on socioeconomic inequalities in health.<sup>122</sup>

Figure 6. Social determinants of health conceptual framework.



Reproduced from Solar and Irwin.<sup>121</sup>

### 2.3.7. The context of Spain in social capital interventions from a health perspective

As already mentioned, context is highly relevant in social capital. Therefore, context-specific research and evaluation are required. In the Spanish health care system, social capital practices are present, although mostly they are not theoretically based, systematically applied, or rigorously evaluated. Support groups are widespread, especially those targeting caregivers to reduce their stressful experience and among patients' organizations. Some Spanish experiences of social support have been published, e.g., groups for older people.<sup>123</sup>

As recommended by the Task Force on Community Preventive Services,<sup>124</sup> social support health behaviour interventions, especially peer support, are increasingly implemented to promote healthier lifestyles and better self-management of chronic illnesses.<sup>120,124,125</sup> In our context, there is the *Programa Pacient Expert Catalunya*<sup>®</sup> and a published experience in social interaction and physical exercise targeting women referred by general practitioners.<sup>126</sup>

Social participation practices are mainly considered as leisure, cultural and political activities not linked to health. However, in recent years, **social prescribing** has gained attention as a referral scheme that links patients from primary health care with non-medical sources of support like mutual support, befriending and participation opportunities in the community (e.g., arts and creativity, volunteering...).<sup>127</sup> It is promoted in Catalonia by the Department of Health through the PINSAP (Pla Interdepartamental de Salut Pública) and in Asturias by the *Observatorio de Salud*. The emerging programme COMSalut is aimed at enhancing the task of primary health care in **community health** and also emphasizes the involvement of health community assets. It is also important to highlight the **community action** model implemented in deprived areas of Barcelona lead by the Agència de Salut Pública de Barcelona in the frame of the programme "*Health in the Neighbourhoods*" to reduce health inequalities, promoted by the Department of Health and the municipalities.<sup>128</sup> Moreover, the currently ongoing integrated care plan in Catalonia from the Department of Health, the Pla Interdepartamental d'Atenció i Interacció Social i Sanitària (PIAISS) is planning and testing the coordination of agents and institutions within health and social care in the frame of the **integrated care model**.<sup>129</sup> In all these publicly funded programmes, ageing is a major topic.

Last, it is important to highlight that 39 Spanish cities, including Barcelona, have joined the **WHO Global Network of Age-friendly Cities and Communities**.<sup>130</sup> This initiative guides the definition and implementation of action plans to engage governments and the overall society in creating inclusive and accessible urban environments, while considering the diversity of cultural and socio-economic contexts for a better ageing from a lifecycle perspective.

### 2.3.8. Harmful effects of social capital

Social capital, alongside its positive health effects and unclear role buffering or reinforcing health inequalities, also generates adverse events. However, the harmful effects of social capital, and the interventions promoting it, are understudied and underestimated, probably because the emphasis has been put on their positive effects.<sup>104</sup> In other words, network involvement has its costs. For instance, responding to the needs of social network members can be stressful, especially for women

with low socioeconomic resources.<sup>131,132</sup> Likewise, the phenomenon “support gap” has been described when the support given and received in dyadic relationships is highly unequal between women and men, resulting in demoralization and depression.<sup>131,132</sup> Moreover, receiving social support from the extended family can generate a sense of indebtedness and obligation, i.e., a need to show conformity and follow received the advices received.<sup>133</sup> In older age, unbalanced friendship may cause strain and tension linked to the disruption of expectations about how friends should be.<sup>134</sup> Moreover, negative perceptions of social networks might be expressed as loneliness.<sup>135</sup>

Nevertheless, it remains unclear whether and how interventions based on social capital or its components reproduce the mentioned adverse effects.

## 2.4. Justification for this research

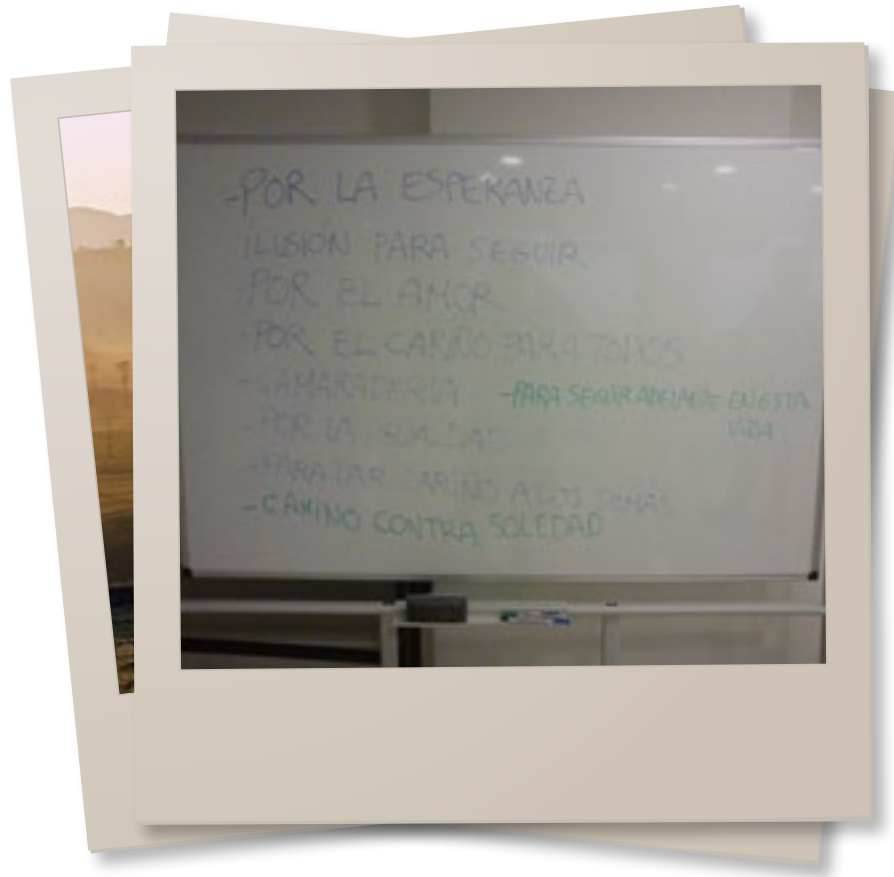
After the review of the literature, we conclude that:

- The global ageing trend is a success but also a challenge to face. Public health, health care systems and long-term care models require urgent actions to respond to this challenge.
- Life expectancy in Spain is among the highest in the European Union; likewise, the prevalence of loneliness is especially high in Southern European countries.
- According to observational studies, loneliness is a risk factor for health while social support and social participation are protective factors. Both community-dwelling older adults and those living in long-term care are at increased risk of loneliness.
- Diverse definitions of social capital coexist and one of them understands it as an umbrella concept including social support and participation and other related social resources.
- Loneliness can be tackled by interventions promoting social capital, i.e., social support and participation, especially those that are group-based, theory-driven, but it is not clear yet which theoretical framework informs better interventions.
- The promotion of social capital has been applied to a wide variety of populations with specific conditions, but an evidence base of the health effects of this type of interventions among older people is lacking. This might partially explain the lack of advances in practices based on evidence in health and social care systems addressing social resources as a relevant protective health factor.
- Theoretical, conceptual and policy frameworks establish the basis to move into action: the biopsychosocial health model, health promotion, salutogenesis, social determinants of health and health inequalities and social support health behaviour interventions.
- In Spain, there are established and emerging practices in the health care system applying social capital components.
- Social capital also produces adverse events, but it remains unclear whether and how interventions based on social capital or its components cause adverse events.

Therefore, there is a need to:

- Overview existing evidence on whether interventions on social capital (or its components) have a health impact on older people, including loneliness and their adverse events.
- Systematize current theoretical and empirical knowledge on interventions based on social capital (or its components) to improve health among older people in order to guide further research, practice and policy.
- Define new interventions on loneliness to build an evidence base:
  - In Spain, as a country with a high prevalence of loneliness, a lack of empirical research on it and emerging practices in this area.
  - Taking into account contextual specificities.
  - Applying current evidence and with interventions designs driven by theory.
  - Checking their feasibility and exploring the intervention processes and effects to prepare for clinical trials to test efficiency.
  - Targeting community-dwelling older adults and those living in long-term care.

### 3. Aims



I al participar, tu no  
et sentis sola amb allò  
que estas vivint.

**By participating, you don't feel lonely,  
with everything you are experiencing.**

### 3. Aims

#### General objectives

1. To conduct a systematic review of current evidence on interventions that promote social capital among older people to improve their health.
2. To design, implement and evaluate interventions in our context that promote social capital to alleviate loneliness among community-dwelling older people and among older people living in long-term care.

#### Specific objectives

1. To assess the impact on health outcomes and use of health-related resources of interventions that promote social capital or its components among older people.
2. To develop a taxonomy (classification system) grounded on social sciences theories and current epidemiological evidence to characterize social capital interventions according to health-related goals, social capital-related contents, processes and contexts.
3. To explore the feasibility of an intervention in mixed rural–urban and urban areas of diverse socioeconomic levels and to assess the immediate and long-term effects of this intervention among older participants on: (i) loneliness; (ii) structural and cognitive aspects of individual social capital (i.e. participation and social support); (iii) perceived health, health-related quality of life, depressive symptoms and the use of anxiolytics and antidepressants; and (iv) the use of health services.
4. To explore participants' experiences on loneliness and social participation prior to the intervention; describe whether and how the intervention had an effect on loneliness, social participation and support and health; describe whether and how participants' health and the context influenced these processes.
5. To develop a conceptual model for practice, drawing upon the football reminiscence implementation studies undertaken within Spain and Scotland, and enriched by theoretical frameworks.

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## ARTICLES COMPILED IN THE THESIS AND THEIR RELATION WITH THE SPECIFIC OBJECTIVES:

### ARTICLE 1:

Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Solà, I., Monteserín, R. (2016). Social capital interventions targeting older people and their impact on health: a systematic review. *Journal of Epidemiology & Community Health*, 1–10. <https://doi.org/10.1136/jech-2016-208131> PUBLISHED, **IMPACT FACTOR (2015): 3.865**

#### *Responds to the specific objective 1:*

To assess the impact on health outcomes and use of health-related resources of interventions that promote social capital or its components among older people.

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### ARTICLE 2:

Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Monteserín, R. A taxonomy proposal (SOCAI) to guide the use of social capital in interventions aimed at improving health among older people. (ARTICLE IN SUBMISSION PROCESS, TO BE SEEN IN THE ANNEX)

#### *Responds to the specific objective 2:*

To develop a taxonomy (classification system) grounded on social sciences theories and current epidemiological evidence to characterize social capital-based interventions according to health-related goals, social capital-related contents, processes and contexts.

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### ARTICLE 3:

Coll-Planas, L., Del Valle Gómez, G., Bonilla, P., Masat, T., Puig, T., & Monteserín, R. 2017 Jan;25(1):145-157. Promoting social capital to alleviate loneliness and improve health among older people in Spain. *Health & Social Care in the Community*. <https://doi.org/10.1111/hsc.12284> PUBLISHED, **IMPACT FACTOR (2015): 1.557**

#### *Responds to the specific objective 3:*

To explore the feasibility of an intervention in mixed rural–urban and urban areas of diverse socio-economic levels and to assess the immediate and long-term effects of this intervention among older participants on: (i) loneliness; (ii) structural and cognitive aspects of individual social capital (i.e. participation and social support); (iii) perceived health, health-related quality of life, depressive symptoms and the use of anxiolytics and antidepressants; and (iv) the use of health services.

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#### ARTICLE 4:

Coll-Planas L, Rodríguez L, Pons-Vigués M, Puig T, Nyqvist F, Montserín R. “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care. (ARTICLE IN SUBMISSION PROCESS, TO BE SEEN IN THE ANNEX)

##### *Responds to the specific objective 4:*

To explore participants’ experiences on loneliness and social participation prior to the intervention; describe whether and how the intervention had an effect on loneliness, social participation and support and health; describe whether and how participants’ health and the context influenced these processes.

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#### ARTICLE 5:

Coll-Planas L, Watchman K, Doménech S, McGillivray D, O’Donnell H, Tolson D. Developing evidence for football (soccer) reminiscence interventions within long-term care: a co-operative approach applied in Scotland and Spain. JAMDA ; 18 (4) : 355-360. (2017) <http://dx.doi.org/10.1016/j.jamda.2017.01.013> PUBLISHED, **IMPACT FACTOR (2015): 6.616**

##### *Responds to the specific objective 5:*

To develop a conceptual model for practice, drawing upon the football reminiscence implementation studies undertaken within Spain and Scotland, and enriched by theoretical frameworks

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## 4. Methods



*Todo lo que se hacía allí era  
nuevo para mí*

**Everything we did there was new to me.**

## 4. Methods

The methods of the thesis are those of each publication.

### **Article n.1: Social capital interventions targeting older people and their impact on health: a systematic review**

To conduct the review we developed a protocol that was registered in PROSPERO (ref. CRD42014015362). We identified sources of complexity and built a logic model to support the conceptualization outlining that social capital-based interventions might successfully improve long-term outcomes by promoting physiological, psychological, behavioural and instrumental changes.<sup>136-140</sup> We reported the results of the review according to the PRISMA statement.<sup>141</sup>

#### *Eligibility criteria*

- Randomized trials.
- Studies exclusively targeting participants over the age of 60 (according to the United Nations definition of old age) or, in studies in which the age range begins under 60, if the mean age is notably over 60 (i.e. 65 or over).<sup>142</sup>
- Interventions explicitly aimed at and/or designed for improving social capital or one of its components.<sup>88</sup>
  - Studies were excluded if they only included social capital as a secondary outcome measures.
  - Professionals support was not considered social support and thus neither social capital.<sup>101</sup>
  - In case of multicomponent interventions, studies had to be exclusively or predominantly based on social capital.
  - Tailored interventions were included if all participants received the social capital component, despite this being in different ways.
- Reporting effects on at least one of the following health outcomes: general, physical and mental health, use of health resources, nursing home placement and mortality.
- Comparison groups should not contain any social capital component.
- Studies were included regardless of morbidity, disability and setting (community, nursing home or hospital) and the intervention could be applied at individual or community level, in any delivery mode (e.g., individual or group-based), intensity, frequency, duration and length of follow-up.

#### *Data sources and search strategy*

An exhaustive search was conducted on articles published (from January 1980 to July 2015) in: MEDLINE, EMBASE, CINAHL, PsycINFO, the Cochrane Central Register of Controlled Trials and the Web of Science.

The search strategy was defined to find articles covering controlled trials according to an adaptation of the Cochrane MEDLINE filter combined with the target population and the defined intervention area. No outcomes were pre-specified in the search terms. We controlled vocabulary related with the population. Social capital was searched and included also throughout its different components since the wording 'social capital' might not always be used. Initially, the search strategy applied by Nyqvist et al. 2013 was taken as basis to build the search on social capital terminology.<sup>92</sup> Afterwards, trials identified when piloting the strategy were used to improve the search adding terms used a synonyms or in strong relationship with social capital components, e.g., befriending. No language restrictions were applied.

The final search strategy is available in annex 9.2.1 of the published paper.

In addition, reference lists of study protocols, systematic reviews and included studies were checked for relevant material, and we contacted first authors from included studies as well.

### *Study selection*

Titles and/or abstracts of studies retrieved from the search were screened independently by two review authors (LC and RM) to check eligibility criteria. The full text of potentially eligible studies was retrieved and independently assessed for their final inclusion by the same review authors (LC and RM). Discrepancies were resolved by consensus or by consulting with a third author (FN).

Social capital interventions that were multicomponent, were decomposed by two researchers (LC and FN) to its intervention categories and only included if social capital was the exclusive or the main intervention category.

### *Data extraction and synthesis*

We extracted data from included trials regarding design, population, intervention, comparison, outcomes of interest and other relevant issues (e.g. context, setting).

We described participants according to the disadvantage categories from the PROGRESS PLUS framework of the Equity Checklist for Systematic Review authors, considering that social capital belongs to the social determinants of health and is highly interrelated with the rest of the determinants. The Equity Checklist includes: Place of residence, Race/ethnicity/culture/language, Occupation, Gender/sex, Religion, Education, Socioeconomic status and Social capital, PLUS age, sexual orientation, and disability.<sup>143,144</sup>

We classified the interventions according to the social capital dimensions (structural and cognitive), to the directions of the social relationships (bonding, bridging and linking) and as promoting new relationships and/or enhancing existing ones. We extracted data considering the items mentioned in the TIDieR reporting guidelines to characterize the programmes as a complex intervention.<sup>145</sup>

We adapted the Cochrane risk of bias tool to assess the internal validity from studies.<sup>146</sup> We judged random sequence generation, allocation concealment, blinding and incomplete outcome data as "high, low or unclear risk of bias". We reported the summary judgement on risk of bias for each study,

according to three domains (random sequence generation, allocation concealment, and incomplete outcome data) rated as biased: “high risk of bias” when at least one domain was determined to be biased, “low risk of bias” if all domains were rated as unbiased, and unclear when at least one item was not reported in detail to make judgements.

Reported impacts on health outcomes were documented, as well as adverse events. We contacted study authors for missing data in the trial reports.

As meta-analysis was not applicable due to the heterogeneity in the included trials in terms of interventions, contexts, health outcomes and participants, we conducted a narrative synthesis based on described effects on health outcomes.<sup>138,147</sup> To synthesize the findings from included trials, we used vote-counting and the standardised decision rules and statements about effectiveness proposed by Canadian Agency for Drugs and Technologies in Health (CADTH) in the Rx for Change database.<sup>148,149</sup> Accordingly, outcomes reported in four or less studies were considered as difficult to make conclusions on. Whereas outcomes reported by at least five studies were considered as sufficiently reported. For each outcome, we counted the number of trials according to the reported direction of effect: significant favouring social capital, significant favouring control, non-significant differences. Analyses were reported as the number of studies favouring the social capital intervention out of the total number of studies reporting the same outcome.

We determined the impact of the interventions according the following decision rules to assess the effectiveness of the intervention in each outcome:<sup>148,149</sup>

- No effect (any included study favoured the intervention).
- Generally ineffective (up to one third of studies favoured the intervention).
- Mixed effects (one to two thirds of studies favoured the intervention).
- Generally effective (more than two thirds of studies showed a favourable effect).

We completed the summary of findings with a summary judgement on risk of bias and the accumulated sample size of trials in order to weight the results.

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## **Article n.2: A taxonomy proposal (SOCAI) to guide the use of social capital in interventions aimed at improving health among older people.**

As a paper in submission process, its methods are to be seen in the annex.

### **Article n.3: Promoting social capital to alleviate loneliness and improve health among older people in Spain.**

This section describes the study and intervention design, implementation and quantitative evaluation of the intervention “CAMINS: DE LA SOLITUD A LA PARTICIPACIÓ” (*PATHWAYS: FROM LONELINESS TO PARTICIPATION*) conducted in the community targeting lonely older adults.

The methods of the qualitative evaluation of this programme belong to article n.4. and are to be seen in the annex.

#### **Overall study design**

This was a multi-centred and non-controlled exploratory complex intervention study with a pre-post design, based on a community and psychosocial intervention with a two-year follow-up. It was conceived as a first step prior to a definitive trial. Quantitative and qualitative methodologies were applied with a complementary purpose.

#### **Study population involved in the programme:**

Three primary health care centres in two municipalities in Catalonia (Spain) were selected by convenience to implement the intervention in a mixed rural-urban context with a medium socio-economic level (zone A) and an urban context with a low and medium socio-economic level (zone B and C, respectively). The mixed rural-urban area had 16,000 inhabitants, while the urban area had 1,600,000.

The participants’ recruitment strategy for the group-based programme was pragmatic. Professionals could refer patients by contacting them actively or by asking their patients about loneliness during routine visits. All professionals, i.e., general practitioners, nurses and social workers, were encouraged to use the programme as an opportunity to refer patients suffering from loneliness, as they usually refer patients to specialists or specific interventions. Participants were also self-referred through advertising in the centres.

A nurse ensured that those who volunteered to participate met the following eligibility criteria:

- i) Community-dwelling aged equal or over 60.
- ii) Feeling lonely “sometimes, often or always” in response to the question “Do you feel lonely?”.
- iii) Does not participate in regular social activities (once a week).
- iv) Able to walk to the centre independently.
- v) No cognitive decline.
- vi) Able to participate in a group dynamic.

#### **Intervention design**

The intervention consisted of a coordinated action and a group-based programme. The coordinated action was aimed at building and strengthening the network between primary health care centres,

senior centres and other community assets in the neighbourhood where older people could participate in activities. Moreover, older people active in local senior centres were recruited and trained as volunteers. Their goal as gatekeepers was to introduce lonely older people from the programme to community assets.

The group-based programme was conducted from January to June 2012 applying an intervention guide.<sup>150</sup> See the intervention guide in the annex 9.2.2. The group met for 1.5 hours a week for 15 weeks.

The **overall intervention framework** was based on the social cohesion approach of social capital theory emphasising the interaction between the older persons and their social environment.<sup>151</sup> Specifically the social capital operationalization from Nyqvist was used to develop a new complex loneliness intervention considering the structural, cognitive, bonding, bridging and linking elements related to loneliness at individual and neighbourhood level.<sup>88</sup> The study assumes that social capital is acquired through involvement in social activities and that structural and cognitive aspects of social capital (i.e. social participation and social support) reinforce each other. Moreover, strategies based on a behaviour change model and care coordination were integrated. Specifically, the programme was initially theory-driven based on the social cognitive theory, complemented by the socio-ecological model, from an empowerment perspective.<sup>27,152–154</sup> The model for our group-based programme was designed considering previous effective models.<sup>62,155</sup> It was further developed with a practical orientation with professionals from the centres.

#### **Measurements and data collection techniques:**

Participant socio-demographic data, chronic morbidity and prescribed medication were recorded for descriptive purposes. Impact evaluation comprised the baseline and follow-up assessment, which consisted of validated interviewer-administered questionnaires regarding psychosocial aspects and health status.

Loneliness intensity was the primary outcome domain assessed by the 11-item De Jong Gierveld Loneliness Scale.<sup>19</sup> Frequency of loneliness was assessed with a single item self-rating scale. The impact on social support, as a cognitive aspect of individual social capital, was assessed using the Social Resources Inventory in Older Adults.<sup>156</sup> Likewise, the impact on social participation, as a structural aspect of individual social capital, was assessed using the Subjective Social Participation Index.<sup>157</sup> Further outcome measures were: self-perceived health and health-related quality of life (12-Item Short-Form Health Survey);<sup>158</sup> depressive symptomatology (Geriatric Depression Scale-5  $\geq$  2);<sup>159</sup> and current use of anxiolytics and antidepressants. The use of health services was retrieved from computerised medical records and included consultations with a general practitioner, visits to nurses and social workers in primary care, visits to the emergency department and hospital admissions 12 months prior to the programme, just after it and six months later. Participants were also asked about the number of social contacts established within the group and the number and type of new activities in which they had become regularly engaged.

Two years after finishing the intervention, long-term effects were assessed through telephone interviews, employing the same questionnaire. In addition, using a semi-structured questionnaire, partici-

pants were asked about the number of social contacts maintained within the group and how they had stayed in contact, the number and type of activities in which they continued to be engaged and why they had continued them.

The study protocol followed the principles of the Declaration of Helsinki (World Medical Association). The ethical committees from UAB and IDIAP approved the protocol. Participants gave their informed consent. Anonymity, confidentiality and protection of stored data were guaranteed.

### **Statistical analysis:**

According to recommendations for exploratory studies, a sample of between 20-25 was estimated as adequate.<sup>160</sup> Considering the goal of piloting the intervention in three different areas, three groups were planned. Accounting for a drop-out rate of 20%, the estimated initial recruitment was 15 persons per group to achieve a final sample of 36 participants, 12 per group.

To assess pre-post changes, the totality of participants was compared before and after the intervention regarding the impact indicators. Ordinal and numeric variables with a normal distribution (Kolmogorov-Smirnov test with  $p \geq 0.05$ ) were analysed with a t-test to compare the means in paired samples (repeated measures). In variables without a normal distribution, the Wilcoxon signed-rank test was applied. String variables were assessed using McNemar's test. A one-way ANOVA with repeated measures was applied to assess differences between baseline, after the intervention and two years later. The level of significance was 0.05. Analyses were performed with the statistical programme IBM SPSS Statistics®<sup>21</sup>.

The funding source had no role in the study.

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### **Article n.4: “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.**

As a paper in submission process, its methods are to be seen in the annex.



## **Article n.5: Developing evidence for football (soccer) reminiscence interventions within long-term care: a co-operative approach applied in Scotland and Spain.**

This section describes the design, implementation and evaluation of the football-based reminiscence intervention conducted in long-term care settings in Spain.

### **Overall study design**

Exploratory study with a multicentric pre-post design. Evaluation with a quantitative and qualitative methodology.

The project was delivered between 2013 and 2015 in Spain and Scotland, UK. It took a co-operative-inquiry approach and enabled sequential engagement in different study sites. Research teams based within Scotland and Spain worked co-operatively to share ideas, developed project methods, and compared experiences and findings related to introducing football reminiscence within a total of four different settings, one in Scotland and three in Spain.

This thesis is based on the Spanish projects and therefore only those are reported here.

### **Study population involved in the programme:**

#### *Study Sites*

The football-based reminiscence program was conducted in three centres for patients with dementia in three different cities in Spain (Barcelona, Valencia, Bilbao). Specifically, in a Day Hospital in Barcelona and in two nursing homes in Valencia and Bilbao.

#### *Inclusion criteria*

- Participants had to be aged 65 years and older.
- Having a mild cognitive impairment or mild to moderate dementia (Global Deterioration Scale 3, 4, or 5).<sup>161</sup>
- Interested in football.
- A maximum number of 10 older adults per group was sought in each intervention site.

#### *Exclusion criteria*

- Participants who did not understand Spanish.
- Participants not able to participate in a group dynamic (as a result of severe behavioral, sensory, and/or mental disorders).
- Participants with terminal illness.

### **Intervention**

Drawing on the previous research conducted in Scotland,<sup>162</sup> a template for guidance in the delivery of community-based structured football reminiscence called "*Principles and Practice Guide for Devel-*

oping *Football-Focused Reminiscence With People With Dementia*” (See the annex 9.2.3) had been developed. This was used as a starting point for the project teams working in Spain and Scotland to adapt for local implementation and evaluation within the respective study sites. Accordingly and with the support of the University of West Scotland, an **intervention guide** for professionals and volunteers was prepared and professionals and volunteers were trained.

Remarkably, the Spanish Federation of Associations of Former Football Players (FEAFV) was involved from the onset in the design and delivery of the intervention providing their football experience and their contacts with the local former players associations.

A 12-week structured program comprising 11 weekly, 2-hour football reminiscence sessions was delivered in the 3 settings. The program was tailored to the specificities of each of the 3 intervention sites. Sessions were composed of reminiscence activities.

Reminiscence groups in each intervention site consisted of:

1. **Participants:** Older people attended in the corresponding long-term care settings who fulfilled the above mentioned eligibility criteria.
2. **Healthy former players** from the local associations of former football players linked to the FEAFV\* who acted as volunteers. Their task was providing their football experience and expertise during the sessions.
3. **Former players with dementia** belonging to the local associations of former football players linked to the FEAFV\* who benefit from the intervention while contributing with their personal football history to the group (present in Valencia and Bilbao).
4. Two **professionals** from the long-term care center: a psychologist who facilitated the sessions with experience of facilitating groups and trained in football-based reminiscence; another health professional from the center, who observed the sessions and supported participants when needed.

*\*The local associations of former football players linked to the FEAFV involved were: Agrupació Barça Veterans (Barcelona), Asociación de Futbolistas Valencia CF (Valencia), and Asociación Exjugadores Athletic Club de Bilbao (Bilbao).*

The **facilitator** presented reminiscence memorabilia and a variety of football objects such as football cards, newspaper clippings, pennants, and videos to trigger conversations. After the football-related material, participants were encouraged to discuss their memories in a friendly atmosphere.

**Material** was carefully chosen by FEAFV according to our guidance provided through the Foundation for Health and Ageing (FSiE) at the Universitat Autònoma de Barcelona (UAB) with the support of the University of West Scotland. It comprised objects (pennants, old leather balls...), images (football players, stadiums...) and videos (penalties, goals...) between years 1945 and 1980 of happy memories of football.

A **Life Story Book** in relation to football was developed by the researchers with the support of the

University of West of Scotland. Part of each session was dedicated to working on the Life Story Book. Family members were asked to collaborate in developing the Life Story Book by providing pictures of different moments of the patient's life (childhood, adolescence, and adulthood). In Bilbao, family members were invited to join the visits to the local football museum and stadium.

The final session at each site involved a **visit to the local football stadium and/or football museum**, specifically the stadium and museum from the local clubs: FC Barcelona, FC Valencia, and Athletic Club de Bilbao.

In practice, there was an ongoing iterative and co-operative process of discussion between the Spanish and Scottish projects so that implementation lessons could be shared and adjustments made to improve practices for immediate benefit to recipients of the reminiscence sessions, rather than waiting until the end of the project.

### **Evaluation methods**

Qualitative evaluation was aimed to explore the processes and impacts of the programme on all agents involved according to their opinions and experiences.

The qualitative data were collected through participant observation during the sessions and semi-structured interviews with involved professionals, participants, volunteers, and participants' caregivers. We applied the framework from Patton et al. (Patton, 1990) to evaluate the programme. Accordingly, the areas of evaluation were the following: the need of the programme, the design, the implementation, perceived impacts, and continuity. Interviews followed a topic guide with open-end questions in all areas mentioned and applied to the background and characteristics of each agent (see topic guide in Annex 9.2.3.). Professionals from the center interviewed participants with dementia and volunteers were asked to interview former players with dementia. In both cases their rapport and having shared the programme allowed tailoring the interview to the specific cognitive abilities to make it feasible and trustful.

Interviews were held after finishing the intervention and recorded for its posterior analysis in the long-term care center. Qualitative data were analyzed using content analysis. Triangulation of methods, informants and settings was applied to strengthen results.

### **Building a model for practice**

To build the model for practice, first of all, findings from each of the three Spanish projects were used to draw a local conceptual model considering agents involved, intervention characteristics, processes and impacts. In a next step, within the co-operative approach, our findings and model were compared with those obtained in the parallel process in Scotland to inform an original and global conceptual model. This final model for practice was theoretically and practice-driven.

### **Ethical Approval**

In Spain, ethical approval was secured from the Comissió d'Ètica en l'Experimentació Animal i Humana (CEEAH) de la Universitat Autònoma de Barcelona.

## 5. Results



Anna Mas i Talens

Me dieron mucho ánimo las compañeras.  
No porque se volcaran en mí o  
me preguntaran, no, era  
escuchando lo que pensaban ellos.

**My peers really motivated me. Not because they were extremely kind to me, or because they asked me things; it was simply listening to what they thought.**

## 5. Results

In this section, first of all we list the publications presented in this thesis. Following there is the summary of the main results of the published papers. Finally, we attach the original publications.

### 5.1 Publications presented in this thesis

This thesis is a compilation of following original publications:

#### Article n.1

Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Solà, I., & Montserín, R. (2016). Social capital interventions targeting older people and their impact on health: a systematic review. *Journal of Epidemiology & Community Health*, 1–10. <https://doi.org/10.1136/jech-2016-208131> PUBLISHED, **IMPACT FACTOR (2015): 3.865**

#### Article n.3

Coll-Planas, L., Del Valle Gómez, G., Bonilla, P., Masat, T., Puig, T., & Montserin, R. 2017 Jan;25(1):145-157. Promoting social capital to alleviate loneliness and improve health among older people in Spain. *Health & Social Care in the Community*. <https://doi.org/10.1111/hsc.12284> PUBLISHED, **IMPACT FACTOR (2015): 1.557**

#### Article n.5

Coll-Planas L, Watchman K, Doménech S, McGillivray D, O'Donnell H, Tolson D. Developing evidence for football (soccer) reminiscence interventions within long-term care: a co-operative approach applied in Scotland and Spain. *JAMDA* ; 18 (4) : 355-360. (2017) <http://dx.doi.org/10.1016/j.jamda.2017.01.013> PUBLISHED, **IMPACT FACTOR (2015): 6.616**

Complementarily, we include two articles in submission process, which are to be seen in the annex:

#### Article n.2

Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Montserín, R. A taxonomy proposal (SOCAI) of the use of social capital in interventions aimed at improving health among older people.

#### Article n.4

Coll-Planas L, Rodríguez L, Pons-Vigués M, Puig T, Nyqvist F, Montserín R. “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.

## 5.2. Summary of the main results

### **Article n.1: Social capital interventions targeting older people and their impact on health: a systematic review.**

#### ***Objective:***

*To assess the impact on health outcomes and use of health-related resources of interventions that promote social capital or its components among older people.*

We examined 17341 abstracts and included 73 papers reporting 36 trials. Trials were clinically and methodologically diverse and reported positive effects in different contexts, populations and interventions across multiple subjective and objective measures.

The review managed a high variety of complexity sources with the best available knowledge: characteristics of the intervention with multiple components, relevance of contextual factors on implementation and outcomes, multiple outcomes of interest, and the difficulty in locating, appraising and synthesizing the evidence to answer the research question.

According to the CADTH methodology, quality of life, well-being, self-perceived health, mood (including depressive symptoms and anxiety), loneliness and mortality were sufficiently reported outcomes (i.e., outcomes reported by at least five studies). Social capital interventions showed mixed effects on quality of life, well-being and self-perceived health, since one to two thirds of studies favoured the intervention. Furthermore, studies were classified as generally ineffective on loneliness, mood and mortality, since more than two thirds of studies showed a favourable effect. Mood was the most frequently studied outcome. Nevertheless, trials with successful results on those outcomes targeted complex cases of loneliness and depression.<sup>65,163–165</sup> Also one trial with low risk of bias targeting lonely people was effective on mortality.<sup>62</sup> Remarkably, some effective trials on quality of life, well-being and self-perceived health targeted lonely and depressed older people.<sup>58,166</sup>

Regarding insufficiently reported outcomes (i.e., outcomes reported in four or less studies), all categories had at least one positive outcome from a trial with low risk of bias:

- Psychological variables: generativity, feeling needed, agitation in dementia and caregiver burden among.
- Cognition: a) Objective outcomes: executive function, verbal learning, fluency and memory, and cortical and hippocampal volume; b) Subjective outcomes: intellectual activity.
- Physical health: a) Subjective outcomes: physical activity and self-reported strength; b) Objective outcomes: walking speed, physical ability, aerobic fitness and percentage of body fat.
- Use of health-related resources: visits to the doctor, days spent in hospital and nursing home placement.

Considering exclusively the studies judged as low risk of bias, which correspond with eight trials, favourable impacts were reported in quality of life, well-being, self-perceived health, mental health

(mood and psychological variables) and physical health, mortality and use of health-related resources but not in loneliness.<sup>58,62,167-169</sup>

Thus our results provide preliminary evidence that social capital might promote general health. However, they require cautious interpretation due to the high diversity and low quality of the trials. Impact on mood, loneliness and mortality may call for specific intervention designs. Indeed, social capital interventions seem to increase general health in lonely people although they do not relieve their loneliness. Therefore, our review supports the potential of social capital to reach comprehensive health effects.

Concluding, our findings highlight the lack of evidence, high clinical diversity between trials and the low quality, while suggesting the potential of social capital to impact health, especially quality of life, well-being and self-perceived health in older adults.

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## **Article n.2: A taxonomy proposal (SOCAI) to guide the use of social capital in interventions aimed at improving health among older people.**

As a paper in submission process, its results are to be seen in the annex.



### **Article n.3: Promoting social capital to alleviate loneliness and improve health among older people in Spain.**

#### ***Objectives:***

*The first aim was to explore the feasibility of an intervention in mixed rural–urban and urban areas of diverse socioeconomic levels.*

*The second aim was to assess the immediate and long-term effects of this intervention among older participants on: (i) loneliness; (ii) structural and cognitive aspects of individual social capital (i.e. participation and social support); (iii) perceived health, health-related quality of life, depressive symptoms and the use of anxiolytics and antidepressants; and (iv) the use of health services.*

This study provides a novel approach to address loneliness by means of promoting social capital. The co-ordinated action, applied from a preventive and psychosocial perspective, and the programme were feasible in the semi-rural and the urban context, and in low and medium socio-economic conditions. In all intervention sites, social workers and nurses were successfully involved as group leaders and observers, ten volunteers took part and 38 participants were included. Of the 38 participants, 68% (n = 26) completed the programme. Dropped outs were mainly due to health-related problems but also some reasons to leave the group were related to the programme or to the family. Each group conducted the five visits that were planned to local community assets. Overall, they visited: seven senior centres, four libraries, one neighbourhood association, one museum, one community centre and one cultural centre. During the visits, participants engaged in 11 activities: three storytelling sessions, two regular informal gatherings, one workshop on handicraft, one film, one literature awards ceremony, two time-banking presentations and one conference on health.

Our findings showed the relevance of urban and rural contexts when intervening in loneliness in Spain, such as the need to work on confidentiality issues, especially in more rural areas. However, the differential findings observed in the zones cannot be attributed to the geographical and socio-economic contexts.

After the intervention, overall loneliness, social and emotional loneliness significantly decreased while social participation (as structural aspect of social capital) and support (as cognitive aspect of social capital) significantly increased. Exactly 65.8% of the participants built social contacts within the group and 47.4% became engaged in new activities. No health effects were detected after the intervention on perceived health, health-related quality of life, depressive symptoms and the use of anxiolytics and antidepressants. Regarding the use of health services, the number of visits to nurses increased, but not the number of visits with general practitioners, either hospitalizations or visits to the emergency department.

Two years after the intervention, effects on loneliness (overall, social and emotional), social participation and social support were maintained. Moreover, depressive symptoms had decreased. Exactly 44.7% of the participants continued to be in contact with at least one person from the group and 39.5% continued participating. Participants reported diverse forms of continuing their contacts. In the semi-rural zone, the main bonding elements between participants were activities promoted by



the Social Services, in which they were mainly involved as volunteers. In the urban zone with low socio-economic level, volunteers were the bonding element: after some informal gatherings, they established a formal memory training activity. In the urban zone with medium socio-economic level, participants were mainly connected through the senior centre. Participants reported that they continued the activities because they experienced satisfaction and well-being, their needs were being met (e.g. memory training eased their concern of losing their memory), they were participating with a friend, and they had established and maintained social contacts.

Concluding, the intervention contributes a novel and feasible social capital-based approach for alleviating loneliness among older adults while prompting meaningful changes in their lives.

Our study developed a culturally appropriate strategy, tailored to our health and social system based on social capital to alleviate loneliness. Moreover, our intervention tried to overcome behavioural challenges, used care co-ordination including community assets and achieved promising results.

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#### **Article n.4: “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.**

As a paper in submission process, its results are to be seen in the annex.

## **Article n.5: Developing evidence for football (soccer) reminiscence interventions within Long-term care: a co-operative approach applied in Scotland and Spain.**

### ***Objective:***

*To develop a conceptual model for practice, drawing upon the football reminiscence implementation studies undertaken within Spain and Scotland, and enriched by theoretical frameworks.*

### **Participants' characteristics**

A total of 20 participants were recruited five in Barcelona, eight in Valencia, and seven in Bilbao. Three of the participants were women, and 13 had a low educational level. Four participants were recruited in Valencia despite having no cognitive decline because of the difficulty of finding enough people in the chosen nursing home fitting the profile with an interest in football and willing to participate. Three former football players with cognitive impairment were included, two in Valencia and one in Bilbao.

In the qualitative evaluation, we aimed to interview all participants (20), family caregivers (20) and volunteers (four) of each intervention site and all professionals (six) involved in the facilitation or observation of the sessions. However, five participants were not available at the end of the intervention, among them the three former football players: one dropped out, one suffered a fall and was hospitalized and the other one refused to be interviewed. Therefore, effects on former football players with dementia were obtained through the observations of volunteers and professionals.

### **Findings of the qualitative evaluation**

The present exploratory study has shown the feasibility and acceptability of the intervention. In addition, it has been possible to replicate the intervention allowing an adaptation to the specific local environment. Accordingly, the study has allowed exploring different adaptations to each environment in terms of the characteristics of the long-term care centers, the profiles of the participants, the materials and the involvement of former football players and family members. For instance, in Valencia, due to the lack of people with cognitive decline and interest in football, few participants without cognitive impairment were also invited to participate. Furthermore, since the implementation in each intervention site was sequential, the diversity of materials has increased in each implementation next to an increasing participation of the Local Association of Veteran Football Players. Likewise, the involvement of volunteers has increased from the first edition in Barcelona to the last one in Bilbao. The presence of former football players with cognitive impairment was finally not possible in Barcelona but in Valencia and Bilbao. Also family members have been increasingly involved. For instance, in Bilbao, their engagement began from the first session and they were invited to join the trips to visit the Stadium and the Museum.

Thus, the first edition was a useful guide to detect barriers and facilitators, the second edition allowed the involvement of former players with dementia and the last one counted on a very high participation of both former football players and families.

By triangulating the data obtained, i.e., comparing the results reported by the different agents involved in the intervention (participants, family and caregivers, professionals and volunteers) in the three intervention sites, a high coincidence in perceived impacts was achieved. These findings are presented in Table 1 in the annex 9.2.3. accompanied by verbatims.

### **The conceptual model for practice**

The results gathered from the qualitative evaluation of the implementation cases in Scotland and Spain contributed to building the model from a practical perspective. As a first step, findings from each of the three projects were used to draw a conceptual model for the Spanish experiences. The figure of the FEAFV-FSIE Spanish model is presented in the annex 9.2.3. Furthermore, our findings and model were compared with those obtained in the parallel process in Scotland to inform an original and global conceptual model presented in the published paper. This model was aimed at supporting the introduction of sustainable approaches to the development of football-focused reminiscence with and for people with dementia.

The theoretical perspective was enriched by the Senses framework, which recognizes the relational aspects within care and caring and the centrality of the person receiving care or community interventions.<sup>170,171</sup> This framework is focused on the creation of an environment in which older people, or, in our project, participants of the football reminiscence intervention, experience six senses, namely, sense of security, sense of belonging, sense of continuity, sense of purpose, sense of achievement, and sense of significance.

Concluding, loneliness is a common experience within long-term care and, to promote well-being and quality of life among people with dementia, it is important to draw upon a repertoire of strategies that provide social stimulation, companionship and enjoyment. Group-based football reminiscence interventions are feasible in a variety of long-term care settings including nursing homes and day care and have the potential to bring people with dementia together to enjoy a shared and meaningful activity. The practice guide proved a useful starting point to shape local delivery approaches, and the new conceptual model offers a deeper consideration for long-term care professionals and applied researchers to further develop and deepen understanding of how such approaches might harness social capital to alleviate loneliness in the most dependent and vulnerable members of the community.

### 5.3. Original publications

#### **ARTICLE 1:**

#### **SOCIAL CAPITAL INTERVENTIONS TARGETING OLDER PEOPLE AND THEIR IMPACT ON HEALTH: A SYSTEMATIC REVIEW.**

Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Solà, I.,  
Monteserín, R.

Journal of Epidemiology & Community Health (JECH)  
2016

Published Online First: 10 November 2016 [https://doi.org/10.1136/  
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# Social capital interventions targeting older people and their impact on health: a systematic review

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## ABSTRACT

**Background** Observational studies show that social capital is a protective health factor. Therefore, we aim to assess the currently unclear health impact of social capital interventions targeting older adults.

**Methods** We conducted a systematic review based on a logic model. Studies published between January 1980 and July 2015 were retrieved from MEDLINE, EMBASE, CINAHL, PsycINFO, Cochrane Central Register of Controlled Trials and Web of Science. We included randomised controlled trials targeting participants over 60 years old and focused on social capital or its components (eg, social support and social participation). The comparison group should not promote social capital. We assessed risk of bias and impact on health outcomes and use of health-related resources applying a procedure from the Canadian Agency for Drugs and Technologies in Health (CADTH) based on vote-counting and standardised decision rules. The review protocol was registered in PROSPERO (reference number CRD42014015362).

**Results** We examined 17 341 abstracts and included 73 papers reporting 36 trials. Trials were clinically and methodologically diverse and reported positive effects in different contexts, populations and interventions across multiple subjective and objective measures. According to sufficiently reported outcomes, social capital interventions showed mixed effects on quality of life, well-being and self-perceived health and were generally ineffective on loneliness, mood and mortality. Eight trials with high quality showed favourable impacts on overall, mental and physical health, mortality and use of health-related resources.

**Conclusions** Our review highlights the lack of evidence and the diversity among trials, while supporting the potential of social capital interventions to reach comprehensive health effects in older adults.

## INTRODUCTION

Societal and structural changes are reframing social contacts in quantity and quality. Among older people, the risk of social isolation and loneliness is increasing, while opportunities for social relationships and participation might emerge. Accordingly, the WHO Active Ageing paradigm highlights that social networks shape resilience and health throughout life.<sup>1 2</sup>

Social capital has several definitions.<sup>3</sup> From the social cohesion approach Putnam refers to it as a public good based on community activities.<sup>4</sup> This approach is the most widespread in health research and was adapted to the ageing process emphasising the interaction between the individuals at the *individual* (or micro) and the *collective* levels, comprising meso

(neighbourhood) and macro (society) contexts.<sup>5 6</sup> Accordingly, we use social capital to refer to an umbrella concept, in which social resources (social capital components) are grouped into *dimensions*: social networks, social contacts and participation belonging to the *structural* or objective aspects; and social support, sense of belonging and trust corresponding to the *cognitive* or subjective aspects. Moreover, depending on the *directions* of social ties, social capital is defined as bonding (intragroup ties between members sharing common characteristics), bridging (ties between heterogeneous groups) or linking (relationship between people who possess unequal wealth, power and status).<sup>7-9</sup>

Observational studies indicate that social capital components are a major protective factor for mental and physical health and mortality, with an effect comparable to smoking cessation.<sup>10-13</sup> Moreover, theoretical background and empirical evidence show how specific dimensions and directions of social capital are related to specific gains and losses of health, as well as to health inequalities.<sup>14-16</sup> Social capital interventions, specially those that promote social support and social participation, have often the purpose to increase well-being or mental health, alleviate loneliness, promote healthy lifestyles or improve self-management of chronic diseases. However, it remains unclear whether social capital interventions impact on the variety of health outcomes linked to social capital according to observational studies. Some trials achieved significant effects on several health outcomes while others have not,<sup>17-20</sup> and an overview of trials that promote social capital is lacking. Previous systematic reviews have generally included non-randomised designs<sup>21-24</sup> and focused interventions on specific social capital components<sup>25 26</sup> or psychosocial interventions.<sup>24 27</sup> Moreover, they have assessed psychosocial effects and seldom considered health outcomes.<sup>22</sup>

Furthermore, social capital also generates undesirable consequences, which are understudied.<sup>28</sup>

Social capital interventions are complex and, consequently, pose specific challenges, for example, regarding impact mechanisms and implementation.<sup>29</sup> Moreover, the lack of evidence hampers the implementation of social capital interventions in healthcare. Accordingly, an evidence base for further research, policy and practice is essential.

Therefore, we conducted a systematic review of the literature, broad in scope, with the objective of assessing the impact on health outcomes and use of health-related resources of interventions that promote social capital or its components among older people.

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## METHODS

A review protocol was developed and registered in PROSPERO (reference number CRD42014015362). We report the results according to the PRISMA statement.<sup>30</sup>

We considered eligible those studies with a randomised controlled trial design, that included participants over the age of 60 (or alternatively with a mean age over 64). Studies had to assess an intervention that promoted social capital or one of its components.<sup>6</sup> In multicomponent trials, the inclusion was restricted to those studies in which social capital was the focus of the intervention. Professional support was not considered social support, and thus was not social capital either.<sup>31</sup> We included studies reporting effects on health outcomes (general, physical and mental health or mortality) or use of health-related resources (including nursing home placement). Comparison groups could not contain social capital components.

We conducted an exhaustive search of articles published between January 1980 and July 2015 in: MEDLINE, EMBASE, CINAHL, PsycINFO, the Cochrane Central Register of Controlled Trials and the Web of Science.

We combined a series of text terms and controlled vocabulary related with the population and the intervention of interest. We added to this algorithm an adaptation of the Cochrane filter to identify controlled trials. No language restrictions were applied. We include the complete search algorithms in online supplementary appendix 1. References of study protocols, systematic reviews and included studies were checked for additional studies, and we contacted the first authors from the included studies.

Two review authors (LC and RM) independently screened the results retrieved from the search to check eligibility criteria. We obtained the full text of eligible studies and independently assessed their final inclusion. Discrepancies were resolved by consensus or by consulting with a third author (FN).

We designed a data extraction form to obtain data from included studies and describe their characteristics in terms of design, population, context, intervention, comparison, outcomes and results.

We described participants according to the disadvantage categories from the PROGRESS Plus framework, considering that social capital is a social determinant of health that is highly interrelated with the rest of the determinants.<sup>32 33</sup>

We classified the interventions according to the social capital dimensions, the directions of the social ties and whether promoted relationships were new and/or existing. We extracted data according to the TIDieR reporting guidelines to characterise the programmes described.<sup>34</sup>

We adapted the Cochrane risk of bias tool to assess the internal validity rating random sequence generation, allocation concealment, blinding and incomplete outcome data.<sup>35</sup> We report a summary judgement on risk of bias for each study, according to random sequence generation, allocation concealment, and incomplete outcome data rated as: 'high risk of bias' when at least one domain was determined to be biased, 'low risk of bias' if all domains were rated as unbiased, and 'unclear' when at least one item was not reported in detail to make judgements. Blinding was excluded from the summary risk of bias due to its difficulty to be implemented in social capital interventions.

We contacted study authors for missing data in the trial reports.

We could not perform a quantitative synthesis using meta-analysis due to the clinical diversity in terms of participants' characteristics, intervention designs, settings and contexts, outcomes and measurement procedures.<sup>35</sup> Indeed, similar reviews on psychosocial interventions have seldom found the

proper conditions to apply meta-analysis.<sup>22 24</sup> Moreover, the heterogeneity of ways of reporting results among the included studies prevented us also from comparing effect sizes and analysing whether the effects were clinically meaningful. Therefore, we conducted a narrative synthesis based on described effects to assess health impact.<sup>36</sup>

First, we identified sources of complexity and according to the ESRC (Economic and Social Research Council) guidance on the conduct of narrative synthesis,<sup>37</sup> we built a logic model to support the conceptualisation outlining that social capital-based interventions might improve health outcomes and use of health-related resources by promoting physiological, psychological, behavioural and instrumental changes (see figure 1).<sup>38–42</sup>

For the preliminary synthesis, we tabulated the information on study design, context (setting, geographical and policy context), target population, social capital-based intervention characteristics, social capital goals and components and health outcomes and use of health-related resources at study level. Undesirable outcomes were listed and classified.

In the next step, we clustered studies assessing the same outcome (eg, quality of life) and applied the standardised decision rules and statements about effectiveness to produce a narrative evidence synthesis used by the Canadian Agency for Drugs and Technologies in Health (CADTH) in the Rx for Change database.<sup>43 44</sup> Accordingly, we limited the synthesis to outcomes that were reported in at least five trials, as in fewer studies the applicability of findings would be spurious. Outcomes insufficiently reported (ie, reported in less than five studies) were grouped for descriptive purposes into wider health categories, for example, physical health, and subcategories of subjective and objective outcomes were established when applicable. For each sufficiently reported outcome (ie, reported in at least five studies), we applied vote-counting to count the number of trials according to the reported direction of effect (significant favouring social capital, significant favouring control, non-significant differences). Afterwards, we assessed the impact of the interventions according to the following decision rules: 'no effect' if any included study favoured the intervention; 'generally ineffective' when up to 33% of the studies favoured the intervention; 'mixed effects' when 34–66% of the studies favoured the intervention; 'generally effective' when more than 66% of the studies showed a favourable effect. We completed the analysis relating these results with the directions and dimensions of social capital addressed in the interventions, the range of intervention length, the populations and settings targeted and the summary judgement on risk of bias. The accumulated sample size of trials was considered in order to weight the results with a descriptive purpose.

Finally, we focused on studies judged as low risk of bias and identified in which outcomes and outcome categories trials reported positive impacts.

Along the analysis, we differentiated effects on subjective and objective outcomes.

## RESULTS

### Description of included studies

We screened 17 341 abstracts and included 73 papers reporting 36 randomised controlled trials. The eligibility process is described in a PRISMA flow chart (figure 2).

We summarise the trial characteristics in table 1 and provide the detailed information at study level in online supplementary appendix 2 as tabulated for the preliminary synthesis.

Trials were very heterogeneous regarding population, intervention characteristics, context and outcomes according to their



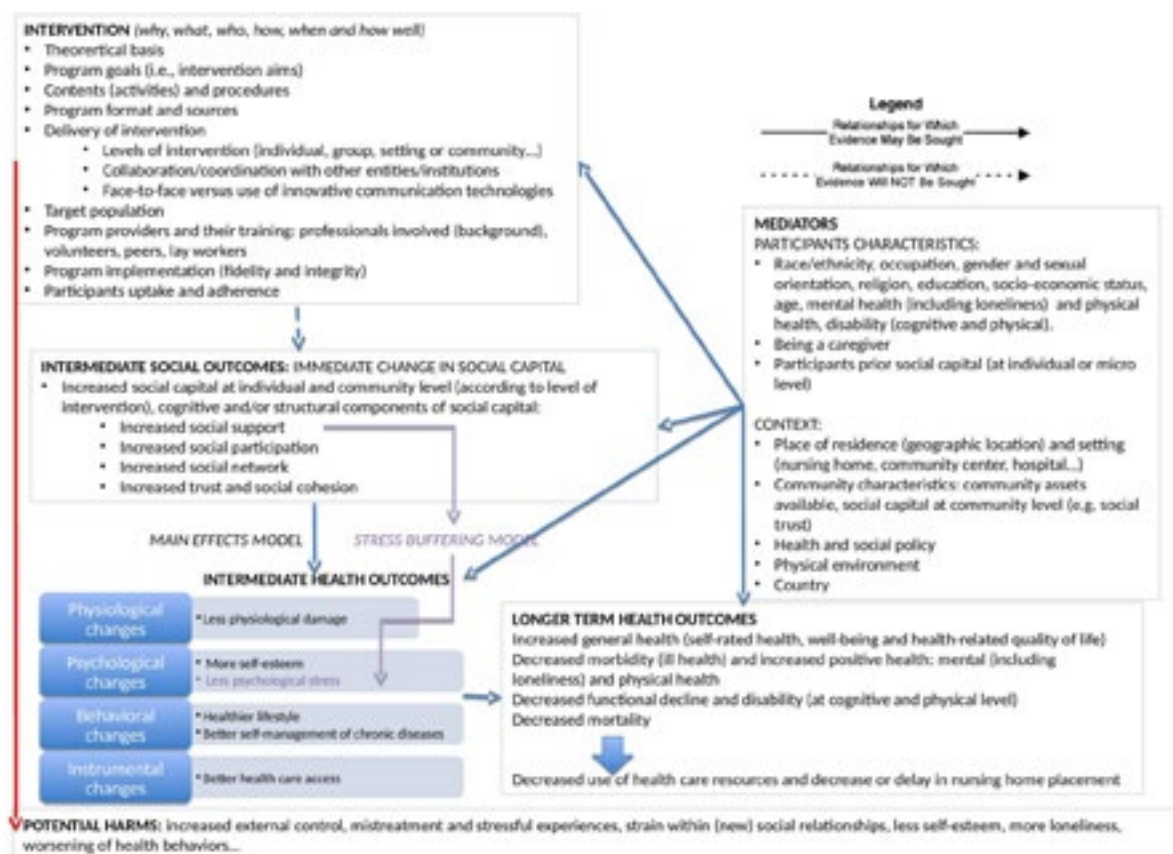


Figure 1 Logic model illustrating the conceptual approach.

measure, report and follow-up period. However, they were more frequently conducted in the community, in urban areas of high-income countries and mainly targeted Caucasian older people without disability or dementia.

The studies provided limited information on context. Six studies stated how specific policies supported their research: Active Ageing, national health priorities, policies on voluntary action, guidelines on specific diseases and research priorities.

Regarding the disadvantage categories,<sup>33</sup> almost half of the studies had a mean age of between 70 and 80 years and 25% of 80 and over. Women were majority in 29 trials and were the exclusive target in three studies. Men were majority in only one study.<sup>45</sup> In caregiver studies, women were majority among caregivers and men among care recipients. The category sexual orientation was not mentioned in any study. Eleven studies included ethnic minorities; in two most participants were African-American.<sup>20 46</sup>

Twenty-three studies reported participants' economic and/or educational level, but with heterogeneous descriptions. Ten studies mainly included people with low socio-economic levels. The lowest educational level was reported in a trial in which 47.1% of the participants had no primary education,<sup>47</sup> while the highest was described in a trial in which 96% of participants had completed high school.<sup>48</sup>

Interventions ranged from 1.5 months to over 1 year. Around half of the interventions had a duration of 3 months or less and the last postintervention assessment reported was just after the intervention. Programmes were mainly based on social support (eg, support groups, peer support...), social activities, befriending schemes and/or engaging participants in activities. From the

social capital perspective, the cognitive dimension and the new and bonding relationships were the most frequently promoted.

Interventions were delivered face-to-face in 28 studies, four were remote and four combined both modes. Volunteers, peers, students, lay workers and a wide range of health and social care professionals were involved.

Fifteen studies assessed group interventions. Some specificities to highlight are the use of a seal robot to promote social interaction in a nursing home and that two programmes promoted a health behaviour change. Some groups were remote.

Fourteen studies focused on individual interventions, mainly based on home visits or visits to the nursing home but two programmes were remote. Remarkably, one was a cognitive stimulation based on social interaction through computer. Three interventions involved members of the existing support network.

Three interventions combined individual with group-based activities.

Four studies applied a setting approach (ie, involving the complete institution), three programmes were based on intergenerational activities with schools and one provided humour therapy in a nursing home. No interventions were community-wide.

Regarding undesirable consequences of interventions, seven (19.4%) studies either reported harmful effects, mechanisms to detect them, or how they were solved. Precisely, four studies reported not having caused adverse mental events. Three further studies reported miscommunication, interpersonal friction and dissatisfaction with closure of the groups, and due to lack of face-to-face contact and shared interests. The first two adverse effects were solved during the intervention.

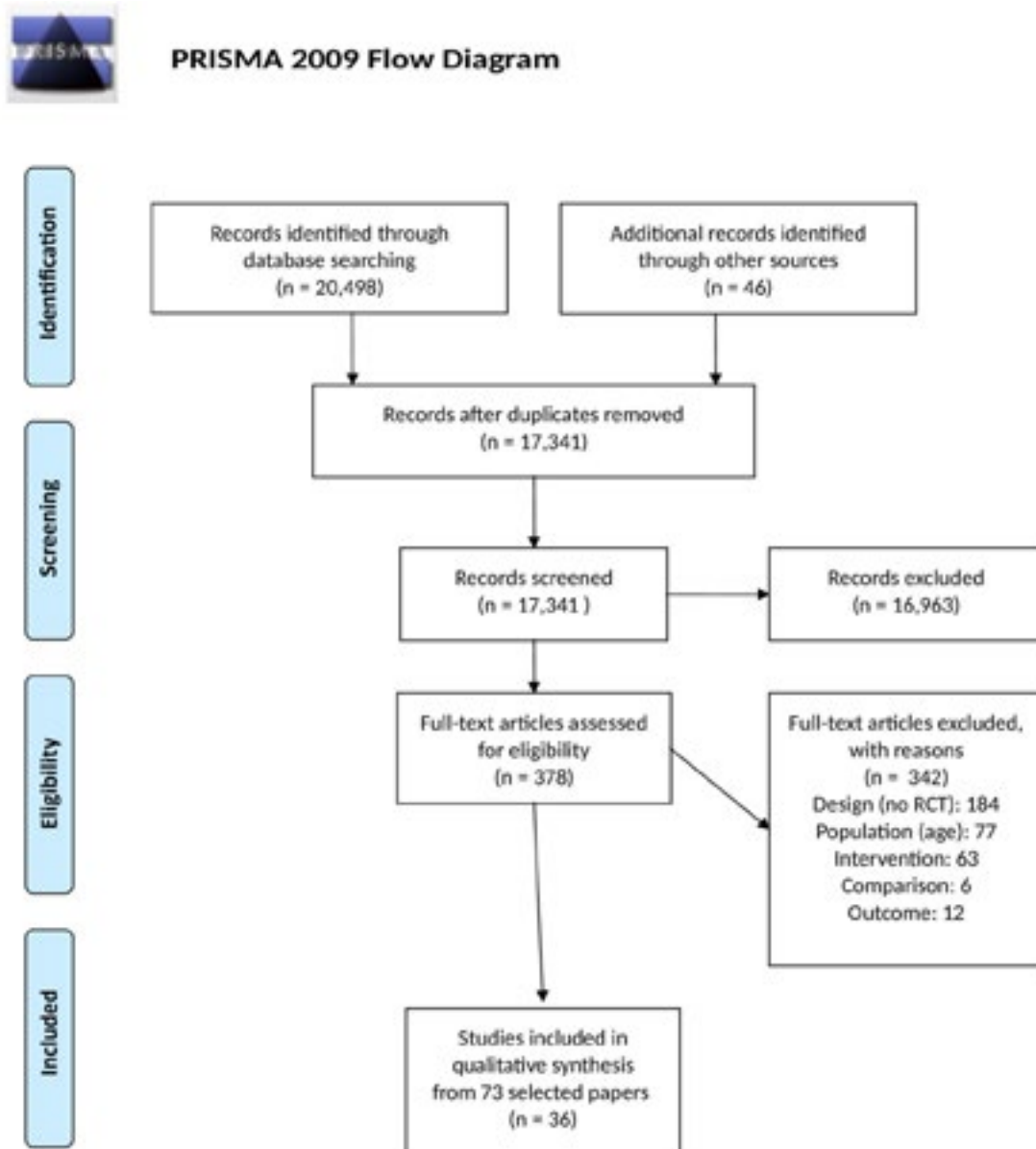


Figure 2 Flow diagram.

Risk of bias assessment is presented in figure 3. Only eight studies (22%) were considered to have an overall low risk of bias, while the majority was judged as unclear due to lack of reporting. The attrition rate ranged from 0% to 64.3%. Most studies (25) had an attrition rate below 25%. Attrition was equivalent among groups in 14 studies, but was higher in the intervention or the control group in seven studies each. Seventeen studies mentioned an intention-to-treat analysis, but only four explained how they imputed missing data.

Only seven trials (19.4%) reported on blinding. Of those, four studies reported blinding the outcome assessors, but in one of them blinding was revealed, and one reported blinding of data analyst.

#### Effects on health outcomes and use of health-related resources

According to the CADTH methodology, quality of life, well-being, self-perceived health, mood (including depressive symptoms and anxiety) and loneliness were subjective outcomes

sufficiently reported to be assessed, and mortality was the only objective outcome reported also in at least five trials. Mood was the most frequently studied outcome. Specifically, trials were interpreted as generally ineffective on loneliness, mood and mortality. Nevertheless, trials with successful results on those outcomes targeted complex cases of loneliness and depression.<sup>17 45 49 50</sup> Also one trial with low risk of bias targeting lonely people was effective on mortality.<sup>18</sup> Regarding quality of life, well-being and self-perceived health, trials reported mixed effects. Remarkably, some of those effective trials targeted lonely and depressed older people.<sup>51 52</sup>

Table 2 presents the narrative evidence synthesis on sufficiently reported outcomes and online supplementary appendix 3 details results at study level on those outcomes.

Table 2 shows the interpretation of the effectiveness and the applicability of the results of the sufficiently reported outcomes (ie, reported by at least five studies). It presents the range of length of the intervention and the aggregated sample sizes.



**Table 1** Basic descriptive table on the included studies

Category	Characteristics	Number and percentage of studies (total n=36)		
Design	Number of randomised participants	<100	15 (41.7%)	
		100–200	7 (19.4%)	
		201–300	9 (25.0%)	
		>300	5 (13.9%)	
Context	Country/continent	Europe	14	
		South Europe	1	
		Northern Europe	4	
		UK	4	
		Central Europe	5	
		America	17	
		Northern America	16	
		South America*	1	
		Asia*	3	
		Oceania	2	
	Setting	Community	25	
		Nursing home	9	
		Hospital	1	
Participants	Target specific health conditions**	<i>Physical chronic diseases</i>	5	
		Heart diseases	1	
		Osteoarthritis	1	
		Diabetes mellitus	1	
		Cancer	1	
		Stroke	1	
		<i>Mental health</i>	6	
		Depression	3	
		Sleep disorders	1	
		Dementia	2	
	Target specific social conditions**	<i>Social conditions</i>	6	
		Loneliness	2	
		Unpartnered older adults	1	
		Low perceived social support	1	
		Relocation	1	
		<i>Caregivers</i>	6	
		Intervention	Social capital components	Only existing social relationships
Only new social relationships	26 (72.2%)			
Both new and existing social relationships	3 (8.3%)			
Only structural social capital	6 (16.7%)			
Only cognitive social capital	16 (44.4%)			
Both structural and cognitive	14 (38.9%)			
Total structural social capital	20 (55.6%)			
Total cognitive social capital	30 (83.3%)			
Total bonding	28 (77.8%)			
Total linking	13 (36.1%)			
Total bridging	14 (38.9%)			
Main purpose of the social capital intervention	Promote well-being and quality of life			6 (16.7%)
	Alleviate loneliness			3 (8.3%)
	Improve mental health		9 (25%)	
	Increase cognition		3 (8.3%)	
	Increase social resources		3 (8.3%)	
	Improve aspects of general or physical health		8 (22.2%)	
	Promote an appropriate use of health-related resources		4 (11.1%)	

\*Middle-income countries.

\*\*Not all studies target specific social or health conditions, while some studies target more than one health condition and some target social and health conditions, therefore it does not add 36.

Regarding setting, positive effects were reported in community-dwelling older adults and nursing home residents in all sufficiently reported outcomes except for mortality.

Considering exclusively the studies judged as low risk of bias, favourable impact was reported in quality of life, well-being, self-perceived health, mood and mortality but not in loneliness.<sup>18 51 53–55</sup>

Regarding insufficiently reported outcomes, all categories had at least one positive outcome from a trial with low risk of bias:

generativity, feeling needed, agitation in dementia and caregiver burden among psychological variables; physical activity and self-reported strength among subjective outcomes on physical health; walking speed, physical ability, aerobic fitness and percentage of body fat among objective outcomes on physical health; executive function, verbal learning, fluency and memory, and cortical and hippocampal volume among objective outcomes on cognition and intellectual activity among the subjective ones; visits to the doctor, days spent in hospital and nursing

Studies	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding (performance bias and detection bias)	Incomplete outcome data (attrition bias)	Summary risk of bias*
ID 1 Andersson n. 1985	?	?	?	?	?
ID 2 Boen, 2012	?	?	?	?	?
ID 3 Carril, 2007	?	?	?	?	?
ID 4 Charlesworth, 2008	?	?	?	?	?
ID 5 De Souza, 2007	?	?	?	?	?
ID 6 Dodge, 2014	?	?	?	?	?
ID 7 Fried, 2004	?	?	?	?	?
ID 8 Friedland, 1992	?	?	?	?	?
ID 9 Gallagher, 1997	?	?	?	?	?
ID 10 Gellis, 2011	?	?	?	?	?
ID 11 Grubisova et. 2015	?	?	?	?	?
ID 12 Hastam, 2010	?	?	?	?	?
ID 13 Heister, 2013	?	?	?	?	?
ID 14 Heller, 1991	?	?	?	?	?
ID 15 Hind, 2014	?	?	?	?	?
ID 16 Joling, 2012	?	?	?	?	?
ID 17 Kuk, 2014	?	?	?	?	?
ID 18 Laakkonen n. 2014	?	?	?	?	?
ID 19 Low, 2013	?	?	?	?	?
ID 20 Mantovani 1996	?	?	?	?	?
ID 21 McCumie, 1999	?	?	?	?	?
ID 22 McNeil, 1995	?	?	?	?	?
ID 23 Mittelman, 1993	?	?	?	?	?
ID 24 Mortimer, 2012	?	?	?	?	?
ID 25 Neil Thomas, 2012	?	?	?	?	?
ID 26 Onust, 2008	?	?	?	?	?
ID 27 Oppikofer, 2002	?	?	?	?	?
ID 28 Oppikofer, 2010	?	?	?	?	?
ID 29 Routasalo, 2008	?	?	?	?	?
ID 30 Quayhage n. 2000	?	?	?	?	?
ID 31 Reinke, 1981	?	?	?	?	?
ID 32 Robinson, 2013	?	?	?	?	?
ID 33 Saito, 2012	?	?	?	?	?
ID 34 Williams, 1991	?	?	?	?	?
ID 35 Wilson, 1987	?	?	?	?	?
ID 36 Winter, 2007	?	?	?	?	?

Figure 3 Assessment of risk of bias. \*The summary risk of bias is based on selection and attrition bias.

home placement among use of health-related resources. Online supplementary appendix 4 presents detailed results on these outcomes at study level with additional text.

**DISCUSSION**

**Summary of findings**

We identified 36 randomised trials assessing the health impact of a social capital intervention targeting older people.

Studies were clinically diverse but unequally distributed across settings and contexts, intervention designs, target population and outcomes assessed. Subjective outcomes were more frequently reported.

The harmful effects of social interventions were understudied, rare, mild, limited to mental health and, at least partially, resolvable.

According to the CADTH procedures, trials were generally ineffective on loneliness, mood and mortality and reported mixed effects on quality of life, well-being and self-perceived health. Nevertheless, those trials with successful results

addressed complex cases or had low risk of bias. Moreover, in all sufficiently reported outcomes, but loneliness, at least one study with positive results had a low risk of bias. Therefore, our findings indicate the potential of social capital interventions to impact these outcomes.

In all categories of insufficiently reported outcomes (ie, psychological variables, physical health, cognition, use of health-related resources), at least one trial with a low risk of bias reported a positive impact, comprising subjective and objective outcomes.

In summary, although the review does not allow estimating the effect of the intervention, the narrative synthesis detected a signal that for certain populations and outcomes the intervention could be effective.

**Strengths and weaknesses**

This is the first systematic review of clinical trials focused on social capital targeting older people and assessing its health effects. Our results are consistent with previous reviews focused

Table 2 Narrative evidence synthesis on sufficiently reported outcomes

Out-come	Studies N studies N participants Range of intervention length	Social capital intervention	Findings	Summary risk of bias Number of studies at each category	Interpretation	Applicability, Setting and main participants' characteristics.
Quality of life Subjective measure	6 studies (ID: 12, 13, 27, 28, 29, 32) Aggregated samples: 707 1.5 to 6 months long	2/6 existing SC 4/6 new SC 2/6 structural SC 5/6 cognitive SC 4/6 bonding SC 2/6 linking SC 2/6 bridging SC	+ve: 3 (50%) -ve: 0 (0%) NS: 3 (50%) +ve: 1 low 1 low 2 high	All: 1 low 2 unclear 3 high risk +ve: 1 low 1 low 2 high	Mixed effects	CD: 2 studies. One was ineffective and targeted people with heart failure and the other one was effective and targeted people feeling lonely NH: 3 studies. One was effective and targeted residents diagnosed with dementia receiving two or less visits per week. H: One effective study in a geriatric hospital targeting people diagnosed with dementia receiving two or less visits per week.
Well-being Subjective measure	10 studies (ID: 2, 4, 9, 10, 12, 14, 29, 30, 31, 33) Aggregated samples: 1720 1.5 to 12 months long	3/10 existing SC 8/10 new SC 5/10 structural SC 10/10 cognitive SC 8/10 bonding SC 6/10 linking SC 3/10 bridging SC	+ve: 4 (40%) -ve: 1 (10%) NS: 5 (50%) +ve: 1 low 1 unclear 2 high	All: 1 low 2 unclear 7 high +ve: 1 low 1 unclear 2 high	Mixed effects	CD: 7 studies. Four ineffective trials targeted: people with psychological distress and not having been regular users of the senior centre, women with low income and low social support and two trials focused on family carers of dementia patients, one of them including also the patient. Three trials were effective targeting: people feeling lonely, people who had moved into a new city and people with osteoarthritis. NH: 3 trials. One was effective
Self-perceived health Subjective measure	9 studies (ID: 1, 2, 4, 5, 15, 22, 23, 29, 31) Aggregated samples: 1625 2-over 12 months long	1/9 existing SC 9/9 new SC 7/9 structural SC 7/9 cognitive SC 6/9 bonding SC 4/9 linking SC 4/9 bridging SC	+ve: 4 (44.4%) -ve: 0 (0%) NS: 5 (55.6%) +ve: 2 low 2 low 1 unclear 1 high	All: 2 low 2 unclear 5 high +ve: 2 low 1 unclear 1 high	Mixed effects	CD: 8 studies. Five ineffective trials targeted: women living alone and feeling lonely, people with psychological distress and not having been regular users of the senior centre, residents in the school's catchment area of low socioeconomic urban area, participants with good cognitive function and family carers of people with dementia. Three effective trials targeted: people feeling lonely, people without physical disabilities and spousal primary caregiver of patients diagnosed with Alzheimer's disease, residing together. NH: 1 effective trial
Loneliness Subjective measure	8 studies (ID: 1, 4, 6, 14, 15, 29, 32, 33) Aggregated samples: 1213 1.5 to 6 months long	1/8 existing SC 7/8 new SC 6/8 structural SC 6/8 cognitive SC 6/8 bonding SC 3/8 linking SC 4/8 bridging SC	+ve: 2 (25%) -ve: 0 (0%) NS: 6 (75%) +ve: 2 high	All: 1 low 1 unclear 6 high +ve: 2 high	Generally ineffective	CD: 7 studies. Six ineffective trials targeted: older people feeling lonely, exclusively women living alone and feeling lonely, women with low income and low social support, persons with good cognitive function, people with dementia and people with Mild Cognitive Impairment and family carers of people with dementia. One effective trial targeted people who had moved into a new city NH: 1 effective trial
Depression and anxiety Subjective measure	17 studies (ID: 2, 4, 7, 12, 14, 15, 16, 19, 20, 21, 23, 26, 29, 32, 33, 34, 36) Aggregated samples: 2895 1.5 to over 12 months long	6/17 existing SC 13/17 new SC 12/17 structural SC 15/17 cognitive SC 12/17 bonding SC 8/17 linking SC 6/17 bridging SC	+ve: 5 (29.4%) -ve: 0 (0%) NS: 12 (70.6%) +ve: 1 low 2 unclear 2 high	All: 5 low 3 unclear 9 high +ve: 1 low 2 unclear 2 high	Generally ineffective	CD: 11 trials. Ten trials were ineffective and targeted: women with low income and low social support, persons feeling lonely, persons recently widowed with feelings of loneliness, persons who had moved into a new city, people with psychological distress and not having been regular users of the senior centre, people with ability to read and to travel to the schools (African-American mainly), people with good cognitive function, three studies targeted family caregivers of a relative with dementia and one of them exclusively female carers. One effective trial targeted spousal primary caregiver of patients with Alzheimer's disease, residing together NH: 5 trials. Two trials were ineffective. Three trials were effective and targeted: all residents without a severe impairment, all interviewable residents and residents with depressive symptomatology. H: One effective trial targeting hospitalised patients with cancer, generally in advanced stages, with significant symptoms of anxiety and/or depression
Mortality Objective measure	6 studies (ID: 4, 9, 13, 18, 29, 34) Aggregated samples: 1433 2 to 12 months long	1/6 existing SC 5/6 new SC 1/6 structural SC 6/6 cognitive SC 5/6 bonding SC 3/6 linking SC 1/6 bridging SC	+ve: 1 (16.7%) -ve: 0 (0%) NS: 5 (83.3%) +ve: 1 low	All: 2 low 2 unclear 2 high +ve: 1 low	Generally ineffective	CD: 5 studies. Four ineffective trials targeted: participants with osteoarthritis and with heart failure, family carers of people with dementia and patients and their spouses who had recently received diagnosis of dementia. One effective trial targeted people feeling lonely NH: 1 ineffective trial

ID refers to the identification number of each study as presented in online supplementary appendix 2.

+ve: number and percentage of studies with statistically significant effects (p<0.05) favouring the social capital intervention;

-ve: number and percentage of studies with statistically significant effects (p<0.05) favouring the control group (or a non-social capital based intervention).

NS: number and percentage of studies with results statistically nonsignificant.

'No effect' if any included study favoured the intervention; 'generally ineffective' when up to 33% of the studies favoured the intervention; 'generally effective' when over 66% of the studies showed a favourable effect.

CD, community-dwelling; H, hospital; NH, nursing home; SC, social capital.

on specific social capital components, which show positive trends but inconsistent results and highlight the need for higher quality research.<sup>21–27</sup>

However, our review has several limitations; most of them linked to limitations of the available evidence.

The majority of studies were judged to be at high or unclear risk of bias. In addition to the lack of reporting of relevant details on methods and the limited scope for blinding, attrition was a high source of bias and intention-to-treat analysis was underused.

We applied the PROGRESS Plus framework.<sup>32</sup> Although women were the main target, gender implications were seldom reported in background, intervention design and discussion. Many studies mentioned socio-economic status but heterogeneously. Disability and cognitive decline were frequently exclusion criteria. Several trials included minor ethnicities but rarely focused on minorities and seldom reported specific implications. Sexual orientation was not reported, despite its major consequences on support networks among older people.<sup>56</sup> Moreover, contextual aspects were under-reported.

At review level, we managed following complexity sources: interventions with multiple components, relevance of contextual factors on implementation and outcomes, multiple outcomes of interest, and difficulty in locating, appraising and synthesising the evidence to answer the research question. The search strategy was complex and exhaustive and retrieved a high number of documents. Nevertheless, inconsistently labelled and poorly defined interventions might be difficult to locate. Furthermore, we developed a logic model to guide the review.

As in similar reviews,<sup>22 24</sup> we could not perform a meta-analysis, or compare effect sizes and analyse whether the effects were clinically meaningful due to the mentioned diversity.<sup>35</sup> Therefore, the standardised procedures from the CADTH based on vote-counting and decision rules were the best option as narrative evidence synthesis that allows to assess impact and interpret data in reviews with multiple outcomes and high diversity.<sup>43</sup> Moreover, we combined sample sizes to weight results with a descriptive purpose. Nevertheless, a high number of pilot and small studies were probably underpowered to detect effects.

We applied a broad scope on health and thus identified a wide variety of subjective and objective measures such as physical and cognitive performance, blood and MRI parameters, health service use from medical records and data from mortality registers. Nevertheless, all objective outcomes except mortality were insufficiently reported to interpret effectiveness.

In this review, we addressed the heterogeneity of outcomes and focused on social capital as a whole including all components under the same concept. Moreover, we explored and described the frequency with which the interventions addressed the different directions and dimensions of social capital and to which outcomes were associated.

### Interpretation of study results

Our results provide preliminary evidence that social capital might promote general health. However, they require cautious interpretation due to the high diversity and low quality of the trials. Impact on mood, loneliness and mortality may call for specific intervention designs. Indeed, social capital interventions seem to increase general health in lonely people although they do not relieve their loneliness.

Moreover, positive effects were reported in different contexts, participants' characteristics and intervention designs and in a wide variety of subjective and objective outcomes. Therefore,

our review supports the potential of social capital to reach comprehensive health effects.

In addition, in our logic model we outlined four pathways that link social capital with health and these physiological, psychological, behavioural and instrumental intermediate outcomes were reported by some studies.

Specific trials showed less physiological damage through improvements on glycated haemoglobin, blood pressure, weight, BMI, waist circumference and percentage body fat.<sup>57–59</sup>

Psychological improvements were supported by trials with impact on self-esteem<sup>58</sup> and caregiver burden,<sup>60–63</sup> but effects on self-efficacy and mastery were not achieved.<sup>64 65</sup>

Behavioural changes were observed only regarding physical activity.<sup>59 66 67</sup>

Instrumental changes in terms of better health access were supported by one trial that successfully increased participation in cardiac rehabilitation.<sup>68</sup>

However, these intermediate outcomes were seldom analysed as mediators in the original trials,<sup>69</sup> nor were their potentially mutual effects addressed.

### Implications for practice, policy and research

First, evidence-informed policy has to be nurtured by research, but especially in the social capital field, health and social policy should be committed to contributing to the limited evidence by evaluating existing programmes, involving especially the third sector.

Furthermore, social capital interventions might contribute to reduce health inequalities by addressing social determinants of health.<sup>70</sup> Accordingly, we encourage an inclusive approach when improving social capital by considering the disadvantage categories of the PROGRESS Plus framework in the design, evaluation and reporting.

Trials need to be conducted and reported applying quality standards,<sup>71</sup> and need to use standardised health outcome measures including objective ones. Moreover, social capital interventions should be addressed in the frame of complex interventions.<sup>29 72 73</sup>

Further research should gain specific knowledge on subgroups of older people (eg, nursing home residents, caregivers and those suffering from chronic conditions).<sup>28</sup> Loneliness, as a condition to target and as an outcome, regards special attention. A further focus should be on whether and, if so, how interventions based on different social capital dimensions and directions achieve differential health effects and contrast whether and how social outcomes mediate health changes.<sup>25</sup> Moreover, the role of the length and intensity of the intervention and the type of relationship between the intervention and health effects (eg, linear, threshold) should be clarified. It is also important to address how to increase adherence and reduce attrition and how to establish mechanisms to detect, solve and report adverse events. Furthermore, the health impact of social capital interventions conducted at community level remains unknown,<sup>74</sup> as well as how to tailor these interventions to different individual needs, cultures (eg, family-based vs individualistic) and welfare systems.<sup>6</sup>

Remarkably, these and further findings on effectiveness of social capital interventions should be carefully considered always in the frame of the specific purpose and value of the intervention. For instance, impact on mental health will be key factor on an intervention aimed at preventing depression, while lower glycated haemoglobin might be relevant when improving diabetes self-management.

Finally, as a next step, a taxonomy is being developed based on the results of the systematic review, aimed at structuring the diversity of social capital interventions to guide further research,



policy and practice and thus potentially reach comprehensive health effects across older adult populations and contexts.

### What is already known on this subject?

- Numerous observational studies have shown that social capital resources are important for the understanding of health and well-being and isolated intervention studies based on social capital have achieved favourable results on health among older people. However, no systematic review of controlled trials has previously assessed the health impact of social capital interventions on older people.

### What this study adds?

- Our findings highlight the lack of evidence, high clinical diversity between trials and the low quality, while suggesting the potential of social capital to impact health, specially quality of life, well-being and self-perceived health in older adults. This review contributes towards building an evidence base for social capital interventions from a public health perspective to advance in the health and social care systems addressing social capital as a relevant protective health factor.

**Twitter** Follow Laura Coll-Planas at @EstudiAequalis and Rosa Monteserín at @rmonterin

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### **ARTICLE 3:**

#### **PROMOTING SOCIAL CAPITAL TO ALLEVIATE LONELINESS AND IMPROVE HEALTH AMONG OLDER PEOPLE IN SPAIN.**

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## Promoting social capital to alleviate loneliness and improve health among older people in Spain

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### What is known about this topic

- Loneliness is more prevalent in Southern European countries than in Northern European countries.
- Loneliness is a risk factor for negative health outcomes, whereas social capital is protective.
- Loneliness is modifiable through psychosocial interventions, especially those based on social activity groups, which actively involve participants.

### What this paper adds

- Promoting social capital is a promising intervention strategy to alleviate loneliness among older people.
- Social participation may increase through the use of a behaviour change model and health and social care co-ordination involving community assets and older volunteers as gatekeepers.
- Professionals, community centres and volunteers can support the long-term continuity of new social contacts and participation.

### Abstract

Loneliness is especially frequent among older people in Southern Europe. Furthermore, promoting social capital to tackle loneliness and its health effects is an understudied intervention strategy. Therefore, a complex intervention was piloted in Spain in a pre-post study with a 2-year follow-up. Its aims were to explore the feasibility of the intervention and its short- and long-term effects. It was conducted in one mixed rural-urban and two urban areas of diverse socioeconomic levels from 2011 to 2012. The intervention framework was based on social capital theory applying a behaviour change model and care co-ordination. The intervention comprised: (i) a co-ordinated action aimed at building a network between primary healthcare centres and community assets in the neighbourhood and (ii) a group-based programme, which promoted social capital among lonely older people, especially social support and participation. Older people active in senior centres volunteered as gatekeepers. The main outcome domain was loneliness. Secondary outcome domains were participation, social support, self-perceived health, quality of life, depressive symptoms and use of health resources. Pre-post changes were assessed with *t*-test, Wilcoxon signed-rank test and McNemar's test. Differences between the three time points were assessed with a one-way ANOVA with repeated measures. Social workers and nurses were successfully involved as group leaders, 10 volunteers took part and 38 participants were included. After the intervention, loneliness decreased while social participation and support significantly increased. Furthermore, the number of visits to nurses increased. Exactly 65.8% of the participants built social contacts within the group and 47.4% became engaged in new activities. Two years later, social effects were maintained and depressive symptoms had decreased. Exactly 44.7% of the participants continued to be in contact with at least one person from the group and 39.5% continued participating. The intervention contributes a novel and feasible social capital-based approach for alleviating loneliness among older adults while prompting meaningful changes in their lives.

**Keywords:** aged, psychosocial intervention, loneliness, social capital, social participation, social support



## Background

### The need to alleviate loneliness

Loneliness is a negative feeling that occurs when a person's social needs do not correspond, either in quantity or in quality, to their actual social relationships (Peplau & Perlman 1982).

Loneliness increases with age. Thus, the current ageing trend entails a higher number of older people suffering from loneliness. However, the nation in which one lives has a greater impact than age on loneliness (Yang & Victor 2011). Longitudinal studies on loneliness are limited to specific regions in Nordic countries and use different measurements. Therefore, repeated European cross-sectional surveys such as the SHARE study provide reliable cross-national comparative data. According to this study, the prevalence of loneliness (i.e. feeling lonely all or most of the time) among people over 65 varies in Europe from 4% in Switzerland to 20% in Greece, with Spain at 14% (Sundström *et al.* 2009). This confirms a north-south gradient, with loneliness being higher in southern countries, contrary to that generally assumed. This gradient appears to be related to poorer social integration and participation and higher expectations of family members in southern countries compared to Northern European countries (van Tilburg *et al.* 1998, Dykstra 2009, Litwin 2010). Moreover, a high proportion of older people and women, unfavourable socioeconomic circumstances and poor health in southern countries such as Spain also contribute to the higher prevalence (Victor *et al.* 2005, Fokkema *et al.* 2012). However, there is a lack of intervention studies on loneliness in Mediterranean countries, which apply a country-tailored approach.

Furthermore, although differences in loneliness between urban and rural areas seem to disappear when taking gender, income and education into account (Routasalo *et al.* 2006), the relevance of geographical contexts when intervening in loneliness is understudied.

Loneliness and health are clearly inter-related. Well-established risk factors for loneliness are poor self-assessed health, depression, functional dependence, low self-efficacy, reduced social network and recent bereavement (Fry & Debats 2002, Victor *et al.* 2005, Cattan *et al.* 2011, Prieto-Flores *et al.* 2011). At the same time, loneliness is a known risk factor for health outcomes such as depression, dementia and mortality (Hawkey & Cacioppo 2010, Tilvis *et al.* 2011). Moreover, loneliness is associated with an increased use of health services (Ellaway *et al.* 1999, Geller *et al.* 1999).

Systematic reviews on loneliness interventions targeting older people have found that the most effective aspects are the following: being group-based and theory-driven, with educational input or supportive activities; targeting specific groups of older adults, including training and support for group facilitators; encouraging older adults' participation in decision-making; involving community resources; and building community capacity (Findlay 2003, Cattan *et al.* 2005, Dickens *et al.* 2011). However, according to systematic reviews and latest trials, loneliness interventions seldom include physical and mental health outcomes. Studies that do so used heterogeneous health measures and yield both positive and negative results (Pitkala *et al.* 2009, 2011, Dickens *et al.* 2011). Thus, the health effects of loneliness interventions are to date promising but inconclusive.

### The role of social capital to alleviate loneliness

Recently, the concept of social capital has become prominent in public health research. This interest widens the focus from the individual level to socio-environmental factors at neighbourhood and community levels. Likewise, the Active Ageing paradigm highlights the importance of contextual factors such as social resources in the ageing process and encourages the fostering of social networks for ageing people (World Health Organization 2002).

Social resources, such as social capital, have been linked to the absence of loneliness among the general population (Islam *et al.* 2006, Kim *et al.* 2008) as well as among older people (Routasalo *et al.* 2006, Nyqvist *et al.* 2013a).

Several definitions of social capital have been proposed (Moore *et al.* 2006) but two main conceptualisations prevail. While the social cohesion approach refers to social capital as a public good based on community activities (Weil & Putnam 1994), the social network approach understands that social networks have different values for different individuals (Coleman 1988). From an ageing perspective, Putman's definition of social capital, which is the most popular in health research, has been problematised and adapted to older age (Nyqvist & Forsman 2015). During ageing, health and functional ability deteriorate, limiting the ways in which older people participate and engage in community life. Therefore, Nyqvist *et al.* (2013a) proposed placing more relevance on the interaction between individuals at the micro level. According to them, social capital is an umbrella concept that involves individual (family and friends) and collective social resources (e.g. neighbourhoods), their structural (e.g. social networks,

social contacts and participation) and cognitive aspects (e.g. social support and sense of belonging) (Forsman *et al.* 2011; Nyqvist *et al.* 2013c). Moreover, according to the directions of social ties, social capital is defined as bonding, bridging or linking.

It should be highlighted that social capital as a whole and its different components have protective health effects (Hawe & Shiell 2000, Ertel *et al.* 2009, Holt-Lunstad *et al.* 2010, Holmes & Joseph 2011, Eisele *et al.* 2012; Rocco & Suhrcke 2012, Nyqvist *et al.* 2013b,c, Andrew & Keefe 2014). Among older adults, social capital is related to better mental well-being and increased self-perceived health (Schultz *et al.* 2008; Nyqvist *et al.* 2013b). Furthermore, social capital appears to be a mediator between social determinants and negative health outcomes (Kawachi *et al.* 1999, Bøen *et al.* 2012).

In particular, two components of social capital are crucial to tackle loneliness among older people: social support as a cognitive resource and social participation as a structural one (Routasalo *et al.* 2006, Savikko *et al.* 2010, Litwin & Shiovitz-Ezra 2011, Stephens *et al.* 2011, Nyqvist *et al.* 2013a). Indeed, a recent meta-analysis on loneliness interventions across the lifespan identified and proved effective four intervention strategies: improving social skills, enhancing social support, increasing opportunities for social interaction and social cognitive training (Masi *et al.* 2011). However, in trials targeting older people, increasing social support was the most widely applied strategy and the only effective one. Furthermore, interventions rarely tried to increase opportunities for social interaction and none applied more than one strategy (Masi *et al.* 2011).

Social participation, defined as social engagement, interacting or doing activities with others, entails behavioural challenges (Levasseur *et al.* 2010). Thus, to successfully increase social participation, professionals must foster a behaviour change towards a more active lifestyle. The most commonly applied theory to promote healthier lifestyles is the social cognitive theory, focused on intra- and interpersonal processes (Bandura 1977). Additionally, social ecological models provide a comprehensive framework which accounts for the organisational, community and public policy influences (Bronfenbrenner 1994, Stokols 1996, Michie *et al.* 2011).

At present, in primary healthcare, loneliness is not addressed as a health-related condition. Nevertheless, current health and social care policies advocate care co-ordination, i.e. inter-professional working between health and social care professionals to respond to the complex and multiple needs of older people. This proves to be a promising approach to address loneli-

ness (Dowling *et al.* 2004, Øvretveit 2011, Petch *et al.* 2013, Van Orden *et al.* 2013, Ledesma 2014).

In summary, social capital theory could drive empirical research to target loneliness and its complex link with health (Nummela *et al.* 2009, Hunter *et al.* 2011, Taube *et al.* 2015).

Therefore, a complex intervention was designed to alleviate loneliness among community-dwelling older people in primary care by promoting social capital in their social environment.

### Aims

The *first* aim was to explore the feasibility of the intervention in mixed rural–urban and urban areas of diverse socioeconomic levels.

The *second* aim was to assess the immediate and long-term effects of this intervention among older participants on: (i) loneliness; (ii) structural and cognitive aspects of individual social capital (i.e. participation and social support); (iii) perceived health, health-related quality of life, depressive symptoms and the use of anxiolytics and antidepressants; and (iv) the use of health services.

### Methods

#### Study design

This was a multi-centred and non-controlled exploratory complex intervention study with a pre–post design, based on a community and psychosocial intervention with a 2-year follow-up. It was conceived as a first step prior to a definitive trial. Quantitative and qualitative methodologies were applied with a complementary purpose. The goal of this article is to present the quantitative results.

#### Study population

Three primary healthcare centres in two municipalities in Catalonia (Spain) were selected by convenience to implement the intervention in a mixed rural–urban context with a medium socioeconomic level (zone A) and an urban context with a low and medium socioeconomic level (zones B and C respectively). The mixed rural–urban area had 16,000 inhabitants, while the urban area had 1,600,000.

The participants' recruitment strategy for the group-based programme was pragmatic. Professionals could refer patients by contacting them actively or by asking their patients about loneliness during routine visits. All professionals, i.e. general practitioners, nurses and social workers, were encouraged to use

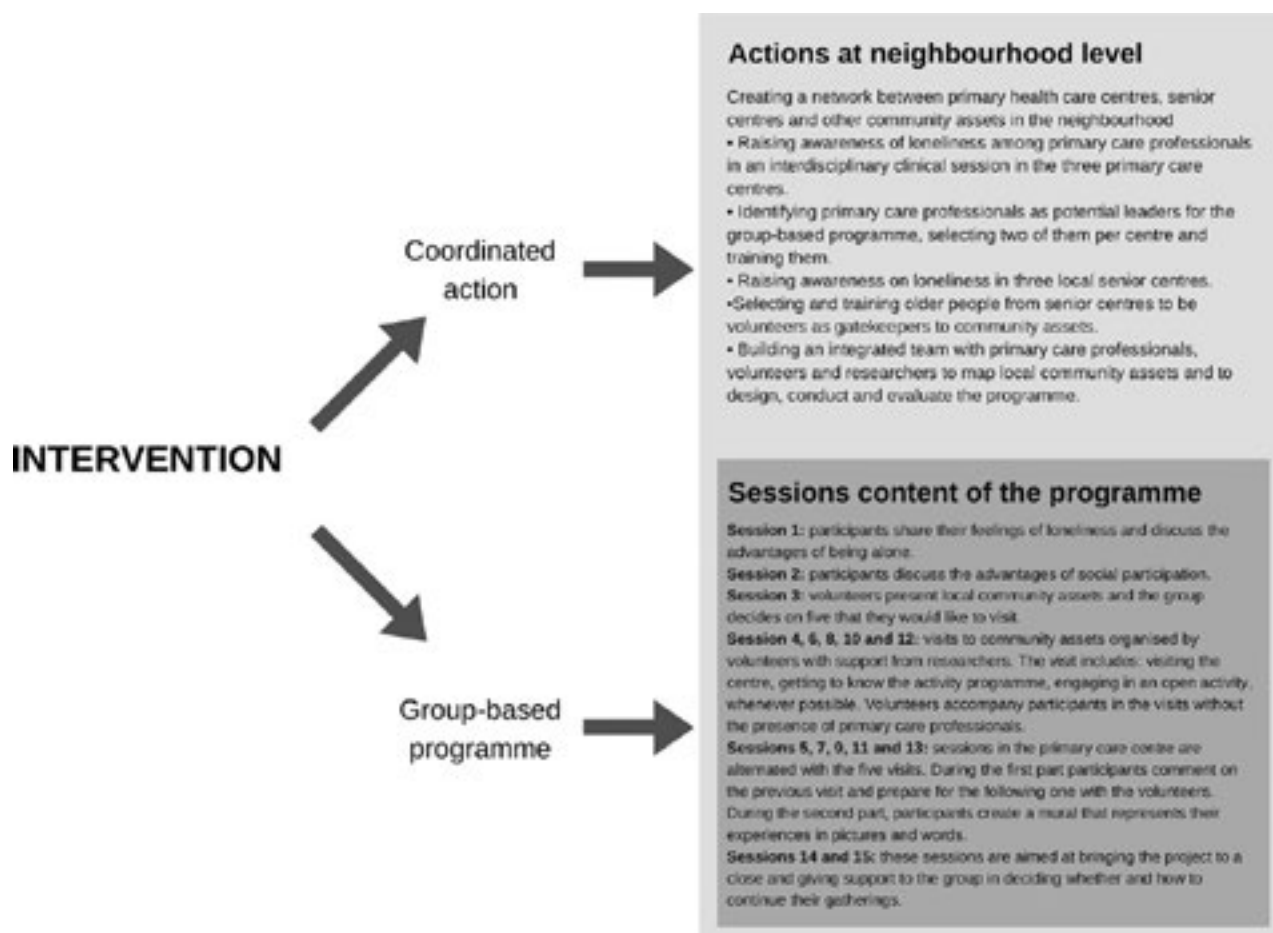
the programme as an opportunity to refer patients suffering from loneliness, as they usually refer patients to specialists or specific interventions. Participants were also self-referred through advertising in the centres. A nurse ensured that those who volunteered to participate met the following eligibility criteria: (i) community-dwelling aged  $\geq 60$ ; (ii) feels lonely 'sometimes, often or always' in response to the question 'Do you feel lonely?'; (iii) can walk to the centre independently; (iv) no cognitive decline; (v) able to participate in a group dynamic; and (vii) does not participate in regular social activities.

### Intervention

The intervention consisted of a co-ordinated action and a group-based programme. The co-ordinated action was aimed at building and strengthening the network between primary healthcare centres, senior centres and other community assets in the neighbourhood where older people could participate in activi-

ties. Moreover, older people active in local senior centres were recruited and trained as volunteers. Their goal as gatekeepers was to introduce lonely older people from the programme to community assets. The group-based programme was conducted from January to June 2012 applying an intervention guide (Coll-Planas & Gómez 2012). The group met for 1.5 hours a week for 15 weeks. Figure 1 shows the actions comprised in both the intervention components.

The overall intervention framework was based on the social cohesion approach of social capital theory emphasising the interaction between the older persons and their social environment (Weil & Putnam 1994). Specifically, the social capital operationalisation from Nyqvist was used to develop a new complex loneliness intervention considering the structural, cognitive, bonding, bridging and linking elements related to loneliness at individual and neighbourhood levels (Nyqvist & Forsman 2015). The study assumes that social capital is acquired through involvement in



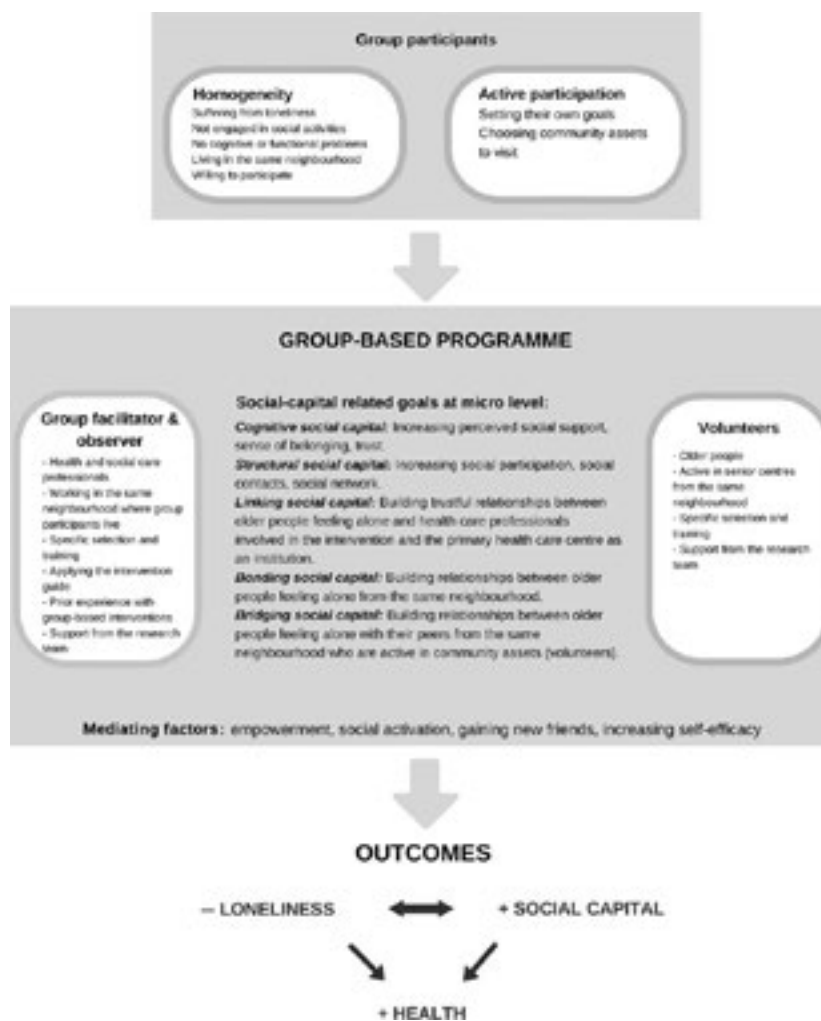
**Figure 1** Actions at neighbourhood level and sessions content of the group-based programme.

social activities and that structural and cognitive aspects of social capital (i.e. social participation and social support) reinforce each other. Moreover, strategies based on a behaviour change model and care co-ordination were integrated. Specifically, the programme was initially theory-driven based on the social cognitive theory, complemented by the socio-ecological model, from an empowerment perspective (Bandura 1977, Lord & Hutchison 1993, Michie *et al.* 2008, Braungart 2011). The model for our group-based programme was designed considering previous effective models (Pitkala *et al.* 2009, Savikko *et al.* 2010) (see Figure 2). It was further developed with a practical orientation by professionals from the centres.

### Measurements and data collection techniques

Using a semi-structured questionnaire, the professionals involved were asked about their background and experience in conducting groups. Likewise, volunteers were asked about socio-demographic data, their trajectory of volunteering and their motivation for getting involved in the project.

Participant socio-demographic data, chronic morbidity and prescribed medication were recorded for descriptive purposes. Impact evaluation comprised the baseline and follow-up assessment, which consisted of validated interviewer-administered questionnaires regarding psychosocial aspects and health status.



**Figure 2** Model of the group-based programme. Elements identified as crucial were predetermined such as characteristics of participants, professionals and volunteers, group activities and group features. Social capital-related goals of the programme were defined. Mediating factors were proposed to achieve the goal of alleviating loneliness by increasing social capital and, consequently, ameliorate health. The intervention model was adapted from Pitkala *et al.* (2009) and Savikko *et al.* (2010).

Loneliness intensity was the primary outcome domain assessed by the 11-item De Jong Gierveld Loneliness Scale (De Jong Gierveld & Van Tilburg 2010). The frequency of loneliness was assessed with a single-item self-rating scale. The impact on social support, as a cognitive aspect of individual social capital, was assessed using the Social Resources Inventory in Older Adults (Veiga 1987). Likewise, the impact on social participation, as a structural aspect of individual social capital, was assessed using the Subjective Social Participation Index (Rubio *et al.* 2009). Further outcome measures were: self-perceived health and health-related quality of life [12-Item Short-Form Health Survey (SF-12)] (Ware *et al.* 1996), depressive symptomatology (Geriatric Depression Scale-5) (Valle *et al.* 2001), and current use of anxiolytics and antidepressants. The use of health services was retrieved from computerised medical records and included consultations with a general practitioner, visits to nurses and social workers in primary care, visits to the emergency department and hospital admissions 12 months prior to the programme, just after it and 6 months later. Participants were also asked about the number of social contacts established within the group, and the number and type of new activities in which they had become regularly engaged.

Two years after finishing the intervention, long-term effects were assessed through telephone interviews, employing the same questionnaire. In addition, using a semi-structured questionnaire, participants were asked about the number of social contacts maintained within the group and how they had stayed in contact, the number and type of activities in which they continued to be engaged and why they had continued them.

The study protocol followed the principles of the Declaration of Helsinki (World Medical Association). The ethics committees from UAB and IDIAP approved the protocol. Participants gave their informed consent.

### Statistical analysis

According to the recommendations for exploratory studies, a sample of 20–25 was estimated as adequate (Hertzog 2008). Considering the goal of piloting the intervention in three different areas, three groups were planned. Accounting for a dropout rate of 20%, the estimated initial recruitment was 15 persons per group to achieve a final sample of 36 participants, 12 per group.

To assess pre–post changes, the totality of participants was compared before and after the intervention regarding the impact indicators. Ordinal and numeric variables with a normal distribution (Kolmogorov–

Smirnov test with  $P \geq 0.05$ ) were analysed with a *t*-test to compare the means in paired samples (repeated measures). In variables without a normal distribution, the Wilcoxon signed-rank test was applied. String variables were assessed using McNemar's test. A one-way ANOVA with repeated measures was applied to assess differences between baseline, after the intervention and 2 years later. The level of significance was 0.05. Analyses were performed with the statistical programme IBM SPSS Statistics® 21.

### Results

Health and social care professionals were successfully identified; all were women. Specific adaptations had to be made locally. In zone A, the group facilitator was a social worker experienced in groups, and the observer was a primary healthcare nurse. In zone B, two primary healthcare social workers were involved. In zone C, a nurse facilitated the group while a social worker observed.

After the fruitful presentations conducted in each local senior centre, overall, 19 older people wished to participate and of these, 10 became volunteers. The reason for rejection was time availability. Zone A had four volunteers, while zones B and C each had three. The volunteers ranged in age from 67 to 82, and nine were women. They had two different profiles: the younger profile had recently retired and started becoming involved in senior centres, while the older profile had a long trajectory of such engagement. All volunteers reported being motivated to help lonely older people in their neighbourhood by introducing them to the community assets.

In the three zones, the professionals favourably endorsed the group-based programme and had applied the intervention guide smoothly. Three groups were successfully created with a total of 38 persons. The group in zone A began with 11 participants, zone B with 16 and zone C with 11. Further baseline characteristics are shown in Table 1. The flow chart of participants is shown in Figure 3.

Of the 38 participants, 68% ( $n = 26$ ) completed the programme (8 in zone A, 12 in zone B and 6 in zone C). Six persons discontinued the intervention due to health problems, i.e. depression ( $n = 2$ ), hearing impairment, mobility problems, falling and initial cognitive decline. Three persons withdrew due to programme-related reasons: in one case, the group purpose differed from that expected (a recently widowed man looking for a new partner), one person felt uncomfortable, and the third case was a woman from the mixed rural–urban zone who did not wish to

**Table 1** Participants' characteristics at the baseline

	Intervention group ( <i>n</i> = 38)
<b>Demographic characteristics</b>	
Women, % ( <i>n</i> )	95 (36)
Age, in years, mean (SD) (range)	77.24 (5.81) (63–89)
Education level, % ( <i>n</i> ) (without studies or only primary studies)	82 (31)
Born in the same city where currently living, % ( <i>n</i> )	21 (8)
<b>Marital status</b>	
Widow, % ( <i>n</i> )	90 (34)
Years of widowhood, mean (SD) (range)	10.43 (10.77) (0–44)
Living alone, % ( <i>n</i> )	84 (32)
<b>Psychosocial characteristics</b>	
Feeling lonely, % ( <i>n</i> )	
Sometimes	82 (31)
Often or always	18 (7)
Gierveld Loneliness Scale, in categories*, % ( <i>n</i> )	
Not lonely	13 (5)
Moderate	84 (32)
Severe and very severe	3 (1)
<b>Health status</b>	
Self-perceived health, % ( <i>n</i> )	
Excellent or very good	3 (1)
Good	34 (13)
Regular	50 (19)
Poor	13 (5)
Multimorbidity ( $\geq 4$ chronic conditions), % ( <i>n</i> )	79 (30)
Number of chronic medication, mean (SD) (range)	
Anxiolytic medication, % ( <i>n</i> )	49 (18)
Antidepressant medication, % ( <i>n</i> )	43 (16)
Use of health services (last 12 months)	
Number of visits to the GP, mean (SD) (range)	
Number of visits to the GP, mean (SD) (range)	10.51 (7.88) (2–43)
Number of visits to the nurse, mean (SD) (range)	
Number of visits to the nurse, mean (SD) (range)	6.65 (7.71) (0–36)
Number of visits to social work, mean (SD) (range)	
Number of visits to social work, mean (SD) (range)	1.04 (1.95) (0–10)

SD, standard deviation; GP, general practitioner.

\*Gierveld Loneliness Scale was categorised as follows: 0–2 = not lonely, 3–8 = moderate, 9–10 = severe and 11 = very severe.

share her feelings in a place where people might know her and the people she would mention. Moreover, one person discontinued for family reasons, one died and one left for unknown reasons. Throughout the intervention and the follow-up, three participants died, one per group. The causes were independent of the study.

Each group conducted five visits to local community assets. The following community assets were visited: seven senior centres, four libraries, one

neighbourhood association, one museum, one community centre and one cultural centre. During the visits, participants engaged in 11 activities: three storytelling sessions, two regular informal gatherings, one workshop on handicraft, one film, one literature awards ceremony, two time-banking presentations and one conference on health.

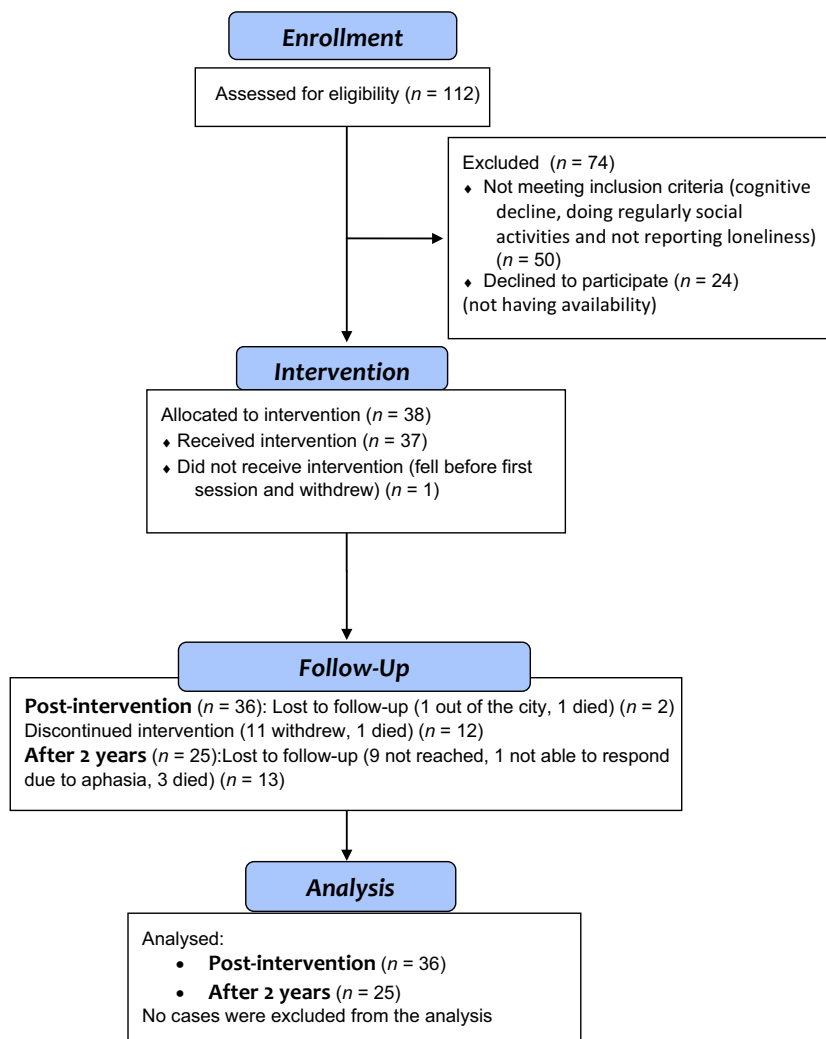
Table 2 shows the main pre–post results on impact indicators. Positive effects were found on loneliness, social support and participation. Concerning immediate health impacts, other than an increase in visits to nurses, no significant impact was found on health-related quality of life, either on the physical or the mental component of the SF-12. No significant change was seen in visits to the emergency department or in hospitalisation (results not shown).

The long-term impact evaluation showed that loneliness had reduced significantly (mean: 0.46, SD: 0.93,  $P < 0.001$ ), as had emotional (mean: 0.21, SD: 0.66,  $P < 0.001$ ) and social loneliness (mean: 0.25, SD: 0.53,  $P < 0.001$ ). Social participation had significantly increased (mean: 2.04, SD: 1.94,  $P < 0.001$ ), whereas depressive symptoms had significantly decreased (mean: 1.17, SD: 1.15,  $P = 0.032$ ). However, self-rated health did not show significant changes (mean: 3.83, SD: 0.92,  $P = 0.33$ ).

Of the 26 participants who finished the programme, 25 remained in contact with at least one person from the group, and 18 were engaged in activities. Of all the initial participants, 65.8% had built social contacts within the group, and 44.7% maintained contact with at least one person 2 years later. It is noteworthy that 17 participants had contact with three or more people. The mean number of contacts reduced from 3.4 (SD: 2.1) just after the intervention to 2.3 (SD: 1.9) at follow-up. 47.4% of the participants engaged in new activities just after the intervention, and 39.5% continued participating 2 years later.

Two years after the intervention, participants reported diverse forms of continuing their contacts. In zone A, the main bonding elements between participants were activities promoted by the Social Services, in which they were mainly involved as volunteers. In zone B, volunteers were the bonding element: after some informal gatherings, they established a formal memory training activity. In zone C, participants were mainly connected through the senior centre.

Participants reported that they continued the activities because they experienced satisfaction and well-being, their needs were being met (e.g. memory training eased their concern of losing their memory), they were participating with a friend, and they had established and maintained social contacts.



**Figure 3** Flow chart of participants during the study.

## Discussion

This study provides a novel approach to address loneliness by means of promoting social capital.

### Feasibility of the intervention

The co-ordinated action was feasible, and professionals and volunteers were successfully involved. As evidence of care co-ordination is based mainly on disease-specific programmes, our study makes valuable contributions to the practice of care co-ordination from a preventive and psychosocial perspective (Trivedi *et al.* 2013).

The programme was feasible in the three zones. Our findings provide some suggestions regarding the relevance of urban and rural contexts when intervening in loneliness in Spain, such as the need to work

on confidentiality issues, especially in more rural areas. However, the differential findings observed in the zones cannot be attributed to the geographical and socioeconomic contexts.

The proportion of women was very high. While similar studies focusing on loneliness had a lower proportion of women (Pitkala *et al.* 2009), intervention studies aimed at boosting social capital had similar data (Fried *et al.* 2004), and also other group interventions in primary care in our country (Casañas Sánchez *et al.* 2009). This can be explained by the gender composition of the Spanish older population, by the fact that being female is a risk factor for loneliness, that women go to primary care more frequently and tend to express their loneliness more than men (Dykstra 2009). Our findings suggest that older men and women in Spain get involved in loneliness interventions with different goals. Nevertheless, the high proportion of

**Table 2** Results pre- and post-intervention

	Pre-test	Post-test	Statistic*	Degrees of freedom, confidence interval, effect size <sup>†</sup>	P-value
<b>Psychosocial variables</b>					
Feeling lonely, mean (SD)	2.18 (0.39)	1.91 (0.69)	-2.065	<i>r</i> : -0.365	0.039 <sup>‡,‡‡</sup>
Gierveld Loneliness Scale <sup>¶</sup> , mean (SD)	4.55 (2.05)	2.84 (2.33)	-3.645	<i>r</i> : 0.591	<0.001 <sup>‡,‡‡</sup>
Emotional loneliness subscale <sup>¶</sup> , mean (SD)	2.97 (1.52)	1.97 (1.70)	-3.068	<i>r</i> : -0.498	0.002 <sup>‡,‡‡</sup>
Social loneliness subscale <sup>¶</sup> , mean (SD)	1.58 (1.00)	0.87 (1.09)	-3.267	<i>r</i> : -0.530	0.001 <sup>‡,‡‡</sup>
Relationship with friends (Social Resources Inventory in Older Adults), % ( <i>n</i> )	73.0 ( <i>n</i> = 27)	93.9 ( <i>n</i> = 31)	2.45	CI: 0.337-0.038	0.031 <sup>‡,§§</sup>
Subjective Social Participation Index, mean** (SD)	4.54 (1.57)	3.64 (1.71)	3.491	df: 31; CI: 0.442-1.68	0.001 <sup>‡,††</sup>
Number of weekly outings, mean (SD)	7.51 (3.22)	9.70 (5.96)	-2.388	<i>r</i> : -0.422	0.017 <sup>‡,‡‡</sup>
	Pre-test ( <i>n</i> = 38)	Post-test ( <i>n</i> = 36)	Statistic*	Degrees of freedom, confidence interval, effect size <sup>†</sup>	P-value
<b>Health status and use of health services</b>					
Self-perceived health, mean (SD)	3.74 (0.72)	3.94 (0.89)	-1.414	<i>r</i> : -0.246	0.16 <sup>‡‡</sup>
Depression scale GDS-5, mean (SD)	2.05 (1.47)	2.12 (1.58)	-0.297	df: 31; CI: -0.366 to 0.491	0.77 <sup>††</sup>
Use of anxiolytics, % ( <i>n</i> )	49 ( <i>n</i> = 18)	47 ( <i>n</i> = 17)	0	CI: 0	1.000 <sup>§§</sup>
Use of antidepressants, % ( <i>n</i> )	43 ( <i>n</i> = 16)	42 ( <i>n</i> = 15)	-0.289	CI: 0.284-0.660	1.000 <sup>§§</sup>
Number of visits to the GP (last 12 months), mean (SD)	10.51 (7.88)	10.97 (5.72)	-0.538	df: 35; CI: -1.851 to 3.184	0.59 <sup>††</sup>
Number of visits to the nurse (last 12 months), mean (SD)	6.65 (7.71)	10.42 (11.24)	-2.802	<i>r</i> : -0.467	0.005 <sup>§,‡‡</sup>
Number of visits to social worker (last 12 months), mean (SD)	1.04 (1.95)	1.22 (1.73)	-0.106	<i>r</i> : -0.022	0.91 <sup>‡‡</sup>

SD, standard deviation.

\*Degrees of freedom (df) and 95% confidence interval (CI) are presented when *t*-test applies; *r* (effect size) is presented when Wilcoxon signed-rank test applies.

<sup>†</sup>*t* Statistic is presented when *t*-test applies. *Z* statistic is presented when Wilcoxon signed-rank or McNemar's test apply.

<sup>‡</sup>Changes were in terms of amelioration.

<sup>§</sup>Changes were in terms of worsening.

<sup>¶</sup>Eleven-item De Jong Gierveld Loneliness Scale: global score 0-11, subscales for emotional loneliness score 0-6 and social loneliness score 0-5. Higher scores indicate higher levels of loneliness (De Jong Gierveld & Van Tilburg 2010).

<sup>\*\*</sup>Subjective Social Participation Index scale 0-8. Lower scores indicate a higher level of participation (Rubio *et al.* 2009).

<sup>††</sup>*t*-test for paired samples.

<sup>‡‡</sup>Wilcoxon signed-rank test for paired samples.

<sup>§§</sup>McNemar's test.

females could have lowered the intervention effect, as studies with more women seem to have smaller reductions in loneliness (Masi *et al.* 2011).

### Effects on loneliness and individual social capital

Loneliness decreased in frequency and intensity. As participants presented non-modifiable risk factors for loneliness (e.g. being female, widowhood and low education level), loneliness was successfully lowered probably because the intervention focused on modifiable components of social capital. Improvements in social and emotional loneliness suggest the possible efficacy of the intervention in building new and effective

friendships. The intervention might also have triggered a change in their perception of social support. Besides, programme features from our model might have been effective.

Social support built within the group has helped to start and continue activities together. Thus, intervention components promoting cognitive and structural social capital elements could have reinforced each other. Furthermore, the long-term maintenance of social contacts and new activities suggests that a meaningful lifestyle change was successfully achieved.

Our study suggests the relevance of professionals, volunteers and community assets as key bonding elements for long-term contacts. However, it remains a



research challenge to understand how to achieve meaningful and lasting changes in lonely people's lives.

### Health effects

No immediate health effects were found. This could be explained by the reduced sample size, or by the programme's design, implementation or duration. However, these characteristics enabled us to detect significant immediate effects on loneliness, social support and participation, and process indicators showed optimal implementation (results not shown). Additionally, health effects could have gone undetected by the measurement instruments applied. Nevertheless, these findings are consistent with other intervention studies: effects on social well-being are generally achieved but rarely on physical health (Fried *et al.* 2004, Ertel *et al.* 2009, Pitkala *et al.* 2009, 2011, Dickens *et al.* 2011). Moreover, participants' low education level and bad self-perceived health suggest the appropriateness of a social capital-based intervention, as increasing social capital potentially contributes to health equality (Hunter *et al.* 2011).

Depressive symptoms had decreased at the 2-year follow-up. The long-term but not immediate effect on depressive symptoms could be explained by the maintenance of social activities and social contacts. Although divergent effects on mental health have been found when intervening in loneliness (Dickens *et al.* 2011, Saito *et al.* 2012), social capital seems to be related to reduced depression among older people (Forsman *et al.* 2012). Further research is needed on how to prevent and manage depressive symptoms related to loneliness.

Contrary to a previous trial, our study did not find a significant decrease in visits to the general practitioner or in hospitalisations (Pitkala *et al.* 2009). Moreover, our study is the first of this kind assessing the impact on visits to the nurse, social worker and emergency department. No effect was found other than a significant increase in visits to the nurse. This could be explained by the nurse's role in the group, which could have increased the participants' trust. The intervention could also have empowered participants to take more responsibility for their health. However, the heterogeneity of the reasons for visiting these professionals (e.g. chronic disease management, wound care, etc.) makes it difficult to interpret this increase.

### Strengths and limitations of the study

This study contributes a novel approach in terms of the participating actors, the problems tackled and the

strategy applied. Nevertheless, the study has some limitations. Due to the pre-post non-controlled design, results cannot be attributed to the intervention (Dimitrov & Rumrill 2003, López *et al.* 2011). However, the improvement could have been achieved through the intervention, as observational studies show that social networks remain stable or decrease during ageing (Shaw *et al.* 2007, Ertel *et al.* 2009). Furthermore, the study design accomplishes its explorative aim as a preliminary step for a definitive clinical trial (Campbell *et al.* 2007). Moreover, our design avoids the recently suggested ethical problem of randomised clinical trials, placing people suffering from loneliness into usual-care or wait-list groups, as untreated loneliness has potentially negative health effects (Masi *et al.* 2011). Accordingly, when experimental designs are ethically problematic, non-randomised studies bring valuable contributions (Thomson *et al.* 2004).

While the fact that the intervention promoted the social capital of older lonely people in their environment is a strength, the impact was only assessed at an individual level and the neighbourhood impact remains unknown.

The number of people who withdrew from the group-based programme is moderate but other studies confirm the difficulty of retaining this population (Routasalo *et al.* 2009).

### Implications for further research, practice and policy issues

Future clinical trials could attempt to endorse a causal inference and to assess health effects, the use of health resources and cost-effectiveness. In addition, a qualitative methodology could help to understand the process of change among participants and effects that were not detected or difficult to quantify.

Differential strategies should be designed to successfully recruit both men and women, and more research is needed on gender issues in loneliness interventions in Southern European countries. It also remains a challenge to include and maintain persons suffering from health limitations that are closely linked to loneliness such as mobility disability, depression and hypoacusia.

Our results support current health and social care policy to implement effective care co-ordination involving primary care and community assets as a key network to promote social capital.

In clinical practice, considering the increasing workload of primary healthcare professionals with the growing proportion of older people with chronic diseases (Contel *et al.* 2012), resources should be

increased to address their associated psychosocial problems such as loneliness. In this vein, our study contributes a promising non-pharmacological approach to prevent or manage loneliness-related depression.

The intervention design is extendable to other healthcare centres at a low cost as it involves using existing professionals and services, but creating new roles, strengthening networks and creating a new volunteer profile (Coll-Planas & Gómez 2012). Thus, it could become a useful resource to which health professionals might refer patients suffering from loneliness.

### Conclusions

In summary, our study developed a feasible and culturally appropriate strategy, tailored to our health and social system based on social capital to alleviate loneliness. Moreover, our intervention tried to overcome behavioural challenges, used care co-ordination including community assets and achieved promising results.

A policy debate should be opened about the roles of primary health and social care, community services, and their responsibilities and priorities in implementing care co-ordination and programmes to relieve the increasing number of older people who suffer from loneliness. Moreover, the role of primary care promoting social capital should be also discussed as an increasingly important public health issue.

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### Competing interests

The authors declare that they have no competing interests.

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## **ARTICLE 5:**

### **DEVELOPING EVIDENCE FOR FOOTBALL (SOCCER) REMINISCENCE INTERVENTIONS WITHIN LONG- TERM CARE: A CO-OPERATIVE APPROACH APPLIED IN SCOTLAND AND SPAIN**

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## Clinical Experience

## Developing Evidence for Football (Soccer) Reminiscence Interventions Within Long-term Care: A Co-operative Approach Applied in Scotland and Spain



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## A B S T R A C T

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Loneliness is a common experience within long-term care and, to promote well-being and quality of life among people with dementia, it is important to draw upon a repertoire of strategies that provide social stimulation, companionship, and enjoyment. This paper describes and reflects on a program of co-operative social participatory research that sought to introduce football-focused (ie, soccer-based) reminiscence based in 4 community settings within Spain and Scotland. Findings are reported and inform an original conceptual model that supports the introduction of sustainable approaches to the development of football-focused reminiscence with and for people with dementia.

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Dementia is a major public health concern worldwide.<sup>1,2</sup> Dementia-related changes, which include impaired cognition, memory loss, communication difficulties, and behavioral changes, can reduce an individual's confidence to participate and engage in social activities, increasing the likelihood of isolation and loneliness. Loneliness is considered a geriatric syndrome and, surprisingly, its magnitude in long-term care facilities is not known but

thought to be high.<sup>3</sup> However, feelings of uselessness and meaninglessness, which fuel loneliness, are frequently reported within long-term care settings.<sup>4</sup> Loneliness in people with dementia leads to faster cognitive decline, depression, poorer ability to make decisions, reduced physical activity, and increased frailty.<sup>5,6</sup> Interventions to address loneliness and social isolation within nursing homes have included volunteer visits to provide support; cognitive behavioral therapy; Internet training; companion-type robots<sup>7,8</sup>; animal-assisted therapy<sup>9</sup>; contact with children, pets, and plants; and humor therapy through clowns.<sup>10,11</sup> Although some of these specific innovations have been proven effective and may appeal to some residents, many older people long for human relationships and reciprocity in giving and receiving,<sup>4,12</sup> hence the importance of human interaction and psychosocial interventions within dementia care.<sup>13</sup> Systematic reviews, however, reveal an inconclusive evidence base in terms of the effectiveness of loneliness interventions, indicating that theoretically informed, group-based interventions that harness community resources yield the most promising results. This resonates with the theory-driven work of Coll-Planas et al<sup>14</sup> that promotes the use of social capital to alleviate loneliness among older people.

Karen Watchman and Sara Doménech contributed equally to the manuscript. The authors declare no conflicts of interest.

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## Reminiscence

Reminiscence is one of the most popular interventions in practice in nursing homes.<sup>15</sup> Reminiscence therapy provides cognitive stimulation for people with dementia. It consists of those people thinking about their own past experiences to reactivate their personal past and maintains the subject's personal identity by presenting facilitating stimuli such as objects or pictures. Past memories linked to significant life moments act as therapeutic and guiding elements for people with dementia, providing a sense of belonging. Structured reminiscence around the experiences of a person's life involves the use of selected facilitating stimuli to evoke significant and personalized memories. Reminiscence therapy is also used to stimulate communicative interactions and minimize social isolation, encouraging interaction between participants.<sup>16–18</sup>

Importantly, there is growing evidence indicating the therapeutic potential of reminiscence; a recent meta-analysis showed positive results for cognition and depressive symptoms.<sup>19</sup> Moreover, some results also show favorable effects on dysphoria and agitation in residents with dementia, like those from the LEAP program.<sup>20</sup>

Individualized reminiscence in nursing home residents has been shown to be effective in several studies.<sup>21,22</sup> One-to-one interventions allow a high commitment to person-centered care and life-story work. An alternative option is to provide group-based reminiscence interventions framed around a shared interest. In this regard, there has been a growing interest in sports-based reminiscence topics within long-term care. Scottish football-focused (ie, soccer-based) reminiscence projects have demonstrated enthusiasm from those with an interest in the sport to engage in community-based activities and groups, including large-scale reminiscence events at stadia.<sup>23,24</sup> In the United States, baseball-focused reminiscence is growing in popularity.<sup>25</sup>

### *Football: From a Collective Social Memory to a Reminiscence Tool*

Historically, European football clubs and their associated cultural practices have played an important role, socially and culturally, in the lives of working-class men in particular. Football offers a means of enhancing social relationships, tying people together through reciprocal relations based on mutual identification and trust, alongside shared “memory” of certain signs, symbols, sounds, and places. Football supporters have an emotional attachment to the place that their club plays at, providing an important social identity,<sup>26</sup> and an affectionate relationship to the ground that is regularly revisited.<sup>27</sup> The psychological importance of the football club to a town or city is a source of “topophilia—a love of place.”<sup>28</sup> The tie is so strong because the ground and club provide a hugely significant and comforting social bond—where people can interact with like-minded individuals.

The appeal of football within both Spain and Scotland, the sociability of football spectatorship, and its association with both private and collective memories make it an ideal vehicle through which to develop both sociable and potentially therapeutic reminiscence interventions.

### *Project Aim*

This article describes a co-operative approach to developing a theoretical and practice-driven evidence base to inform the delivery of football-based reminiscence to older people with cognitive impairment in long-term care contexts.

The overall project aim was to develop a conceptual model for practice, drawing upon the football reminiscence implementation studies undertaken within Spain and Scotland, and enriched by theoretical frameworks.

## Methods

The projects in Scotland and Spain were delivered between 2013 and 2015; both took a co-operative-inquiry approach and enabled sequential engagement in different study sites. Research teams based within Scotland and Spain worked co-operatively to share ideas, developed project methods, and compared experiences and findings related to introducing football reminiscence within 4 different settings.

### *Study Sites*

In Spain, 3 study sites were engaged, each from a different city: 1 day hospital from Barcelona and 2 nursing homes from Valencia and Bilbao.

In Scotland, 4 geographically close urban care homes operated by the same service provider within the Lanarkshire area participated.

### *Football Reminiscence Implementation Guide*

Drawing on our previous research,<sup>29</sup> we developed a template for guidance in the delivery of community-based structured football reminiscence called “Principles and Practice Guide for Developing Football-Focused Reminiscence With People With Dementia” (Appendix 1). This was used as a starting point for the project teams working in Spain and Scotland to adapt for local implementation and evaluation within the respective study sites.

For brevity, we will report the 3 consecutive projects undertaken in Spain first, followed by the Scottish project. In practice, there was an ongoing iterative and co-operative process of discussion between the Spanish and Scottish projects so that implementation lessons could be shared and adjustments made to improve practices for immediate benefit to recipients of the reminiscence sessions, rather than waiting until the end of the project.

### *Implementation Projects Undertaken in Spain*

Three football-based reminiscence programs were conducted, one in each city, in Barcelona, Valencia, and Bilbao.

### *Inclusion criteria*

For each of the 3 Spanish sites, a maximum number of 10 older adults per group was sought. Participants had to be aged 65 years and older, with mild cognitive impairment or mild to moderate dementia (Global Deterioration Scale 3, 4, or 5<sup>30</sup>) and interested in football in order to be eligible for the Spanish study. Exclusion criteria were participants who did not understand Spanish, were not able to participate in a group dynamic (as a result of severe behavioral, sensory, and/or mental disorders), and participants comorbid with terminal illness.

### *Participants' characteristics*

A total of 20 participants were recruited—5 in Barcelona, 8 in Valencia, and 7 in Bilbao. Three of the participants were women, and 13 had a low educational level. Four participants were recruited in Valencia despite having no cognitive decline because of the difficulty of finding enough people in the chosen nursing home fitting the profile with an interest in football and willing to participate. Three former football players with cognitive impairment were included in Valencia (n = 2) and Bilbao (n = 1).

### *Characteristics of the program*

A 12-week structured program comprising 11 weekly, 2-hour football reminiscence sessions was delivered in the 3 settings. The program was tailored to the specificities of each of the 3 intervention



sites. The final session at each site involved a visit to the local football stadium and/or football museum, specifically the stadium and museum from the local clubs: FC Barcelona, FC Valencia, and Athletic Club de Bilbao.

Sessions were composed of reminiscence activities. After projecting images and audio related to the football, participants were encouraged to discuss their memories in a friendly atmosphere. A Life Story Book in relation to football was developed by the researchers with the support of the University of the West of Scotland. Part of each session was dedicated to working on the Life Story Book. Family members were asked to collaborate in developing the Life Story Book by providing pictures of different moments of the patient's life (childhood, adolescence, and adulthood). In Bilbao, family members were invited to join the visits to the local football museum and stadium. The facilitator presented reminiscence memorabilia and a variety of football objects such as football cards, newspaper clippings, pennants, and videos to trigger conversations.

Football material was carefully chosen by the Spanish Federation of Associations of Former Football Players (FEAFV) in accordance with guidance provided by the University of the West of Scotland. The local FEAFV involved were Agrupació Barça Veterans (Barcelona), Asociación de Futbolistas Valencia CF (Valencia), and Asociación Exjugadores Athletic Club de Bilbao (Bilbao). Further stakeholders who collaborated in the design and delivery of the intervention included healthy and active former football players from the local associations of former football players linked to the FEAFV who acted as volunteers providing their football experience and expertise during the sessions; former players with dementia from the local associations of former football players linked to the FEAFV who benefited from the intervention while contributing with their personal football history to the group (in Valencia and Bilbao); a psychologist (from the centers in Bilbao and Valencia) and a researcher in Barcelona, all with experience of facilitating groups and trained in football-based reminiscence, who facilitated the sessions; other health professionals from the center, who observed the sessions and supported participants when needed.

#### *Evaluation methods*

Qualitative and quantitative data were collected to reflect the process and the impact of the program on those involved. As quantitative measures, validated scales related to cognition, behavior, function, communication, and quality of life of participants with dementia, as well as caregiver's burden, were administered at the beginning and after finishing the intervention to assess their applicability, and to estimate the sample size of a future randomized controlled clinical trial.

The qualitative evaluation was based on observations and semi-structured interviews on opinions and experiences of the professionals, participants, volunteers, and caregivers involved. Interviews were held after finishing the intervention and recorded for subsequent analysis. We applied the framework from Patton et al.<sup>31</sup> to evaluate the program according to needs of the program, design, implementation, impact, and continuity. Qualitative data were analyzed using content analysis.

#### *Implementation Project Undertaken in Scotland*

In Scotland, one program was conducted in one care home within the Lanarkshire area. For continuity, one facilitator was employed for the duration of the study.

#### *Inclusion criteria*

Inclusion criteria stipulated that the men were resident in one of 4 participating care homes owned by the same company, had a diagnosis of dementia, were able to consent to take part, and expressed an interest and desire to attend.

#### *Participants' characteristics*

Eight male care-home residents with dementia were recruited, 5 of whom were regular attendees. They were aged between 72 and 89. All had been resident in their respective care home for more than 6 months.

#### *Characteristics of the program*

A 12-week structured reminiscence program was tested. This comprised weekly 2-hour sessions delivered within one of the 4 participating nursing homes over a period of 11 weeks. The final week involved a group visit to Hampden Park, Scotland's national football stadium. Transport was provided for participants to travel from 3 other homes to the care home in which the program was delivered.

In addition to the trained facilitator, a care-home liaison physiotherapist and care-home liaison occupational therapist were in attendance each week, providing a link between the research team and the care-home staff.

Retro football shirts and scarves were hung across the back of chairs, and other artifacts were displayed as visual triggers in the reminiscence room. Structured activities were themed around Scottish, English, and European football players, matches and associated factors such as match food and drink, and travel to games. Pies and bovril, the staple fare of Scottish football matches, were provided and consumed at "half-time" each week.

#### *Evaluation methods*

Sessions were audio recorded and transcribed, interpretation was supported with use of documentary photographs, and field notes were made by an independent observer. The facilitator and care-home staff kept a reflective log, which family members were encouraged to write in to note any changes they observed in between the weekly sessions, including how often the football sessions were raised in conversation. As with the Spanish study, qualitative data were analyzed using content analysis. Quantitative data including care records consisting of falls data, sleep pattern, Malnutrition Universal Screening Tool (MUST), and medication records were scrutinized at the beginning and end of the 12-week study period to determine evidence of impact on the residents' well-being and behavior.

#### *Building a Model for Practice*

Within the co-operative approach, a theoretically and practice-driven model for practice was built. The theoretical perspective was enriched by the Senses framework,<sup>32</sup> which recognizes the relational aspects within care and caring and the centrality of the person receiving care or community interventions.<sup>33</sup> This framework is focused on the creation of an environment in which older people, or, in our project, participants of the football reminiscence intervention, experience 6 senses, namely, sense of security, sense of belonging, sense of continuity, sense of purpose, sense of achievement, and sense of significance.

The results gathered from the experiences in both countries contributed to building the model from a practical perspective.

#### *Ethical Approval*

Ethical approval was sought for the respective study sites from the appropriate committees along with local management permissions. In Spain, ethical approval was secured from the Comissió d'Ètica en l'Experimentació Animal i Humana (CEEAH) de la Universitat Autònoma de Barcelona. In Scotland, approval was secured from the University of the West of Scotland.

**Results**

*The Spanish Project*

Table 1 shows the results of the Spanish Project for participants. Professionals involved felt that they had acquired a new intervention tool that allowed them to gain a deeper knowledge of the participants, working with their strengths and helping to implement a more person-centered care. Family members reported an improvement in the relationships with their relatives with dementia. Former players who were enrolled as volunteers expressed satisfaction in being able to help with their knowledge and experience and were grateful to feel connected with other people and other realities. Former football players with dementia additionally felt needed and useful and able to contribute and help others.

*The Scottish Project*

Table 1 highlights how participants benefited in multiple ways from intervention.<sup>34</sup>

*A Model for Practice*

The resulting conceptual model for practice is presented in Figure 1. It presents the collaborative partnership and the main mediating pathways identified as key factors to achieve successful results. Achievement of Nolan and colleagues<sup>32</sup> Senses is a prerequisite to creating the conditions in which football reminiscence can be most helpful. For instance, this means that the individual feels safe and secure within the group, and has a sense of purpose (enjoyment) and achievement, with affirming feedback from the facilitator recognized as important.

**Discussion**

This article describes and reflects on a program of co-operative social participatory research, which sought to introduce football-focused reminiscence into 4 long-term care settings within Scotland and Spain. Findings from each of the 4 projects are reported and compared and inform an original conceptual model that supports the introduction of sustainable approaches to the development of football-focused reminiscence with and for people with dementia.

**Table 1**  
Reported Impacts on Participants of the Spanish and the Scottish Projects

Spanish Project	Scottish Project
<ul style="list-style-type: none"> <li>❖ Participants, staff, family members, and volunteers reported a positive impact on mood, and they expressed positive feelings of joy and psychological well-being.</li> <li>❖ Staff and family members reported an increase in self-esteem of participants; they felt valued and useful sharing their knowledge and experience.</li> <li>❖ Staff and family members observed and reported that participants increased their communicative (more talkative) and cognitive abilities (memory and attention) during the sessions.</li> <li>❖ Decrease in social isolation through improvements in socialization was reported and observed by all involved agents, consisting of an increase in quantity and quality of social interactions between participants during and between sessions. Participants living in the same nursing home got to know each other through the program.</li> <li>❖ Positive displays of anticipation were observed by staff and family members, consisting of participants waiting for weekly sessions with enthusiasm.</li> <li>❖ Participants increasingly showed engagement in the group dynamics, developing a strong sense of belonging.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Participants exhibited increased self-awareness, evidenced by 2 of the men bathing before attending whereas typically they refused to do so, and all dressing willingly and smartly in preparation for the sessions, suggesting the potential for improved dementia symptomology.</li> <li>❖ Participants displayed pride at being positioned as experts; some of the men had extensive football knowledge, even beyond that of the facilitator.</li> <li>❖ Improved sleep was reported for 2 of the men after football reminiscence sessions, with one acknowledging that the travel involved and being outdoors for a period of time may have also been a contributory factor.</li> <li>❖ Staff and family members reported that participants increased communication on the “football days” compared to other days of the week. This was unexpected as all of the men were considered to have declining abilities to converse or use verbal expression.</li> <li>❖ Staff reported that participants were sometimes awake earlier on the intervention days and showed other positive displays of anticipation, including visible signs of enjoyment at arrival and warmth of greeting the other men and the facilitator.</li> </ul>



**Fig. 1.** Model for practice: collaborative partnership and mediating factors.

In the implementation and delivery of the Spanish project, recruitment was difficult because of the specific target profile (mild to moderate dementia with an interest in football) and given the lower presence of men in long-term care. Nevertheless, the co-operation between former players and health professionals was key in complementing the knowledge and experience of football with that of dementia care. The atmosphere of camaraderie was determinant for the socialization process and for working with the strengths of participants with dementia. Finally, football was a useful tool to connect with enjoyment and feelings of belonging.

In the implementation and delivery of the Scottish Project, a key lesson was that the reminiscence facilitator required a combination of knowledge of football, dementia awareness, and interpersonal skills to involve men with different levels of cognitive ability within the group. This was required to promote the participation of all group members, particularly those less capable of responding verbally and quickly, while also conducting an enjoyable session, holding the men’s attention and engaging them with impromptu banter.

Regarding methods, the advantage of using co-operative inquiry<sup>35</sup> and emergent action-orientated interventions was that the research teams could respond to the local context and learn implementation lessons that have given rise to an original conceptual model for practice. At the same time, working with different stakeholders was challenging when it came to agreeing and implementing a specific program, with different perspectives and purposes involved. However, this is a very good example of how a collaborative partnership has led to positive outcomes.

In terms of impacts, football-based reminiscence stimulated communicative interactions, enhanced cognitive abilities, and improved mood and psychological well-being. Furthermore, it encouraged interaction between participants and provided a sense of belonging, thus minimizing social isolation and loneliness. In this vein, it supports but goes beyond person-centered care, because it is an example of a relationship-centered intervention as promoted through the Senses framework.<sup>32</sup> Therefore, it links into a sense of security (feeling safe in our existential being, safe places—stadia), a sense of belonging (football belonging—sense of home and familiarity), a purpose (enjoying football reminiscence), a sense of continuity (“I am still me”), achievement (“I can talk about football”), and significance (feeling valued as a person).

The model for practice shows the collaborative partnership and mediating pathways and aims to complement the “Principles and Practice Guide for Developing Football-Focused Reminiscence with People with Dementia” (Appendix 1) in supporting practice and developing an evidence base for football reminiscence interventions within long-term care.

## Conclusion

Loneliness is a common experience within long-term care and, to promote well-being and quality of life among people with dementia, it is important to draw upon a repertoire of strategies that provide social stimulation, companionship and enjoyment. Group-based football reminiscence interventions, as these projects have demonstrated, are feasible in a variety of long-term care settings including nursing homes, day care and community care and have the potential to bring people with dementia together to enjoy a shared and meaningful activity. The practice guide (Appendix 1) proved a useful starting point to shape local delivery approaches, and the new conceptual model offers a deeper consideration for long-term care professionals and applied researchers to further develop and deepen understanding of how such approaches might harness social capital within the community to alleviate loneliness in the most dependent and vulnerable members of their community.

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## Supplementary Data

Supplementary data related to this article can be found online at <http://dx.doi.org/10.1016/j.jamda.2017.01.013>.

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## 6. Discussion



Tens un altre altre estímul,  
et sents com viure,  
sents que algú et necessita  
per alguna cosa...  
saps què és això?

**You have another stimulus, you feel like living,  
you feel like someone needs you for something...  
do you know what that feels like?**



## 6. Discussion

### 6.1. Discussion of general aspects

This thesis seeks to respond to the challenge of the current ageing trend, and the loneliness entailed, by promoting the individual and community social resources. Specifically, this research seeks to impact on research, practice, and policy by providing an evidence base complemented by a taxonomy to guide and improve the knowledge and practices of social interventions in public health. Moreover, this work designs, applies and evaluates two social capital interventions in our context in the two main areas of ageing research: community-dwelling older adults and those in long-term care. These interventions are both enriched by and enriching theoretical and conceptual models.

#### 6.1.1. Social capital interventions to address loneliness, social support and participation as health factors

This thesis focuses on loneliness, social support, and participation. A wide range of knowledge about these phenomena is available from social, psychological and behavioural research, which may be key to guiding actions to address them from a health perspective.

In our work, we selected the concept of **social capital** derived from Putnam's approach<sup>87</sup> and operationalized as an umbrella concept since it encompasses social support and participation among other social resources classified into domains (cognitive and structural) and directions of ties (bonding, bridging and linking).<sup>91,92</sup> Other components of social capital such as sense of belonging and social network are also key aspects of this work. Furthermore, it is important to highlight that social resources such as trust, values, and reciprocity also conform relevant aspects of social capital although they are not present in our work.

This conceptual framework is seen as appropriate and useful for this work since it allows, at the same time, a generic overview of social resources relevant for health, classifying them into dimensions and directions, while also allowing the concept to be deconstructed to address each social resource independently. Therefore, this framework is used to build the evidence base in our systematic review, the taxonomy on social capital interventions and to describe the intervention models implemented in the community and in long-term care settings.

#### 6.1.2. Current evidence: contributions from the systematic review on social capital interventions about their health effects

This review has contributed towards building an evidence base for social capital interventions from a public health perspective to advance in the health and social care systems addressing social capital as a relevant protective health factor.

Our findings have shown that evidence from randomized trials is scarce, disperse, diverse, and weak. Thus, there is a lack of evidence on the health effects of social capital interventions, high clinical diversity between trials, and low quality.

According to the CADTH (Canadian Agency for Drugs and Technologies in Health) methodology, the strongest evidence was on the positive impact of social capital interventions improving quality of life, well-being and self-perceived health in older adults. In comparison, social capital interventions were considered generally ineffective on loneliness because less than one third of the studies identified favoured the intervention; specifically, eight studies reported effects on loneliness and only two of those were effective.<sup>57,65,165,172–176</sup> However, trials with successful results on loneliness targeted complex cases, one trial with low risk of bias targeting lonely people was effective on mortality and other health outcomes, and some trials that were effective on quality of life, well-being and self-perceived health targeted lonely older people.<sup>62,65</sup>

Nevertheless, these results are to be interpreted with caution. It is important to highlight that the CADTH procedure applied in our systematic review to make standardized statements is only a method to guide the narrative synthesis, and thus the conclusion that social capital interventions are generally ineffective in loneliness is just an initial exploration according to that procedure. Indeed, our observations of the characteristics of the trials with successful results on loneliness (e.g., targeting complex cases) or with successful results on other health outcomes while targeting loneliness may be of major relevance. Moreover, current valid measurement tools that assess loneliness such as the UCLA Loneliness Scale, have been considered as problematic in detecting the effectiveness of interventions; they are probably being good screening measures but are insensitive to change.<sup>58</sup> In addition, analysing the included trials, we have identified three main approaches that might influence effectiveness when intervening in loneliness. The first approach consists of identifying a target group suffering from loneliness according to a loneliness screening.<sup>58</sup> The second approach targets a specific cause of loneliness such as widowhood or translocation to provide a more specific answer, such as peer support between widows,<sup>177</sup> or facilitating knowledge about community assets among older migrants.<sup>165</sup> In the third approach, there are no specific eligibility criteria regarding loneliness in the target population but effects on loneliness are assessed as a primary or secondary outcome.<sup>65</sup>

Furthermore, the most robust trials included in our review in terms of size and lower risk of bias have shown significant effects in community and long-term care settings, improving mental and physical health in subjective and objective outcomes, reducing mortality, decreasing the use of health services, and in terms of cost-efficiency.

Therefore, the findings of our systematic review suggest the potential of social capital to impact health.

### **6.1.2.1. How social capital interventions impact health**

Our systematic review has enabled us to explore how social capital interventions impact health. The logic model that provided a bases for our systematic review outlined four main hypothetical pathways via which social capital-based interventions might successfully improve long-term outcomes at individual level: physiological, psychological, behavioural and instrumental changes.<sup>178</sup>

Our results more or less supported the four pathways. Regarding physiological changes, one trial showed less physiological damage through a better glycated hemoglobin and a weight impact;<sup>179</sup> another effectively reduced blood pressure<sup>174</sup> and a third one assessed impact on body mass index (BMI),



waist circumference and percentage body fat as anthropometric measures linked to cardiovascular risk factors.<sup>180</sup>

Concerning psychological changes, the main positive mental health parameters related to the intermediate factors are self-esteem,<sup>174</sup> self-efficacy and mastery<sup>181,182</sup>. In terms of negative mental health, less caregiver burden<sup>183–185</sup> and less stress experienced by caregivers<sup>186</sup> support the stress buffering model.

The behavioural changes hypothesis is supported by studies assessing impact on physical activity<sup>180,187,188</sup>. Although several studies aimed to improve the self-management of chronic diseases, none of them assessed behavioural changes regarding self-management. Instead, they measured indirect parameters such as physiological changes.

In relation to instrumental changes, one trial successfully increased participation in cardiac rehabilitation, thus supporting the theory that social capital promotes better health access.<sup>108</sup> However, this hypothesis remains to be proved.<sup>189</sup> No data are available to contrast further instrumental changes such as increased access to other services or goods.

Furthermore, these physiological, psychological, behavioural, and instrumental changes were usually analysed in the original trials as primary or secondary outcomes, and seldom as mediators to decrease long-term outcomes.<sup>190</sup> Therefore, further research is still needed to understand mediating mechanisms.

Nevertheless, these four pathways are strongly interrelated. For instance, self-efficacy prompts behavioural changes such as better self-management of chronic diseases, consequently improving blood pressure as a physiological parameter. Therefore, it remains to be clarified what changes first and whether synergies, cascade effects or other effects occur.

#### 6.1.2.2. Social capital dimensions and directions applied

The trials included are more focused on specific areas such as the community setting and target mainly robust older adults.

Regarding the social capital dimensions applied in the trials, programmes promoting bonding social capital (e.g., peer support) were the most frequent, which means that they enhanced social ties between those who are similar because they shared common characteristics, such as belonging to the same community or having the same socioeconomic status. Also, those programmes promoting cognitive components of social capital were more frequent than those focused on structural components. In addition, a vast majority of programmes promoted new relationships, and seldom tried to improve existing ones, or did both. No interventions were community-wide; indeed, community-wide interventions are often evaluated through designs other than randomized trials.<sup>191</sup>

Therefore, programmes enhancing **linking and bridging social capital**, i.e., favouring social interaction and support between persons who are different (i.e., people outside one's community or with a different social identity) or even have unequal wealth, power, and status, are urgently needed. It is noteworthy the role of linking and bridging social capital to create a more cohesive society, avoiding a more segregated community.

### 6.1.2.3. Gender and other equity indicators and harmful effects of social capital interventions

In the systematic review, we applied the equity indicators from the Equity checklist based on the PROGRESS PLUS framework.<sup>143</sup> Information on sex was generally provided, with women clearly being the majority among participants. However, the background, intervention design, and discussion seldom included gender implications. Many studies mentioned socio-economic and/or education status but they heterogeneously used the terminology and indicators. Studies generally reported how physical disability and cognitive decline were considered and, although only a few studies included older people with disability and/or cognitive decline, these studies provided valuable strategies to consider. Almost one third of studies included minor ethnicities but only two trials were focused on minorities. Lastly, no study mentioned sexual orientation, although this is an emerging research topic in ageing with major consequences on social relationships and support networks.<sup>192</sup>

The results of our systematic review show that the **harmful effects** of social capital interventions are understudied, with only a minority of studies reporting them as well as mechanisms to detect and solve them. Nevertheless, they seem to be rare and mild, limited to mental health and, at least partially, could be solved during the intervention.

### 6.1.2.4. Contributions from the taxonomy on social capital interventions

The SOCAI taxonomy has systematized knowledge to fill the gap between social capital theory and practice. It was built according to available social capital and health theories, and current epidemiological research findings. It has provided a useful guide to promote the introduction of social capital as a protective health factor into intervention strategies targeting older people to support evidence-based practice and evidence-informed policy-making.

The SOCAI taxonomy has shown how a diversity of professionals and non-professionals can assume complementary roles in promoting social capital among older people; how health and social professionals can act and the interplay between professionals with different backgrounds and non-professionals. Volunteers often respond to new profiles and assume novel responsibilities, and the role of lay workers in these interventions indicates the chance to create new work opportunities in this area.

The SOCAI taxonomy can be used to determine mechanisms of impact in process evaluation and outcomes in the impact evaluation, and when reporting and synthesising social capital interventions from a health perspective. It can also be applied to map the current evidence of interventions that use social capital to improve health thus understanding the scope and distribution of evidence, what is known and where there are gaps that should guide further research.

The SOCAI taxonomy could be refined and finalized by: involving further experts in the field, older people and other stakeholders as end-users to ensure the proposed taxonomy is a relevant and useful guide; applying study designs other than clinical trials to reach enough diversity in terms of approaches, contexts and population characteristics and, finally, assessing its use and the levels of agreement when applying it.

In the SOCAI taxonomy, we encourage an inclusive approach when improving social capital, considering the disadvantage categories from the PROGRESS PLUS framework.

### 6.1.3. Contributions from our intervention programmes

#### 6.1.3.1. Focusing on loneliness in the community: the programme “Camins”

Our programme Camins, based on promoting social capital, was a novel and feasible social capital-based approach for alleviating loneliness among community-dwelling older adults through enhancing processes of change by empowering them.

Regarding the three abovementioned main approaches when intervening in loneliness, our programme “Camins” applied the first approach of identifying a target group suffering from loneliness according to a loneliness screening.<sup>193</sup>

It is important to highlight that our study developed a culturally appropriate strategy, tailored to our health and social system based on social capital to alleviate loneliness. Moreover, our intervention sought to overcome behavioural challenges and used care co-ordination. Remarkably, the empowerment approach applied proved to be appropriate at least in the specific context of the intervention.

Our programme used the concept of promoting social participation to refer to engaging participants in local community assets to perform social activities. This idea corresponds with social prescribing, since participants were indeed patients from primary health care. Therefore, we could say that the programme was based on social prescribing through a group-based intervention, aiming to support participants by discovering the most suitable and meaningful activities for them.

The intervention obtained promising results on loneliness, social support and participation after the intervention and on depressive symptoms after the two-year follow-up. However, due to the exploratory aim of the study with a small sample size and the lack of a control group, the study findings require a careful interpretation. Therefore, the qualitative evaluation of the programme presented in article n.4 “*Not alone in loneliness*” is of special interest to understand the perceived impacts.

In the quantitative evaluation of our programme “Camins”, after the intervention, overall loneliness, social and emotional loneliness significantly decreased, and these improvements persisted two years later. Whereas in the qualitative evaluation conducted upon the same subjects after the same programme, we found four types of effects on loneliness: not feeling lonely anymore thanks to friendship; less loneliness (easier to cope with it); transitory effect (only during the group) and no effect because loneliness was due to widowhood and their husband was considered irreplaceable. Remarkably, these types of effect were observed among participants with three distinguishable experiences of loneliness prior to the programme: loneliness attributed to widowhood, being solitary but longing for more social relationships, and feeling lonely while surrounded by others.

It is important to highlight that our study helped to diversify currently static concepts of loneliness, emphasizing the complexity of the phenomenon. The findings showed that loneliness definitely involves many “lonelinesses” and it is a complex combination of unwanted events and autonomous

decisions made. Indeed, unwanted events such as widowhood did not always entail loneliness but sometimes provided relief, while autonomous decisions such as translocation or living alone might also entail loneliness. For instance, one participant was living alone according to her own autonomous decision after having lived with her daughter just after widowhood, but suffered from loneliness at home anyway. On the contrary, another participant felt relieved in widowhood, feeling well living alone, and agreed for her daughter and grandchildren to move in with her due to economic problems, but she then felt lonely in company. Accordingly, decision-making in ageing is complex: choosing independence might entail loneliness in aloneness and supporting family might also entail loneliness in company. Therefore, the Catalan expression of “wanted” and “unwanted loneliness” mentioned in the background is still an overly simplified vision of the phenomenon.

The qualitative evaluation also showed how the programme worked. The promotion of social relationships and participation enhanced each other, tackling loneliness and promoting well-being. However, emotional loneliness was hard to alleviate among some widowed women. Health was highly influenced by, and at the same time influences, social relationships and participation. Socio-economic factors and age-related disability limited the engagement in the programme and consequently the effect of the intervention.

Our qualitative results may indeed provide some key hints to understand the results on loneliness from the systematic review: loneliness is a complex phenomenon, including different typologies and evoking different reactions to a given intervention. Thus, scales widely used in observational studies might fail to detect the diversity of changes derived from an intervention. And more qualitative work needs to be conducted to understand whether and how loneliness changes with interventions.

### **6.1.3.2. Focusing on socialization and sense of belonging in long-term care: the football reminiscence programme**

Group-based football reminiscence interventions were feasible in a variety of long-term care settings and have the potential to bring people with dementia together to enjoy a shared and meaningful activity.

The intervention draws upon a repertoire of strategies that provide social stimulation, companionship, and enjoyment. The atmosphere of camaraderie was a determining factor for the socialization process and for working with the strengths of participants with dementia. Remarkably, football was a useful tool to connect with feelings of belonging. From a sociological perspective, football brings the feeling of home and embeds the love to a place.<sup>194</sup>

This approach may harness social capital among the most dependent and vulnerable members of the community and alleviate their loneliness. Nevertheless, the programme was indirectly aimed at reducing loneliness, but the focus was on increasing socialization and well-being. Thus, the football reminiscence programme applies the second approach on how to target loneliness: targeting a specific cause of loneliness, in this case considering the high prevalence of loneliness in long-term care.<sup>48</sup> No specific findings on loneliness were obtained, but they were obtained on mood, self-esteem, communication and cognitive abilities, sense of belonging, socialization and well-being. It is important to

define as challenging in our cultural context, to explicitly address loneliness in long-term care settings, since persons are surrounded by other older people, professionals, and some of them have family members visiting them.

It is important to highlight **the origin of this intervention programme**. The original idea on conducting reminiscence based on football came from a volunteer of Alzheimer Scotland. During his talks about football with older people, he discovered that this topic engaged them. From that point on, Alzheimer Scotland started to work in this direction and involved the university to evaluate the experience, particularly Prof Debbie Tolson from the University of West Scotland. We became aware of this experience through our personal knowledge of Prof Tolson.

The idea to implement the Scottish idea in Spain came from the FEAFV (Spanish Federation of Associations of Former Football Players). They wished to give back to society, especially to people suffering from dementia, what they had received from the society when they were football players.<sup>195</sup> Therefore, they contacted us in the FSIE-UAB (*Fundació Salut i Envel·liment-UAB*) to support the implementation and evaluation.

Accordingly, this project was born among citizens and the stakeholders, the FEAFV, were those who engaged us as academics. It is therefore clearly a scientific project aligned with “**science with and for society**” to pair scientific excellence with social awareness and responsibility as stated in the European Union Framework Programme for Research and Innovation of Horizon 2020, specifically in the approach of Responsible Research and Innovation.<sup>196</sup> Thus, stakeholders were involved from the onset in the design, implementation and evaluation and it would not have succeeded otherwise. The co-operation between former players and health professionals was key in complementing the knowledge and experience of football with that of dementia care.

Finally, the new conceptual model offers a deeper consideration for long-term care professionals and applied researchers to further develop and deepen our understanding of this and similar approaches.

### 6.1.3.3. Social capital dimensions and directions applied in our programmes

Our intervention programmes were focused on building new relationships but indirectly enhanced existing social networks, since some people knew each other from the neighbourhood in the community programme or were indeed living together in the same nursing home in the reminiscence programme. Moreover, the involvement of family members in the reminiscence programme also partly influenced their existing family relationship.

Both programmes were especially focused on cognitive social capital: especially on peer support in the case of “Camins”, and particularly on sense of belonging in the long-term care intervention. However, both of them also had a part that was focused on structural social capital. Both involved participating in a social activity in a group and extended social networks; “Camins” was explicitly designed to promote social participation in local community assets; and football-based reminiscence included trips to football stadiums and/or museums.

Regarding the direction of the social ties promoted in each programme, in both cases, peer relationships were key (i.e., bonding social capital). Furthermore, the rapport with volunteers and professionals provided bridging and linking social capital that was very relevant for all agents involved. But remarkably, the qualitative evaluation allowed us to identify that support relationships between peers in “Camins” were of two types: those between equals building friendships and, on the contrary, those based on compassion, which means a relationship between persons in an unequal situation. Moreover, as aforementioned, their socio-economic level and physical function were diverse, and also their origin (being born in Catalonia or having come from the rest of Spain to work in Catalonia) and social class. Therefore, despite the external perception of homogeneity among participants, since all fulfil the same eligibility criteria, there was heterogeneity in the intervention groups, which indeed explained a conflict situation but generally permitted group cohesion. In this vein, in the AEQUALIS and the SITLESS programmes we are currently conducting (explained in “Continuity”), we have identified both situations: participants in a group perceived themselves as diverse but expressed feeling surprisingly united and, on the contrary, participants dropping out because they felt different and did not want to belong to the same group; for instance, they perceived others in the group as older and frailer people.

Accordingly, interventions based on bonding social capital allow working with clear levels of heterogeneity within the groups.

Both of our programmes were mainly based on individual social capital and were led by professionals, but also had a community-oriented approach. Accordingly, group participants were active agents involved in the decision-making process throughout the intervention programme, especially in “Camins”. Volunteers were identified from the intervention context and community assets were also involved. These were related to football in the long-term care programme and consisted of socio-cultural resources in “Camins”. Indeed, it could also be considered that the local association of former players is a **community asset** that is engaged in long-term care to increase the quality of life of those looked after there. Thus, in the community, we linked people from primary health care with community assets and, in long-term care, community assets were engaged to go there, while also promoting the participation of residents in the community through trips to the football stadiums and/or museums.

Concluding, our intervention programmes were mainly focused on the social capital components most often used in trials in this area (i.e., social support and bonding social capital), but also combined these components with those less applied (i.e., social participation, sense of belonging and linking and bridging social capital).

#### 6.1.3.3.1. About promoting social participation

Social participation requires specific attention in the discussion since it is less frequently promoted in social capital interventions than social support and, as pointed out in the background, the use of this concept is ambiguous and confusing and entails different levels. According to the taxonomy of social activities from Levasseur presented in the background,<sup>74</sup> our intervention programmes have worked at two of the six levels of participation: doing an activity with others and helping others. Thus, we



have promoted social participation and also, partly, social engagement. Furthermore, according to the typology of programmes promoting social participation among older adults from Raymond,<sup>75</sup> we focused on two out of the five categories with our programmes: social interaction in a group context and volunteering and informal support. Thus, we have not explored lower levels of participation and higher levels of social engagement (e.g., contributing to society), or programmes based on social interaction in an individual context, or collective projects or socio-political involvement and activism. These areas require further attention.

Another noteworthy aspect is that social participation has productive, meaningful and recreational dimensions. Indeed, the meaningfulness of an activity may explain why people participate socially.<sup>74</sup> Moreover, interactions are a fundamental aspect of social participation, and are the consequence of participating in a meaningful social context.<sup>78</sup> These aspects especially apply to our reminiscence programme. Accordingly, football creates a meaningful social context for a meaningful activity for the participants.

#### **6.1.3.4. Gender and other equity indicators and harmful effects in our programmes**

The qualitative evaluation of our intervention in the community showed how health and social vulnerabilities rendered engagement in the programme difficult, as well as causing short and long-term effects. Moreover, gender had a key role. Accordingly, women were the vast majority of participants and their trajectory prior to the programme regarding loneliness and participation was very often deeply determined by their life-long role as women in charge of a family and house care.

On the contrary, the football-based reminiscence targeted long-term care patients with dementia and reached a majority of men as participants. In addition, the volunteers were all men. In this regard, we would like to highlight:

- The success of involving some women, and their great satisfaction with the programme.
- The success of engaging the most difficult subgroup of the older population: older men.
- The strength of having worked with people with dementia, thus people with disability as an equity indicator.

Thus, there is a need to increase the participation of older men in activities since the vast majority of participants in group-based activities are older women. Women are actually the majority in the ageing population, and it may be the case that activities proposed in senior clubs and long-term care settings are more appealing to them. However, minorities like men in this case, are not reached. Therefore, our reminiscence programme presents an example of how to be innovative with existing tools to engage a minority and encourages the development of other programmes in this line.

In addition, the qualitative evaluation of our social capital intervention to alleviate loneliness showed that conflicts and exclusion were unintended effects that seldom occur. No harmful effects were detected in the long-term care programme. However, from a sociological perspective we know that *“the tie is so strong because the ground and club provide a hugely significant and comforting social bond where*



*people can interact with like-minded individuals*”,<sup>194</sup> thus we are enhancing bonding social capital, but we have to ask ourselves what happens with non-like-minded individuals. Likewise, as a programme promoting sense of belonging, we should consider whether we are excluding others, those who do not belong (e.g., to a certain club in this case), and how to avoid it.

#### 6.1.4. Strengths, limitations and continuity

The research work presented in this thesis has several strengths, while it also presents some limitations. Furthermore, it brings useful advances for further work with current continuity.

The systematic review has contributed to building an up-to-date evidence base of trials focusing on social capital and assessing the effect on older people’s health. It has identified 36 trials around the world aimed at promoting social capital, which can support practices in a diversity of contexts and in a variety of settings (health care centres, community centres, nursing homes, schools, home...). Its broad scope on social capital components, health outcomes and settings helps to draw an overview of the state of the art. Moreover, the complexity managed in the review and its base in a logic model are strengths. However, the findings are for guidance purpose only, given the heterogeneity and low quality of trials found and the procedures applied in the narrative synthesis. It is important to highlight that the complementary work performed developing the taxonomy contributes with a specific guidance to continue building the evidence base, which is enriched by social and health theoretical frameworks. Moreover, the taxonomy seeks to enhance the salutogenic approach and the vision of ageing in the frame of generativity, promoting older people’s productive and collective roles.

This thesis presents two programmes that support the WHO Active Ageing policy and thus provide insights into how to enhance social networks and participation while ageing to enhance well-being and resilience in our context. Both intervention programmes had a small sample size and a pre-post design without a control group. However, both of them were applied in three different settings and were evaluated with mixed methods. Qualitative procedures included all agents involved. It is important to note that the programmes developed were enriched by and also enrich theoretical and conceptual models. “Camins” was initially theory-driven considering previous effective models<sup>62,155</sup> and was further developed with a practical orientation by professionals from the centres. The football reminiscence programme applied the approach “science with and for society” while also fitting into theoretical frameworks and contributing towards developing a model of practice. Therefore, both programmes are models of how to build theory-driven interventions and how to involve stakeholders.

The work presented in papers n.3 and n.4 regarding the programme “Camins” has been further developed and applied in the on-going randomized clinical trial **AEQUALIS: Promoting self-management, health literacy and social capital to reduce health inequalities in older adults living in urban disadvantaged areas** (ClinicalTrials.gov: NCT02733523) (<http://salut-envelliment.uab.cat/aequalis/>). It is lead by Sergi Blancafort (FSIE-UAB), Rosa Monteserín (EAP Sardenya) and myself (FSIE-UAB), and funded by the Programa *RecerCaixa*, a joint initiative by the *Associació Catalana d’Universitats Públiques (ACUP)* and *Obra Social la Caixa*.

The AEQUALIS project is set up according to four premises:

1. Ageing, gender, socioeconomic conditions and urban areas are health inequality axis.
2. Interventions promoted by local health agents may influence intermediate health determinants to reduce the negative health impacts of social determinants and, consequently, reduce health inequalities.
3. Self-management, health literacy, and social capital are intermediate health determinants that are potentially modifiable.
4. Self-perceived health is considered a good indicator of general health status, mortality and morbidity, as well as of health inequalities.<sup>4</sup>

We developed an intervention designed to promote self-management, health literacy and social capital. We aimed to assess its effectiveness on self-perceived health as an indicator of health inequalities. We targeted older people from urban socioeconomically disadvantaged areas around Catalonia who perceived their health as fair or poor.

Particularly, the part of the intervention design aimed at the promotion of social capital is built according to the design of the programme “Camins”. Therefore, this trial brings forward the exploratory study of “Camins” and links a social capital intervention with the purpose to reduce health inequalities. Moreover, in the intervention model, social capital also enhances behaviour change toward healthier lifestyles in the self-management aspect.

This intervention is assessed with qualitative and quantitative methods and involves a process evaluation in addition to the impact assessment as a complex intervention.

After an initial pilot phase, a 12-weeks-long group-based intervention was conducted in a total of 16 primary care centres from six cities in Catalonia. 390 participants were randomised to the intervention or the control group. The control group remained on the waiting list and will receive the interventions after the 9-month follow-up post-intervention.

The 16 groups have already finished the intervention, and the qualitative and quantitative evaluations are currently being undertaken. Preliminary results were presented in the *36è Congrés de la semFYC* (National Conference of Family and Community Medicine) in A Coruña in June 2016 and the project won two awards: the best research project and the best experience.

Another current research project that gives continuity to my PhD is the SITLESS project (<http://sitless.eu>). The research is supported and funded by the European Union program Horizon 2020 (H2020-Grant 634270). I am responsible for the scientific coordination of the project in FSIE-UAB. The other partners are: Fundació Blanquerna, the University of Southern Denmark, Queen’s University Belfast, University of Ulm, Siel Bleu and the University of Glasgow.

It is a multicentre randomized trial and its overall aim is to assess the long-term effectiveness (18 month follow-up) of a complex intervention on sedentary behaviour and physical activity in a community dwelling older population based on existing exercise referral schemes enhanced by self-man-

agement-strategies. The intervention is being conducted in four sites: Barcelona, Belfast (UK), Ulm (Germany) and Odense (Denmark).

SITLESS compares a group-based programme on physical activity with an intervention that adds behaviour change strategies to the physical activity intervention. The control group receives usual care. One of the strategies used to promote these healthy habits is social support.

In line with my PhD, as a secondary aim, we are interested in how social support contributes to behaviour change, in this case, increasing physical activity and decreasing sedentary behaviour. In addition, the impact of the intervention will be assessed on loneliness and social support. The trial also involves a process evaluation of the complex intervention to assess how the implementation, mechanisms of impact and context influence the quantitative results.

The recruitment is currently ongoing and the first intervention groups have already finished the 16-week programme.

Furthermore, my research findings are currently **influencing policy and practices** by my role **assessing** the third sector, the Department of Health and the municipality of Barcelona in programmes focused on loneliness among older people or, in a broader sense, addressing social aspects of ageing.

## 6.2. Some final personal thoughts on my research work

Throughout the years spent working on my thesis, I have been asked about my research topic several times by family and friends. By answering them I realized how understandable and obvious what I wanted to prove is:

*If you have supportive relationships and are engaged in your local community, you feel less lonely, and thus, you enjoy better health. We can conduct programmes with a view to achieving that for older people.*

However, the scientific work to test that idea is hard. Scientific work is indeed always hard. But my research work, like the work of many others, was specifically challenging due to its interdisciplinarity. I must state that it is tough when it comes to establishing aims, when using qualitative and quantitative methods, when using theoretical frameworks and defining conceptual models, when writing the background, the results and the discussion, when concluding... and of course, when publishing: the topic is considered to be too social for a “health” journal, and too “health”-oriented for a social journal!

This is certainly an interdisciplinary thesis as shown by the direction shared by a public health expert and a sociology expert and, over time, I feel I have become interdisciplinary. This entailed first of all embarking on a confusing journey in which I lost the sense of belonging to my original discipline, medicine, and felt very drawn to new disciplines, psychology and sociology, but did not feel confident enough to enter them.

Afterwards, I understood how my medical education and my training in public health were ideal for me to make a commitment: transmitting to the public health community the scientific relevance of

the social dimension of ageing for health, with the purpose of impacting research, practice and policy.

Finally, I would like to finish with these sentences that I definitely support from Linda Fried, whose work I cited several times in this thesis:

*“I’m an intuitive thinker, and I’m very visual,” Dr Fried said. “There’s a progression; you sweat over something. You try to get at it from 40 different directions. One day it all comes together. Then there are years of study to demonstrate what we know. You know that quote from Michelangelo — sculpting is merely the art of revealing figure in stone. In science, every once in a while you chip away at the marble and what is revealed is exactly what you thought you were going to find.”*

Linda Fried,

Dean of the Mailman School of Public Health and DeLamar, Professor of Public Health Practice,  
Professor of Epidemiology and Medicine,

Senior Vice President, Columbia University Medical Center

[http://www.nytimes.com/2012/06/26/science/reframing-views-of-aging.html?\\_r=0](http://www.nytimes.com/2012/06/26/science/reframing-views-of-aging.html?_r=0)

Interview in the New York Times in 2012.

## 7. Conclusions



*J'ôc una altra, no puc dir mes...  
em sento valenta*

**I'm a different woman, there's nothing  
more to say... I feel brave.**

## 7. Conclusions

### 7.1. Implications for practice and policy

1. Our findings seek to respond to the recent WHO warning regarding the failure of health systems around the world to meet the needs of older persons. In this regard, we propose specific programmes that promote a supportive social environment and participation taking health limitations into account in the community and in long-term care settings.
2. Evidence-informed policy has to be nurtured by research, but especially in the field of social capital, health and social policy should be committed to contributing to the limited evidence by **evaluating existing programmes** aimed at alleviating loneliness and/or using social capital components. This should include those programmes linked to health, social, community, long-term care, and third sector organizations. They should be evaluated in terms of their process and impacts, including their health effects.
3. Complementarily, the SOCAI taxonomy (currently in submission process) is a useful guide to promote the introduction of social capital as a protective health factor into intervention strategies targeting older people to support evidence-based practice and evidence-informed policy-making. Specifically at policy level, the SOCAI taxonomy could help policy makers to gain an overview of current practices that involve social capital or their components and enhance their theory and evidence-based conceptualization. It might also help to promote a paradigm **shift towards positive health**, promoting protective factors for health, thus guiding the implementation of the salutogenic theory in practice to promote healthy ageing.
4. In clinical practice, considering the increasing workload of primary healthcare professionals with the growing proportion of older people with chronic diseases, **health professionals** need to become more **aware** of loneliness as a risk factor for health, and social capital components as protective factors, as well as of the potential of social capital interventions to promote health. Furthermore, resources should be increased to address older people's associated **psychosocial problems** such as loneliness.<sup>197</sup> Accordingly, professionals should be provided with useful resources to act in their daily practice in line with community-oriented health care and group-based programmes of health promotion.<sup>119</sup> In this vein, our programme "Camins" is extendable to other healthcare centres; it would involve existing professionals and services, but it would promote new roles for them, strengthen networks and create a new volunteer profile. Thus, it could become a useful resource to which health professionals might refer patients suffering from loneliness.
5. Our findings could support current local practices and policies in line with **community-oriented health care practices** like programmes implemented in our health care system and based on peer support (e.g., the *Programa Pacient Expert Catalunya*<sup>®</sup>), and emerging programmes such as social prescribing promoted by the Department of Health through the PINSAP, and the COMSalut programme aimed at enhancing community health.

6. The coordination of agents and institutions within health and social care and beyond calls for a public and community health perspective, gives rise to implementation challenges and may be in line with the **integrated care model**. Our programmes support current health and social care policy to implement effective care co-ordination involving primary care and community assets in the community and a variety of stakeholders in long-term care as a key network to promote social capital. Thus, our findings may support the currently on-going integrated care plan in Catalonia from the Department of Health, the *Pla interdepartamental d'atenció i interacció social i sanitària* (PIAISS).
7. Group-based football reminiscence interventions, as these projects have demonstrated, are feasible in a variety of long-term care settings including nursing homes, day care and community care. Thus, our conceptual model for practice could be further applied and could inspire other programmes with the same background.
8. **In long-term care, professionals'** view of ageing should shift from a deficit perspective to a strengths-based approach in line with person-centred care, as promoted in our programme.
9. Social capital interventions may contribute towards **reducing health inequalities**, a current global priority in policy,<sup>1</sup> by addressing social determinants of health. Accordingly, we encourage an inclusive approach when improving social capital by considering the equity indicators of the PROGRESS Plus framework in the design, evaluation and reporting.<sup>143</sup>
10. Programmes enhancing **linking and bridging social capital** are urgently needed to create a more cohesive society. Furthermore, programmes based on **bonding social capital** should address how to include heterogeneity within the groups.
11. Policy is challenged to drive a shift towards **multilevel interventions and intersectorial health policies** as advocated by the WHO **involving all stakeholders** and end-users and by the **intersectorial actions** required in line with "health in all policies".
12. Attention must be placed on **not medicalizing loneliness, or the need for social support or participation** when interventions are developed in primary health care. Instead, promoting social capital should help to apply a biopsychosocial health model, demedicalizing especially depressive symptoms, bereavement and widowhood and promoting well-being at all levels.<sup>197</sup>
13. A debate about social capital promotion needs to be opened to understand **shared responsibilities** among all agents involved and to define new roles, including public health and health care professionals but also beyond: Who is in charge of designing, implementing and evaluating social capital interventions? What is the role of primary health care and each of their professionals? What is the role of community-oriented health care practices and of community actions for health? What is the potential of building new workplaces and of promoting new forms of volunteering and socially responsible citizenship from a generativity perspective? Remarkably, roles may differ according to the socio-economic and cultural contexts and the characteristics of the health and social care system and the community resources available.



## 7.2. Implications for research

1. Further high quality experimental research should contribute towards filling the gap between the ageing and health policy mandate, the emerging interest in social capital practices and the current lack of knowledge to inform evidence-based practices. This is particularly the case of **Spain**, where life expectancy and the prevalence of loneliness are among the highest in the European Union.
2. Our work challenges the traditional use of **social interventions in the control groups** of clinical trials to wash out the effects of non-pharmacological interventions under study. This is used in interventions aimed at improving health outcomes when the intervention undoubtedly includes a social component such as physical activity in a group.<sup>198,199</sup> Thus, there is recognition of a potential health effect of social interventions but quantifying it has seldom been a subject of study. Instead, the interaction between social capital components and other non-pharmacological interventions (e.g., physical activity, health education...) to achieve health effects should be a research focus. Likewise, research should gain knowledge on how social support interventions enhance behaviour change in a variety of healthy lifestyles relevant for the ageing process.
3. Research should address the **effectiveness** of social capital interventions, including those aimed at alleviating loneliness, to build an **evidence base** of the health impact of this type of programmes. Accordingly, social capital interventions should be framed as **complex interventions**, applying a **transdisciplinary approach**, and should be conducted and reported applying **quality standards**. A research focus should be on whether and, if so, how interventions based on different **social capital dimensions and directions achieve differential health effects**. Health outcome measures should be standardised, comprising subjective and objective aspects, positive (i.e., salutogenic) and negative health dimensions (i.e., ill health), including promotion and prevention in the field of mental health and their effects in enhancing behaviour changes. The impact on the **use of health and social resources and cost-effectiveness** should be considered a priority to guide decision-making in policy.
4. Efforts should be put into understanding and improving **processes** involved in social capital interventions and those aimed at alleviating loneliness among older people. Regarding **implementation, fidelity, adherence**, and tailoring are major issues. Hence, there is a need to analyse **mechanisms of impact**, for instance whether and how social outcomes mediate health changes and also the role of the **length and intensity** of the intervention and the type of **relationship** between the intervention and health effects (e.g., linear, threshold) should be clarified. The influences of **context** on how to successfully build and enhance social capital remain a focus to be further explored.
5. Further research should gain specific knowledge of the **target population**, i.e., distinguishing which specific subgroups (e.g., nursing home residents, caregivers and those suffering from chronic conditions) could benefit the most considering the diversity of interventions, contexts and outcomes. Loneliness requires special attention as a condition to target and as an outcome.

6. Complementarily, in line with our qualitative evaluation (currently in submission process), **qualitative evaluations** of interventions are urgently needed to explore the aforementioned intervention processes addressing the complexity and the context specificities of social phenomena. Moreover, qualitative procedures will be appropriate to explore processes of change experienced by participants and the perceived intervention effects that are difficult to detect otherwise and to quantify. Furthermore, knowledge is required on how to **tailor** these interventions to the diversity of personal needs and characteristics, socio-economic and cultural contexts (e.g., family-based vs. individualistic) and welfare systems. It remains a challenge to include and maintain persons suffering from health limitations that are closely linked to loneliness such as mobility disability, depression and hypoacusia. Therefore, strategies are needed to focus on those persons with social and health **vulnerabilities** and, consequently, at risk of being excluded from a programme, of dropping out or of being socially excluded during or after the programme, in order to reduce and not increase **health inequalities**. Particularly **flexible designs** with individual and group-based components, and remote and face-to-face delivery modes may be better to meet specific needs and reduce selection bias.
7. More research in loneliness and social capital interventions is needed from a **gender perspective in Southern European countries**. For instance, differential strategies should be designed to successfully recruit both men and women.
8. Regarding the **intervention design**, intervention should be based on **logic models**. New elements should be included in the programmes to guarantee the **continuity of the groups** (in the case of group-based interventions such as those presented in this thesis), **long-term effects** and their **sustainability**. It is also important to address how to increase **adherence and reduce attrition and how to establish mechanisms to detect, solve and report adverse events**.
9. **Implementation research** should explore whether and how **health professionals' behaviours** are challenged when implementing social capital practices to improve older people's health. Likewise, research on **social prescribing** is needed to understand whether and how different intervention models work first on changing professionals' and patients' behaviours embedded in social prescribing and, secondly, on achieving health outcomes.
10. It is important to note that our work did not consider **professional support** as part of social support. However, professionals constitute a formalized social relationship with patients and provide support (e.g., facilitating groups, through home visits...). Accordingly, professional support provided by health and social care professionals may also have relevant consequences on health, for instance in programmes such as case-management, stroke liaison worker and Chronic Disease Self-Management Programmes.<sup>200,201</sup> Therefore, further research should explore the impact of professional support and its implications for health care practice and policy.
11. Research should acquire further knowledge about how social capital interventions might contribute towards **reducing health inequalities**.

12. Finally, this thesis opens up a **debate for research**: How much impact would a social capital intervention need to have, and on which health outcomes, to be recommended for implementation in health care practice? From our standpoint, the question is not whether social capital interventions are worthy or not. At the current stage, research on social capital interventions is indeed an umbrella encompassing a diversity of interventions in the social dimension of ageing, and we should move forward to understand what to do and how. It is important to note that beyond the potential of social capital to improve health outcomes, the most ambitious goal of social capital-based interventions is to promote a more **meaningful life**, a more **meaningful ageing**.

### 7.3. FINAL CONCLUSIONS

- 1) Public health, health care and long-term care should establish how to address loneliness as a **risk factor** for health, and social support and participation as protective health factors among older people. Furthermore, these factors should be especially considered from a salutogenic approach as **sources of health** and well-being, and thus as a way of contributing to a more **meaningful life** in ageing.
- 2) The concept of **social capital**, derived from Putnam's approach and operationalized as an umbrella concept that encompasses social support and participation, is seen as appropriate and useful to build an evidence base, to guide social capital interventions and to describe intervention models.
- 3) Our **systematic review** has shown that evidence from randomized trials promoting social capital is scarce, disperse, diverse, and weak, but our findings suggest the potential of social capital interventions to impact health.
- 4) Context-specific and theoretically framed programmes are needed to achieve positive changes in **lonely** older people by promoting their **empowerment** and considering the complexity of loneliness.
- 5) The football-based reminiscence programme could be further applied in long-term care settings and could inspire other programmes based on **meaningful activities**, especially applying its approach of **science with and for society**.
- 6) Promoting social capital in an ageing society could be a paradigmatic **win-win proposition** from a public health perspective, specifically in the Spanish context. However, social capital interventions in older age are highly influenced by gender, social and health vulnerabilities and also cause minor adverse effects, currently understudied. Accordingly, social capital interventions may have major implications in health inequalities.
- 7) Achieving the potential health benefits of social capital faces a major challenge: understanding and managing the **complexity** of effectively improving existing networks and successfully creating new ones while considering costs and adverse effects.
- 8) Social capital research and practice is needed to finally build the **third pillar of the biopsychosocial health model** as an inclusive scientific model, reinforcing actions in the social dimension and thus fulfilling the complexity of addressing health from pathogenesis to salutogenesis. We open up a debate on shared responsibilities among professionals and citizenship.

*“The proposed biopsychosocial model provides a blueprint for research, a framework for teaching, and a design for action in the real world of health care. Whether it is useful or not remains to be seen. But the answer will not be forthcoming if conditions are not provided to do so. In a free society, outcome will depend upon those who have the courage to try new paths and the wisdom to provide the necessary support”.*

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Anna Mas i Talens

A hora ya es una libertad  
de preguntar: "hola, ¿cómo  
estás?" Antes nada más era  
"adiu, bon dia, passi-hobe, ya està."

Now we have the freedom to ask: "Hello, how are you?". Beforehand it was just: "Good morning, have a good day", that was it.

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## 9. Annexes



Está llenu de expresiones.  
Cada una ha expresado  
lo que en aquel momento  
sentía o le parecia que estaba bien

**It's full of expressions. Everyone expressed what they felt at that time, or what they thought was appropriate.**

## 9. Annexes

### 9.1. Annexes of the articles in submission process

#### 9.1.1. Methods

#### **Article n.2: A taxonomy proposal (SOCAI) to guide the use of social capital in interventions aimed at improving health among older people.**

The taxonomy was theoretically and empirically driven.

The **theoretical part** was the starting point to build the taxonomy. A new framework was developed to guide the characterization of social capital interventions while considering the link between social resources and health.

Therefore, we selected two theoretical frameworks as appropriate, one on social capital and one on health:

- The operationalization of social capital as an umbrella concept adapted to the ageing process.<sup>88,89,86,90,91</sup>
- The Health Development Model.<sup>89,91,202</sup>

The first framework has already been presented in the background.

The **Health Development Model** defines two distinct but complementary perspectives on health: pathogenesis and salutogenesis.<sup>6,202</sup> According to **pathogenesis**, the dominating biomedical paradigm, health is generated through health protection, prevention and health care; it is thus oriented towards risk factors and ill health. While **salutogenesis** focuses on health promotion and it is based on positive health and social and personal resources.<sup>203</sup>

In addition, the main effects model and the stress buffering model presented in the background were taken into consideration. Accordingly, the main effects model was considered as connecting social capital and health in line with salutogenesis while the stress buffering model was aligned with pathogenesis.

Furthermore, we considered the TIDieR guidelines and the typology of programmes aimed at promoting social participation for older people.<sup>74,75</sup>

In a further step, goals, contents, processes and context were considered the main domains of the taxonomy as key implementation challenges of social capital interventions. Accordingly, an initial taxonomy with pre-specified domains on goals, contents, processes and context was established and their respective subdomains and categories were first defined according to the new developed framework.

The **empirical part** was based on the 36 trials included in a previous systematic review.<sup>178</sup>

We applied the initial taxonomy to the intervention characteristics of the included trials. The taxonomy was then revised iteratively to ensure that all characteristics of the included trials were appropriately categorized. Further revisions were made to the subdomains and categories to ensure appropriate categorization of the intervention characteristics.

## **Article n.4: “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.**

This section describes the qualitative evaluation of the intervention “CAMINS: DE LA SOLITUD A LA PARTICIPACIÓ” (*PATHWAYS: FROM LONELINESS TO PARTICIPATION*) conducted in the community targeting lonely older adults.

### **Design of the qualitative evaluation**

A descriptive-interpretative qualitative study was selected to identify the perceived impact of the programme on participants (i.e., older people) according to their experiences. These findings were triangulated with the perceptions of volunteers and health and social care professionals, as agents involved in the programme, and with the observations of researchers.

This research applies the framework of the Active Ageing paradigm formulated by the WHO.<sup>14</sup>

### **Study participants involved in the qualitative evaluation**

The study population were 26 older people who participated in the programme, nine volunteers and six professionals. All of them were invited face-to-face to take part of this qualitative study by the researcher (LCP) and agreed to participate. All were women except one participant who was a man. Table 1 details the main characteristics of all 41 informants.

We intended to interview all 26 participants who finished the programme among 38 older people who started, but 23 were available. Moreover, one participant from each intervention group who had dropped out was selected taking into account their gender and the heterogeneous reasons to leave the programme: two women, one dropped to care for a family member and the other had an injurious fall, and one man who started an activity in the same time of the programme. Furthermore, nine older volunteers who accompanied the three intervention groups were interviewed. One man and one woman initially involved as volunteers were not available. All six professionals involved as facilitators or observers were interviewed.

### **Data collection techniques**

Three focus groups with older participants and 36 semi-structured interviews were conducted: 26 to older participants, six to professionals, one to a volunteer and three to small groups of volunteers. Interviews and focus groups were conducted at the end of the intervention, in June-July 2012. Most older people were interviewed twice: in the focus groups conducted in their natural group during the last session of the programme and in an individual interview, in order to gain more personal information on their situation previous to the programme, the process done and effects perceived.

Moreover, participant-observation was conducted in all 15 sessions of the programme in the three zones by one or two researchers, providing a total of 58 field notes from observations. Consequently, researchers established a rapport with participants along the 4.5 months. Participants were aware of the researchers' involvement in the programme.

Semi-structured interviews and focus groups were used following a topic guide with open-end questions (see Annex 1). Focus groups with participants explored the perceived effects on participants regarding loneliness, social support and participation and health accounting for contextual factors. In the interviews, participants were asked about their loneliness and participation previous to the programme and the effects perceived. Volunteers and professionals were asked about their perceptions on the process and effects on participants. Interviews with participants were partly done at participants' home and partly in a local senior club. Focus groups and interviews with professionals and volunteers were conducted in each primary health care center. Interviews took around one hour and focus groups around 1.5h. All techniques were conducted by two female researchers (LCP, medical doctor, and GV, sociologist).

### **Analysis of the qualitative data**

All conversational techniques were digitally recorded and transcribed (by DR, sociologist). A thematic interpretative content analysis was conducted. There was a continuous cross-checking between the coding and the source of the data that combined a deductive with an inductive approach. Data were initially coded according to pre-defined themes (experiences previous to the programme, the process and effects, influences of health and context). In parallel, further themes emerged and were included in the final analysis.

Two researchers (DR and LCP) independently coded the first transcripts. Afterwards, the analysis was led by LCP and monitored by regular meetings with DR. The analysis involved a triangulation of techniques, of researchers and informants. An informative richness for a deeper understanding of the phenomenon was achieved and data saturation was reached in the main categories for women.

Finally, results were articulated to build an explicative framework of the process of change that participants underwent along the programme and their perceived effects with the main influencing factors. This framework was discussed with all research team and verified with the corpus when needed. Informants verified results by providing their feedback on preliminary results.

### 9.1.2. Results

#### Article n.2: A taxonomy proposal (SOCAI) to guide the use of social capital in interventions aimed at improving health among older people.

**Objective:**

*To develop a taxonomy (classification system) grounded on social sciences theories and current epidemiological evidence to characterize social capital-based interventions according to health-related goals, social capital-related contents, processes and contexts.*

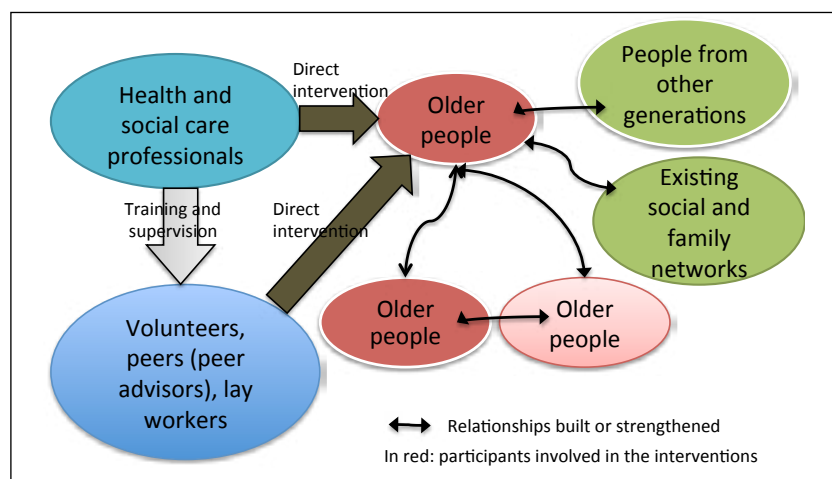
The SOCAI taxonomy is the first to systematize knowledge on the use of social capital in interventions to improve older people’s health. It is the result of integrating a social capital framework adapted to ageing and the salutogenic and pathogenic approaches of the Health Development Model, with the characteristics of the included trials of a previous systematic review. It disentangles the complexity of social capital interventions regarding goals, contents, processes and context as major challenges for research and implementation.

The first domain addresses health-related purposes that the interventions seek, and whether the goal follows a salutogenic and/or a pathogenic approach. The second domain focuses on social capital components built within the intervention design. The third domain classifies the delivery procedures and the agents involved. The last domain addresses the context of the intervention.

Specifically, the proposed taxonomy aims to be a helpful guide for existing or new interventions that seek a variety of health-related goals, explicitly differentiating and combining social capital dimensions, directions and levels, procedures and agents that can be applied in different contextual characteristics.

We would like to highlight our specific contribution describing how do health and social care professionals promote social capital among older people, as shown in the following figure 7.

**Figure 7. How do health and social care professionals promote social capital among older people?**





Health and social care professionals have two different and complementary roles:

1. Direct intervention with older participants:

- Constituting a formalized social relationship and provide themselves support (e.g. a nurse gives individualized support at home).
- Mobilizing participants own social and family network.
- Facilitating support among older adults (e.g., support groups, peer support between dyads created in the intervention).
- Facilitating social ties between older people and people not participating in the intervention (e.g., through engagement in personally meaningful social activities), or among older people and persons from other generations (e.g., intergenerational programmes).

2. Training and supervising volunteers or lay workers to do the direct intervention of providing non-professional support. A specific case of volunteers are peers.

In addition, social capital-based intervention foster relationships in two main ways:

- Building new ties:
  - Among older participants.
  - Between older participants and older people outside of the interventions.
  - Between older participants and people from other generations who are also target of the intervention.
- Strengthening existing networks within participants' own social and family networks. Two specific cases are the interventions involving caregivers and carerecipients and fostering their relationship and enhancing relationships among older people living in the same nursing home.

Therefore, the SOCAI taxonomy complements current guidance on complex interventions and adds knowledge to the existing literature on how to improve the design of interventions that embed social capital to improve health among older people, their implementation procedures and process evaluation regarding mechanisms of impact, implementation and context.

The SOCAI taxonomy considers multiple answers and seeks to be dynamic in characterizing intervention strategies. Therefore, it does not attempt to classify programmes in one or the other category; instead, it attempts to guide interventions by clarifying concepts, drawing potentials and opening possibilities.

*Concluding, the SOCAI taxonomy is the first attempt to systematize knowledge to fill the gap between social capital theory and practice. It was built according to available social capital and health theories and current epidemiological research findings. It provides a useful guide to promote the introduction of social capital as a protective health factor into intervention strategies targeting older people. Therefore, it could inform health and social care practice and policy.*

## Article n.4: “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.

### *Objectives:*

*To explore participants’ experiences on loneliness and social participation prior to the intervention; describe whether and how the intervention had an effect on loneliness, social participation and support and health; describe whether and how participants’ health and the context influenced these processes.*

Analysis revealed that older persons with diverse profiles of loneliness and participation. In all intervention groups, two profiles of participants were identified regarding previous experiences on participation. The first profile was composed by **participants with no previous experience** in formal participation, most of them had had a life focused on family and house care. They had no information on community assets or had prejudices, especially on senior clubs. The second profile had a **previous experience in social participation**. They stopped participating due to age-related health problems or when becoming widow, in the cases in which their participation had been linked with their husband.

Regarding loneliness, three main profiles of participants were identified regarding loneliness when entering the programme. In the first profile participants expressed their loneliness was a consequence of **widowhood**. The second profile comprised participants who expressed to be **solitary**. They felt well alone and living alone but expressed having **fear to relate** with others or a **lack of social relationships**. In the third profile, participants were suffering from **loneliness in company**. They had moved to live with their children due to health problems, or their children and grandchildren had moved to live with them due to economic problems. They expressed missing their own space and a lack of communication with their children.

Participants decreased their loneliness, increased their knowledge about local community assets and their participation in activities, and developed companionship, sense of belonging, peer support and friendship. Moreover, their mental wellbeing increased, depressive symptoms decreased and participants could deal better with their discomforts regarding health or family problems. An empowerment process was observed, participants discovered or recovered new freedoms breaking dependences and the sense that life was worth living. However, loneliness persisted among some widowed participants and health and social vulnerabilities hampered impacts in participation and social relationships. Conflicts and exclusion were occasional unintended effects.

In the urban context, in contrast with the semi-rural, the programme contributed to less hostile neighbourhoods and previous knowledge among participants was less frequent but more favourable to develop friendships.

The article contains a figure showing the explanatory framework of the experiences of participants before, during and after the programme.

Results of the qualitative and quantitative evaluation of the programme were convergent regarding effects on loneliness, social support and participation but only qualitative findings suggested health effects that validated scales could not detect at post-intervention but at two years follow-up, i.e., a decrease in depressive symptoms.

**Concluding,** this study allowed gaining a deeper understanding on the complex processes that are involved in the promotion of social relationships and participation in ageing to alleviate loneliness, how they are interrelated with health, socio-economic factors and age-related disability. Specifically, it has clarified how an intervention that promotes social capital tackles these conditions enhancing processes of change among lonely older people.

### 9.1.3. Completed articles

#### **ARTICLE 2:**

**A TAXONOMY PROPOSAL (SOCAI) OF THE USE OF  
SOCIAL CAPITAL IN INTERVENTIONS AIMED AT  
IMPROVING HEALTH AMONG OLDER PEOPLE.**

Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Monteserín, R.

(ARTICLE IN SUBMISSION PROCESS)

**TITLE:**

**“A TAXONOMY PROPOSAL (SOCAI) TO GUIDE THE USE OF SOCIAL CAPITAL IN INTERVENTIONS AIMED AT IMPROVING HEALTH AMONG OLDER PEOPLE”**

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**ABSTRACT**

**Objectives:** We aimed to develop a taxonomy to guide the use of social capital in interventions that seek to improve health among older people by characterizing their goals, contents, processes and contexts.

**Methods:** A framework was developed based on social capital and the Health Development Model. The taxonomy was further developed considering 36 trials from a previous systematic review.

**Results:** The first domain addresses health-related purposes that the interventions seek, and whether the goal follows a salutogenic and/or a pathogenic approach. The second domain focuses on social capital components built within the intervention design. The third domain classifies the delivery procedures and the agents involved. The last domain addresses the context of the intervention.

**Discussion:** The SOCAI taxonomy is the first to systematize knowledge providing a useful guide to promote the use of social capital as a protective health factor into intervention strategies targeting older people in research, practice and policy.

### **KEYWORDS**

Taxonomy, ageing, social capital, complex interventions, health.

### ***INTRODUCTION***

The ageing process entails major changes in the social environment mainly due to retirement, loss of peers and age-related disability. Therefore, older people are especially at risk of social isolation and loneliness (Nyqvist, Cattan, Andersson, Forsman, & Gustafson, 2013). Additionally, the lack of social integration contributes to poor health (Holt-Lunstad, Smith, & Layton, 2010). At the same time, some current societal challenges like changes in the family structures reinforce these phenomena by increasing the number of people living alone. Nevertheless, other social changes such as the increasing use of new technologies provide new opportunities for social interactions in ageing. Moreover, the WHO Active Ageing policy underlines the relevance of social participation and highlights that social networks shape resilience and health throughout life while prompting Governments to work in this line (International Longevity Centre Brazil (ILC-BR), 2015; World Health Organization, 2002). Likewise, the vision of ageing is slowly but increasingly moving from a protection approach towards older people as vulnerable human beings to a framing of generativity, emphasising older people's productive and collective roles (Fried, 2016). Therefore, in this paper, we focus on the use of social capital in interventions

understood as social activities or social programmes that provide interactions with others in society or the community (Levasseur, Richard, Gauvin, & Raymond, 2010; Raymond et al., 2013). Specifically, we focus on programmes designed and implemented to improve older people's health as a major challenge for public health to contribute to Active Ageing.

### **Social capital: theoretical approaches and current evidence**

Several definitions of social capital have been proposed but two main conceptualizations prevail (S. Moore, Haines, Hawe, & Shiell, 2006). While the social cohesion approach from Putnam refers to social capital as a public good based on community activities, the social network approach from Coleman understands that social networks have different values for different individuals (Coleman, 1988; Weil & Putnam, 1994). From an ageing perspective, Putnam's definition of social capital, which is the most popular in health research, has been problematised and adapted to older age (Nyqvist & Forsman, 2015). During ageing, health and functional ability deteriorate, limiting the ways in which older people participate and engage in community life. Therefore, Nyqvist et al. proposed placing more relevance on the interaction between individuals, i.e., at the micro level (Nyqvist, Forsman, Giuntoli, & Cattani, 2013).

Accordingly, we understand social capital as an individual and collective feature that embeds several social resources that are object of our research such as social support and social participation. This framework allows a comprehensive overview of social resources relevant for health, classifying them into cognitive and structural dimensions and bonding, bridging and linking directions, as well as deconstructing the concept to address each social resource independently (Nyqvist, Pape, Pellfolk, Forsman, & Wahlbeck, 2013a). It also helps to understand the interaction between context and social factors.



Social resources embedded in social capital such as social support and social participation are well-established protective health factors with a magnitude of effect comparable to smoke cessation and physical activity, according to observational studies and meta-analyses of these (Forsman, Nyqvist, & Wahlbeck, 2011; Holt-Lunstad et al., 2010; Nyqvist, Pape, Pellfolk, Forsman, & Wahlbeck, 2013b).

The traditional use of social interventions in clinical trials of non-pharmacological interventions has been to wash out the effects of its social components. Hence, social interventions are applied as “placebo” intervention in the control group, for instance when studying the health effects of physical activity in a group (Fielding et al., 2011; Pahor et al., 2014). Thus, there has been recognition of a potential health effect of social interventions but quantifying it has seldom been an object of study.

Nevertheless, evidence of social capital interventions improving health outcomes among older people is starting to grow. Some high quality trials and systematic reviews have shown effectiveness and cost-effectiveness in a variety of health-related outcomes (Carlson et al., 2015; Coll-Planas et al., 2016; Forsman, Schierenbeck, & Wahlbeck, 2011; Laakkonen et al., 2016; Pitkala, Routasalo, Kautiainen, & Tilvis, 2009; Tan, Xue, Li, Carlson, & Fried, 2006). However, interventions that use social capital or their components are complex and diverse and further evidence is still needed to understand the processes and effects involved.

The multiplicity of definitions of social capital and its diverse dimensions make it difficult to envisage effective intervention strategies to build and enhance social capital (Murayama, Fujiwara, & Kawachi, 2012). The variety of health-related goals they seek, social capital-related contents, procedures and context are major challenges for research and implementation. Moreover, delivery and communication modes, among other intervention characteristics, have major implications on the development of social interaction processes among older people.

Empirical research and current practices aimed at improving health among older people by using social capital often seek to increase well-being or mental health,

alleviate loneliness, promote healthy lifestyles or improve self-management of chronic diseases (Coll-Planas et al., 2016). Programmes are often based on support groups and peer support, social activities, befriending schemes and/or engaging participants in social activities. Many programmes promote establishing new relationships, including intergenerational activities, while some interventions involve members of the existing support network. They comprise group and individual interventions, the latter mainly based on home visits or visits to the nursing home. Finally, they involve a wide range of health and social care professionals and volunteers. However, there is still a lack of an overview and of theory and evidence-based conceptualization of current practices that involve social capital or its components.

Furthermore, context is critical in ageing, health and social capital (Nyqvist & Forsman, 2015), since personal networks are embedded in a broader social structure (Kawachi & Berkman, 2001). Thus, macro-social processes are dynamically linked with cognitive, emotional, behavioural, and biological pathways at an individual level and explain how social capital components affect health (Berkman & Glass, 2000). Data on micro and meso levels of context show differentiated influences on individual health (Giordano, Ohlsson, & Lindström, 2011). In addition, the influence of social networks on well-being seems to differ across societies and welfare states (Litwin, 2010; Rostila, 2013). While collectivist societies emphasise the interdependence between humans, individualistic societies do not. At a welfare state level, differences across cultures and welfare systems (e.g., social-democratic, liberal, Mediterranean, conservative-corporatist, post-socialist) play major roles in social capital (Islam, Merlo, Kawachi, Lindström, & Gerdtham, 2006; Nyqvist & Forsman, 2015). Thus, the social capital existing within a community influences effectiveness of a program on health outcomes (Murayama et al., 2012). However, the implications of context on how to build and enhance social capital to improve health among older people are largely unknown.

## Taxonomies and related guidance

Taxonomies are useful to systematize knowledge and hence inform practice, policy and further research (Abraham & Michie, 2008).

Social capital interventions are complex interventions and guidance to address complex interventions is increasingly growing in public health, such as the TIDIER reporting guidelines focused on the description of any complex intervention (Craig et al., 2008; Hoffmann et al., 2014). Moreover, the Medical Research Council has provided guidance on how to conduct a process evaluation of complex intervention considering implementation, context and mechanisms of impact (G. F. Moore et al., 2015). However, no specific guidance on interventions that use social capital with a health purpose has been provided. Remarkably, from an equity perspective, the PROGRESS PLUS framework defines as equity indicators: Place of Residence, Race/Ethnicity, Occupation, Gender, Religion, Education, Socio-economic Status, Social Capital, Age, Disability, Sexual Orientation and Literacy. It also points out how to consider these indicators in systematic reviews (Tugwell et al., 2010).

Some taxonomies cover specific contents and have been successfully applied to build further evidence and to improve the design and implementation of evidence-based practice and inform policy, such as that on behaviour change techniques and the EPOC taxonomy of health systems interventions (Abraham & Michie, 2008; Effective Practice and Organisation of Care (EPOC), 2016; Susan Michie, van Stralen, & West, 2011; Schulz, Czaja, McKay, Ory, & Belle, 2010). Likewise, several taxonomies have been developed to systematically describe specific intervention contents relevant to ageing, such as the ITAX taxonomy that characterise interventions aimed at enhancing the health and wellbeing of family caregivers of persons with Alzheimer's disease, the taxonomy on social activities and the typology proposal on social participation programmes for seniors, which are based on the type of social situations, interactions, relationships and activities (Levasseur et al., 2010; Raymond et al., 2013). However, the latter do not include a health perspective.

## Rationale of the study and aims

There is an urgent need to systematize the use of social capital in interventions aimed at improving older people's health to promote its introduction into routine public health, health and social care practice and policy according to current research findings and available social capital and health theories.

Therefore, with the purpose of improving the design of interventions that use social capital to improve older people's health, their implementation and the process evaluation, we aim to develop a taxonomy (classification system) grounded on social sciences theories and current epidemiological evidence to characterize social capital-based interventions according to health-related goals, social capital-related contents, processes and contexts. Accordingly, the taxonomy addresses the following questions: "Why is the intervention based on social capital? Which social capital components are used in the intervention? How, by whom and where is the intervention delivered?".

## **MATERIAL AND METHODS**

The taxonomy was theoretically and empirically driven. As a starting point, to build the taxonomy, a new framework was developed to guide the characterization of the interventions while considering the link between social resources and health.

We selected two theoretical frameworks on social capital and health as appropriate: the operationalization of social capital as an umbrella concept adapted to the ageing process and the Health Development Model (Bauer, Davies, Pelikan, & The EUPHID Theory Working Group, 2006; Islam et al., 2006; Nyqvist, Forsman, et al., 2013). The first one is based on Putnam's approach of social capital. In its operationalization, social resources are grouped into the following *dimensions*: social networks, social contacts and participation belonging to the *structural* or objective aspects, and social support, sense of belonging and trust corresponding to the *cognitive* or subjective

aspects (Nygqvist & Forsman, 2015; Nyqvist, Forsman, et al., 2013). Furthermore, depending on the *directions* of social ties, social capital is defined as bonding (intra-group ties between members sharing common characteristics), bridging (ties between heterogeneous groups) or linking (relationship between individuals and groups of individuals or institutions that possess unequal wealth, power, and status) (Islam et al., 2006; Putnam, 2000; Woolcock, 2001). Moreover, considering the ageing process, this definition places relevance on the interaction between individuals in various social contexts at an *individual* or micro level and at a *collective* level, comprising the meso (neighbourhood) and macro (society) contexts (Nygqvist, Forsman, et al., 2013).

The Health Development Model defines two distinct but complementary perspectives on health: pathogenesis and salutogenesis (Mittlemark et al., 2017) (Bauer et al., 2006). According to pathogenesis, the dominating biomedical paradigm, health is generated through health protection, prevention, treatment and health care; it is thus oriented towards risk factors and ill health. While salutogenesis focuses on health promotion and it is based on positive health and social and personal resources (Eriksson & Lindstrom, 2008).

From a psychological perspective, two not mutually exclusive processes explain how social support may affect health and well-being: the stress buffering and the main effects model (Cohen & Wills, 1985). The first model emphasizes the role of social support buffering the negative consequences of stressors (e.g., the stressful experience of caregiving a person with dementia). The second model describes the overall protective health effects of social integration by influencing health-related behaviours (e.g., peer support can encourage physical activity), social engagement (thus enhancing social and meaningful roles, identity and sense of belonging), exchange of social support (emotional, cognitive, informational and instrumental) and access to material resources (Berkman & Glass, 2000; Cohen, Gotlieb, & Underwood, 2000).

Therefore, the main effects model was considered as connecting social capital and

health in line with salutogenesis while the stress buffering model was aligned with pathogenesis.

Furthermore, we considered the TIDIER guidelines and the typology of programmes aimed at promoting social participation for older people (Levasseur et al., 2010; Raymond et al., 2013).

In a further step, goals, contents, processes and context were considered the main domains of the taxonomy as key implementation challenges of social capital interventions. Accordingly, an initial taxonomy with the aforementioned pre-specified domains was established and their respective subdomains and categories were first defined according to the new developed framework.

The empirical part was based on the 36 trials included in a previous systematic review (Coll-Planas et al., 2016). The review included randomized controlled trials with interventions focused on social capital or its components (e.g., social support and social participation), targeting older people (participants over 60 years old) and assessing any health outcome. Trials were clinically and methodologically diverse and reported positive effects in different contexts, populations and interventions across multiple subjective and objective health outcomes.

We applied the initial taxonomy to the intervention characteristics of the included trials. The taxonomy was then revised iteratively to ensure that all characteristics of the included trials were appropriately categorized. Further revisions were made to the subdomains and categories to ensure appropriate categorization of the intervention characteristics.

## **RESULTS**

The developed taxonomy was called the SOCAI taxonomy and characterizes social capital-based interventions according to health-related goals, social capital-related contents, processes and contexts. Accordingly, it contains four main domains, with their respective subdomains and categories, as presented in **Table 1**.

## **Domain 1: goals**

This domain disentangles the variety of health-related goals that interventions seek using social capital.

The first subdomain aims to identify the main purposes, and its categories show those purposes found in the systematic review.

As a next step, in the second subdomain, the goals are characterized as aligned with salutogenesis and/or pathogenesis, and whether they addressed positive health and/or risk factors or ill health, respectively. The first category includes intervention strategies that apply a salutogenic perspective. Among interventions with a global purpose, we can find those aimed at increasing well-being, quality of life and self-perceived health. Interventions with specific purposes include those that use social support to promote behaviour change: a healthy lifestyle such as physical activity or a better self-management of chronic conditions. They also comprise programmes aimed at improving physical health and mobility. In other interventions, social capital is used to promote positive mental health, for instance increasing positive psychological outcomes such as self-efficacy, self-esteem, ability to cope and happiness. While other interventions improve cognition, for instance neuropsychological parameters such as executive functions. Finally, interventions may be aimed at increasing the appropriate use of rehabilitation services. In the second category, the pathogenic perspective includes global purposes such as preventing disability, or specific ones like using social support to buffer stress in stressful experiences such as caregiving, relocation, end-of-life and chronic diseases. Other specific strategies target cases with an objective or perceived lack of social capital components such as people suffering from social isolation or loneliness, not engaged in social participation or with a poor social network or low support (e.g., recent widows). Moreover, some interventions treat, alleviate or prevent mental ill health such as depression and sleep disorders. Finally, some strategies attempt to decrease the inappropriate use of health care services such as



hospitalization, primary care and emergency departments visits and to avoid or delay nursing home placement.

### **Domain 2: content**

In the second domain, social capital content is first decomposed according to the social capital dimensions (structural and cognitive) and to the directions of the social relationships (bonding, bridging and linking). In the subdomain directions, relationships with peers and within family and other existing networks are classified as bonding, those with professionals as linking and intergenerational relations, and those with volunteers as bridging.

In the next subdomain, interventions are characterized as promoting new relationships and/or enhancing existing ones. The category “new relationships” usually comprises building ties among older participants and between them and people from other generations, also targeted by the programme. Whereas the category “existing relationships” applies when the intervention enhances current participants’ social and family networks, including dyads of caregivers and care recipients and residents living in the same nursing home.

In the last subdomain, interventions are characterized according to the level of approach as having an individual, setting or community approach depending on the reach of the intervention, i.e., targeting individuals at micro level, neighbourhoods or institutions (nursing homes, schools, etc.) at meso level or entire communities at macro level.

### **Domain 3: processes**

This domain answers “how” and “who” regarding the delivery of the intervention. It comprises the following subdomains: delivery and communication modes, social roles of older participants and agents involved in the delivery.

Delivery and communication modes are identified to characterize social interaction processes, if they are delivered on a group basis, one-to-one or by mixing both; as well as if communication is established face-to-face, remotely or combining both.

The social roles of older participants are classified as those applying a protection-based approach (i.e., considering older people as vulnerable) and those in which older people are productive and have collective roles. In the last case, participants might become volunteers for instance in intergenerational activities or even agents of social change.

The agents involved in the delivery of the interventions comprised different profiles of professionals and non-professionals as specified in Appendix Table 1. Most professionals from the included trials were from health and social care. In one case, performers trained as humour therapists delivered the programme. Non-professionals comprised volunteers and lay workers. In many cases, volunteers were peers who shared similar conditions with the participants, such as widowhood. Some trials involved students. In the category “modalities of involvement”, we show different patterns of how professionals and non-professionals were involved in the intervention delivery, including the self-management of the group among participants.

#### **Domain 4: context**

This domain answers “where” the intervention is delivered and includes anything external to the intervention, which impedes or strengthens its implementation or effects (G. F. Moore et al., 2015). Context involves community social capital, geographical and socio-cultural context, type of welfare system, policy context and setting.

Finally, each domain contributes to the purpose of introducing social capital into routine public health and healthcare practice and policy by guiding how to improve the design of interventions, their implementation and/or the process evaluation. The domain “goal” was aimed at supporting the intervention design and the assessment of mechanisms of impact in the process evaluation of interventions. The domain “content” supports the intervention design and the implementation (components, activities...) and the assessment of fidelity in the process evaluation of interventions. The domain “process” was planned to support the intervention design and the implementation and process evaluation in terms of procedures and agents. Finally, the domain “context” supports

the definition of the context characteristics in the process evaluation of interventions.

**Appendix Table 1** shows the SOCAI taxonomy applied to the included trials of the systematic review.

## **DISCUSSION**

The SOCAI taxonomy is the first to systematize knowledge on the use of social capital in interventions to improve older people's health. It is the result of integrating a social capital framework adapted to ageing and the salutogenic and pathogenic approaches of the Health Development Model, with the characteristics of the included trials of a previous systematic review. It disentangles the complexity of social capital interventions regarding goals, contents, processes and context as major challenges for research and implementation. Specifically, the proposed taxonomy aims to be a helpful guide for existing or new interventions that seek a variety of health-related goals, explicitly differentiating and combining social capital dimensions, directions and levels, procedures and agents that can be applied in different contextual characteristics.

Therefore, the SOCAI taxonomy complements current guidance on complex interventions and adds knowledge to the existing literature on how to improve the design of interventions that embed social capital to improve health among older people, their implementation procedures and process evaluation regarding mechanisms of impact, implementation and context.

The SOCAI taxonomy systematizes knowledge on the health-related purposes, content, context and contributors to social capital interventions, which could be promoted to improve older people's health, while considering different contextual characteristics.

Our taxonomy considers multiple answers and seeks to be dynamic in characterizing intervention strategies. Therefore, it does not attempt to classify programmes statically; instead, it attempts to clarify, draw potentials and open possibilities.

This taxonomy has been developed in the context of interventions targeting older people and comprises those community-dwelling and nursing home residents.

### **Strengths and weaknesses**

The SOCAI taxonomy was theoretically and empirically driven and has several limitations related with each methodological pathway.

First, this work uses the term social capital following a pragmatic approach and moving a step aside from the theoretical debates and controversies surrounding it. Certainly, the operationalized definition of social capital as an umbrella concept was a useful tool to develop the taxonomy (Islam et al., 2006; Nyqvist, Forsman, et al., 2013).

Second, the taxonomy involves a variety of concepts with polysemic uses, multiple interpretations and non-consensual definitions, such as social participation (Levasseur et al., 2010). This challenge is overcome by an inclusive taxonomy that is enriched by the diversity of uses and potential meanings of all terms involved.

From the empirical aspects, limitations are linked with the characteristics of the systematic review and the included studies. Trials were clinically diverse but more frequently conducted in the community, in urban areas of high-income countries and mainly targeted Caucasian older people without disability or dementia. Therefore, certain characteristics related with disadvantaged categories could have been missed.

Moreover, the systematic review excluded multicomponent interventions in which social capital was not the focus but a part of the programme, for instance next to health education or physical activity. Nevertheless, the taxonomy still applies to the social capital component of those. Aligned with that, psychological factors involved in psychosocial interventions were also beyond the scope of the taxonomy (Forsman, Schierenbeck, et al., 2011).

Interventions with a community approach and those in which participants become agents of social change are highly relevant features of social capital theory. Therefore, the taxonomy considers the three levels of approach and also the different social roles

although none of the trials from the systematic review corresponded to these categories.

### **Implications for future research**

This taxonomy can help researchers to conceptualize and design interventions and to gain a better understanding of differential health effects as a result of different intervention types, thus starting to build a more robust and more readily applicable evidence based on promoting social capital. In this vein, it can be useful to determine mechanisms of impact in process evaluation but also outcomes in the impact evaluation, and when reporting and synthesising social capital interventions from a health perspective.

This taxonomy also allows to apply evidence mapping to map current evidence of interventions that use social capital to improve health thus understanding the extent and distribution of evidence, what is known and where are the gaps that should guide further research (Hetrick, Parker, Callahan, & Purcell, 2010).

Additionally, implementation research should explore whether and how health professionals' behaviours are challenged when implementing social capital practices to improve older people's health (Susan Michie et al., 2011).

Nevertheless, the SOCAI taxonomy is seen as a first tool to develop a subsequent research to enrich and, if needed, modify it. Several steps could be undertaken for its refinement and finalization. End-users, including further experts in the field, older people and other stakeholders, could be involved to ensure the proposed taxonomy is a relevant and useful guide. Study designs other than clinical trials, such as participatory research, should be applied to enrich the taxonomy with community approach interventions and those in which participants become agents of social change. The equity indicators from the PROGRESS PLUS framework should be considered to reach studies with enough diversity in terms of population characteristics (socio-economic and educational level, levels of physical and mental disability, ethnicity, gender and sexual orientation) (Tugwell et al., 2010). In this vein, further

research could explore whether this taxonomy is also useful and applicable to other vulnerable populations such as caregivers and people with chronic diseases and disability. Furthermore, studies conducted in the variety of contexts (type of countries, cultures and welfare systems) should be also included to enrich the taxonomy. Finally, the levels of agreement when applying the taxonomy could be assessed.

Definitively, we advocate for a transdisciplinary approach in the context of integrative research to address the complexity of promoting social capital from a health perspective.

### **Implications for practice and policy**

The SOCAI taxonomy is a tool intended to support evidence-based practice and evidence-informed policy-making to promote social capital as a protective health factor in ageing. For instance, in the domain “process” we have shown how a diversity of professionals and non-professionals can assume complementary roles in promoting social capital among older people. Thus, the intervention success partly depends on health and social professionals’ actions and the interplay between professionals with different backgrounds and non-professionals (S Michie et al., 2005). Volunteers often respond to new profiles and assume novel responsibilities, and the role of lay workers in these interventions indicates the chance to create new workplaces in this area. Furthermore, according to the domain “context”, interventions included in the systematic review were conducted in a variety of settings, showing the potential to build and enhance social capital to improve health from health care centres but also in community centres, nursing homes, schools and at home. Hence, coordination of agents and institutions within health and social care and beyond calls for a public and community health perspective and gives rise to implementation challenges that require specific attention.

At policy level, first of all, this taxonomy could help policy makers to gain an overview on current practices that involve social capital or their components and enhance their theory and evidence-based conceptualization.

Secondly, it might help to promote a paradigm shift towards positive health, promoting protective factors for health, thus guiding the implementation of the salutogenic theory in practice to promote healthy ageing (Eriksson & Lindstrom, 2008). Indeed, even social capital interventions that were considered in the taxonomy to follow the pathogenic model are mobilizing personal and social resources, thus enhancing strengths.

Thirdly, this taxonomy can also provide useful insight about how to reduce inequalities, a current global priority in policy (UN Platform, 2015). In this vein, we encourage an inclusive approach when improving social capital (Tugwell et al., 2010).

Finally, the taxonomy could inform about how to apply the Active Ageing policy framework (International Longevity Centre Brazil (ILC-BR), 2015; World Health Organization, 2002) and enhance the vision of ageing in the frame of generativity, promoting older people's productive and collective roles (Fried, 2016).

Accordingly, policy is challenged in two ways: by the multilevel approach advocated by the WHO involving all stakeholders and end-users and by the intersectorial actions in line with "health in all policies".

## **Conclusions**

The SOCAI taxonomy is the first attempt to systematize knowledge to fill the gap between social capital theory and practice. It was built according to available social capital and health theories and current epidemiological research findings. It provides a useful guide to promote the introduction of social capital as a protective health factor into intervention strategies targeting older people. Therefore, it could inform health and social care practice and policy.

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## Declarations

- Ethics approval and consent to participate: Not applicable.
- Consent for publication: Not applicable.
- Availability of data and material: All data generated during this study are included in this published article and its supplementary information files. Analysed data are available from the corresponding author on reasonable request.
- Competing interests: The authors declare that they have no competing interests.
- Funding: No funding was received for this study.

TABLES, FIGURES AND APPENDIX (*SUPPLEMENTARY MATERIAL*)

**Table 1.** Taxonomy of social capital interventions

**Appendix Table 1.** Taxonomy of social capital interventions applied to included trials

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Table 1. The SOCAI taxonomy of social capital interventions

DOMAIN	QUESTION ADRESSED	SUB-DOMAIN	CATEGORY	IMPLEMENTATION GUIDANCE
1. Health-related intervention goals	WHY is the intervention based on social capital? What is the main purpose that the intervention seeks when intervening in social capital?	Main health-related purpose of the social capital intervention ( <i>not mutually exclusive</i> ).	<p>To promote well-being and quality of life.</p> <p>To improve self-perceived health.</p> <p>To improve mental health.</p> <p>To alleviate loneliness.</p> <p>To increase cognition.</p> <p>To improve physical health.</p> <p>To promote healthy lifestyles.</p> <p>To improve self-management of chronic diseases.</p> <p>To promote an appropriate use of health-related resources.</p> <p>To decrease mortality.</p>	<p>1. Support the intervention design.</p> <p>2. Support the assessment of mechanisms of impact in the process evaluation.</p>
	Do these goals promote positive health, thus following a <b>salutogenic approach</b> ? Do these goals alleviate or compensate ill health, thus following a <b>pathogenic approach</b> ?	Salutogenic and/or pathogenic approach ( <i>not mutually exclusive</i> ).	<p><u>Salutogenic approach, e.g.:</u></p> <p><i>Global purpose:</i></p> <p>To increase well-being, quality of life and self-perceived health.</p> <p><i>Specific purpose:</i></p> <p>To promote behaviour change:</p> <ul style="list-style-type: none"> <li>- a healthy lifestyle.</li> <li>- self-management of a chronic disease.</li> </ul> <p>To increase positive mental health.</p> <p>To improve cognition.</p> <p>To improve physical health and functioning.</p> <p>To increase the appropriate use of rehabilitation services.</p> <p><u>Pathogenic approach, e.g.:</u></p> <p><i>Global purpose:</i></p> <p>To prevent disability.</p> <p>To decrease mortality.</p> <p><i>Specific purpose:</i></p>	

			<p>To buffer stress.</p> <p>To compensate an objective or perceived lack of social support, social participation or social network (e.g., social isolation and loneliness).</p> <p>To alleviate mental ill health (including depression, sleep disorders, dementia risk, etc.).</p> <p>To decrease the inappropriate use of health care services (e.g., hospitalization, primary care and emergency departments visits).</p> <p>To avoid or delay nursing home placement.</p>	
<b>2. Social capital-related contents</b>	WHAT: which social capital components are built within the intervention?	<p>Social capital directions.</p> <p>Social capital dimensions</p> <p>New/existing relationships</p> <p>Level of approach</p> <p>Delivery mode</p>	<p><u>Bonding</u>: relationships with peers and within family and other existing networks.</p> <p><u>Bridging</u>: relationships with volunteers (including peer volunteers) and intergenerational relationships.</p> <p><u>Linking</u>: relationships with professionals.</p> <p><u>Cognitive social capital</u> (subjective): social support, sense of belonging, trust, etc.</p> <p><u>Structural social capital</u> (objective): social networks, social contacts, social participation, etc.</p> <p>New relationships.</p> <p>Existing relationships.</p> <p>Individual approach (social capital at micro level).</p> <p>Setting approach (social capital at meso level).</p> <p>Community approach (social capital at macro level).</p> <p>Group-based.</p> <p>One-to-one.</p> <p>Setting approach.</p> <p>Mixed.</p> <p>Face-to-face (it may include the use of new technologies).</p> <p>Remote (via computer, telephone...).</p> <p>Mixed.</p> <p>Beneficiary role: participants receive support from others. E.g., home visits</p>	<p>1. Support the intervention design.</p> <p>2. Definition of content (components, activities...)</p> <p>regarding the implementation procedures.</p> <p>3. Support the assessment of fidelity in the process evaluation.</p>
<b>3. Social capital-related processes</b>	HOW AND BY WHOM is the intervention delivered?	<p>Communication mode</p> <p>Social roles of older</p>		<p>1. Support the intervention design.</p> <p>2. Definition of procedures and agents regarding the implementation strategy and the process evaluation.</p>

		<p>participants</p> <p>Agents involved in the delivery of the interventions</p>	<p>by volunteers.</p> <p><u>Equals</u>: Participants interact with others as equals and there is a bidirectional exchange of mutual support, e.g., peer support.</p> <p><u>Volunteering</u>: Older people become volunteers in a helping role, they are providers of support to others. E.g., volunteering in schools.</p> <p><u>Agents of social change</u>: Older people become agents of social change on a collective level.</p> <p><u>Profiles</u>:</p> <p>Professionals: health and social care and others.</p> <p>Non-professionals: volunteers-peers-, lay workers, students.</p> <p><u>Modalities of involvement</u>:</p> <p>Direct professional intervention with the older participants (e.g., facilitating groups or conducting home visits).</p> <p>Professional-driven intervention towards self-management among participants (i.e., professionals initiate the intervention and the group continues on their own).</p> <p>Non-professionals conduct the direct intervention and professionals train and supervise them.</p> <p>Mixed: direct intervention from professionals and non-professionals.</p>	
<p><b>4. Social capital-related context</b></p>	<p>WHERE is the intervention delivered? In what context?</p>	<p>Community social capital</p> <p>Geographical and socio-cultural context</p> <p>Type of welfare system</p> <p>Policy context</p> <p>Setting</p>	<p>Existing social capital within the community.</p> <p>Urban/semirural/rural.</p> <p>Familistic/collectivistic country versus individualistic country.</p> <p>Social-democratic, liberal, Mediterranean, conservative-corporatist, post-socialist, etc.</p> <p>Any policies supporting or hindering the implementation and impact of the programme.</p> <p>Community: senior club, private homes, school, other.</p> <p>Hospital.</p> <p>Nursing home.</p>	<p>1. Definition of the context characteristics in the process evaluation.</p>

### Appendix 1. Taxonomy of social capital interventions applied to the included trials of the previous systematic review.

**Legend:**

This table presents the 36 included studies according to the context, goals, processes and social capital-related contents of the intervention.

In “AUTHOR/YEAR”: Only the main paper of the study is cited with the first author surname and year of publication. Completed references are shown at the end of the table.

AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS				SOCIAL CAPITAL-RELATED CONTENT								
		Main health-related purpose of the social capital intervention	Salutogenic and/or pathogenic approach	Delivery and communication mode	Social roles of older participants	Agents involved in the delivery of the interventions:		Level of approach		New vs. existing social capital		Dimension			Direction	
ID 1 Andersson, 1985	Community Urban area 6 social districts in Stockholm, Sweden	To alleviate loneliness	<i>Pathogenic approach:</i> To compensate a perceived lack of social support ( <i>Loneliness</i> )	Group-based Face-to-face	Equals	Home-help assistants set-up and close the group.	Professional-driven towards self-management among participants	Individual approach	New <input checked="" type="checkbox"/>	Existing	<input checked="" type="checkbox"/>	Cognitive <input checked="" type="checkbox"/>	Structural <input checked="" type="checkbox"/>	Bonding <input checked="" type="checkbox"/>	Linking	Bridging





AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS			SOCIAL CAPITAL-RELATED CONTENT							
		function by improving multiple behavioral risk factors (social, cognitive and physical activity) and achieve positive effects on intermediary risk factors for disability and other morbidities	To promote behaviour change: physical activity To improve cognition To improve physical health and functioning <i>Pathogenic approach:</i> To prevent disability	one with children Face-to-face	who support professionals in school (e.g. Librarian) where specially interact and support children but give support to each other (peers).	intervention with the older participants (specific case in which study participants act as volunteers) (Professional-driven towards self-management)	(School-based)							
ID 8 Friedland, 1992	Urban area Baltimore, Maryland, USA Public elementary schools	To increase the support experienced by stroke survivors and thus improve psychosocial outcomes	<i>Pathogenic approach:</i> To buffer stress	One-to-one including members of support system Face-to-face	Beneficiary	SSI therapist (Social Support Intervention)	Direct professional intervention with the older participants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ID 9 Gallagher, 1997	Community, from a large Health Maintenance Organization USA	To promote an appropriate use of the health care system	<i>Pathogenic approach:</i> To decrease the inappropriate use of health care services	Group-based Face-to-face	Equals	Initially, professionals facilitate peer support. Afterwards, discussions occur without professionals	Professional-driven towards self-management among older participants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ID 10 Gleibs, 2011	Nursing home South-west of England, UK Three care homes	To increase quality of life	<i>Salutogenic approach:</i> To increase quality of life	Group-based Face-to-face	Equals	Group facilitators were trained and experienced activity coordinators and social work students.	Mixed: direct intervention from professionals and non-professionals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ID 11* Gruenewald,	Community	To benefit health and	<i>Salutogenic approach:</i>	Mixed: group of peers, one-to-	Volunteering	Professionals train volunteers	Direct professional	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS				SOCIAL CAPITAL-RELATED CONTENT								
		To increase morale and to decrease depression and loneliness	<i>Salutogenic approach:</i> To increase morale  <i>Pathogenic approach:</i> To compensate the lack of social support To alleviate loneliness To alleviate mental ill health (depression)	One-to-one Only by telephone	Beneficiary and equals	Beneficiary and equals	Interviewers were mature women between 30-55.	Non- professionals conduct the direct intervention and professionals train and supervise them (peers as volunteers)	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
ID 14 Heller, 1991	Community Indiana, USA  Small town, small city and large city areas															
ID 15 Hind, 2014	Community UK Urban area  Interventions at home  Policy: Research priorities established by the UK National Institute for Health and Care Excellence (NICE) on further research on home-based interventions that could improve or successfully maintain the mental well-being of vulnerable, older people living	To maintain well- being	<i>Salutogenic approach:</i> To maintain well-being	Mixed: group of peers and one- to-one with volunteers Only by phone	Beneficiary and equals	Volunteer facilitators	Non- professionals conduct the direct intervention and professionals train and supervise them (volunteers, not specific)	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS			SOCIAL CAPITAL-RELATED CONTENT								
		agitation and behavioural disturbances and quality of life.	To increase quality of life <i>Pathogenic approach:</i> To alleviate mental ill health (depression, agitation and behavioural disturbances)	One-to-one Face-to-face	Beneficiary	home trained as LaughterBosses in humour therapy. ElderClowns: trained performers experienced in healthcare settings.	intervention with the older participants	(Nursing home-based)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>ID 20</b> Mantovani, 1996	Greater metropolitan Sydney Australia Nursing homes	To diminish symptoms of anxiety and depression related to their disease, thus improving quality of life.	<i>Salutogenic approach:</i> To increase quality of life  <i>Pathogenic approach:</i> To alleviate mental ill health (anxiety and depression)	One-to-one Face-to-face	Beneficiary	Trained volunteers.	Non-professionals conduct the direct intervention and professionals train and supervise them (volunteers, not specific)	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 21</b> McCurren, 1999	Nursing home Louisville, KY, USA Nursing home facilities Policy: Required assessments in nursing home settings (RAI/Minimum Data Set)	To alleviate depression	<i>Pathogenic approach:</i> To alleviate mental ill health (depression)	One-to-one Face-to-face	Beneficiary	Master's-prepared geropsychiatric nurse and volunteers. A psychiatrist was available for consultation.	Mixed: direct intervention from professionals and non-professionals (volunteers) + Supervision from another professional	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 22</b> McNeil, 1995	Community Montreal, Canada	To decrease depressive symptoms	<i>Pathogenic approach:</i> To alleviate mental ill health	One-to-one Face-to-face	Beneficiary	Non-professional undergraduate psychology	Non-professionals conduct the direct	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS					SOCIAL CAPITAL-RELATED CONTENT									
			(depression)					student	intervention and professionals train and supervise them (students)									
<b>ID 23</b> Mittelman, 1993	Community New York City Metropolitan Area	To delay institutionalization of Alzheimer's disease patients To alleviate mental ill health (depression)	<i>Pathogenic approach:</i> To buffer stress To alleviate mental ill health (depression) To avoid or delay nursing home placement	Mixed: group-based, family-based and one-to-one. Face-to-face and telephone	Beneficiaries and equals	Professional counselors	Direct professional intervention with the older participants	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 24</b> Mortimer, 2012	Community Shanghai, China At the neighborhood community center	To reduce dementia risk, improving neuropsychological parameters.	<i>Pathogenic approach:</i> To alleviate mental ill health (reduce dementia risk) <i>Salutogenic approach:</i> To improve cognition	Group-based Face-to-face	Equals	Group leader and an assistant	Direct professional intervention with the older participants	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 25</b> Neil Thomas, 2012	Community Hong Kong, China Community centers for older persons, which provide social and recreational day services for members	To increase physical activity	<i>Salutogenic approach:</i> To promote behaviour change: physical activity as a healthy lifestyle	Group-based Face-to-face and telephone	Equals	Research staff	Direct professional intervention with the older participants	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 26</b> Onrust, 2008	Community	To improve mental health and quality	<i>Salutogenic approach:</i>	One-to-one Face-to-face	Equals	Trained volunteer who	Non-professionals	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS				SOCIAL CAPITAL-RELATED CONTENT							
		To reduce loneliness	<i>Pathogenic approach:</i> To compensate a perceived lack of social support (loneliness)	Group-based Face-to-face	Equals	Professional leaders: Each group had two professional group leaders One was a specialist Registered Nurse and the other was an occupational therapist or physiotherapist.	Professional- driven towards self- management among participants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>ID 29</b> Routasalo, 2008	Community In six communities, Finland Groups met at the rehabilitation centers or group psychotherapy center	To reduce loneliness	<i>Pathogenic approach:</i> To compensate a perceived lack of social support (loneliness)	Group-based Face-to-face	Equals	Professional leaders: Each group had two professional group leaders One was a specialist Registered Nurse and the other was an occupational therapist or physiotherapist.	Professional- driven towards self- management among participants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 30</b> Quayhagen, 2000	Community California, USA Alzheimer's Disease Research Center	To increase in morale (subjective well-being)	<i>Salutogenic approach:</i> To increase wellbeing  <i>Pathogenic approach:</i> To buffer stress	Group-based Face-to-face	Beneficiary	Graduate students and licensed clinical personnel from psychology, social work, and nursing.	Mixed: direct intervention from professionals and non- professionals (students)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 31</b> Reinke, 1981	Nursing home Lawrence, Kansas, USA  Intermediate care nursing homes	To improve cognitive functioning and morale	<i>Salutogenic approach:</i> To increase quality of life To improve cognition	One-to-one Face-to-face	Beneficiary	Undergraduate student trained as volunteers.	Non- professionals conduct the direct intervention and professionals train and supervise them (students as volunteers)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>ID 32</b> Robinson, 2013	Hospital and nursing home Hillsborough, Auckland, New Zealand  Residential care	To decrease loneliness and depression, and increase quality of life	<i>Salutogenic approach:</i> To increase quality of life.  <i>Pathogenic approach:</i> To alleviate	Group-based Face-to-face and use of a robot	Equals	Activities coordinator of the nursing home	Direct professional intervention with the older participants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



AUTHOR/ YEAR	CONTEXT	GOALS		PROCESS				SOCIAL CAPITAL-RELATED CONTENT										
ID 36 Winter, 2007	Community Philadelphia, USA At home	To enhance caregiver ability to manage daily stressors	<i>Pathogenic approach:</i> To buffer stress  <i>Salutogenic approach:</i> To promote behaviour change: self- management of daily stressors	Group-based Only by telephone	Equals	Groups conducted by trained social workers.	Direct professional intervention with the older participants	Individual approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

\* ID 7 and ID 11 correspond to the same study, ID 7 is the pilot and ID 11 the definitive trial.



## **ARTICLE 4:**

**“NOT ALONE IN LONELINESS”: A QUALITATIVE  
EVALUATION OF A PROGRAMME PROMOTING SOCIAL  
CAPITAL AMONG LONELY OLDER PEOPLE IN PRIMARY  
HEALTH CARE.**

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Montserín R.

(ARTICLE IN SUBMISSION PROCESS)

**TITLE: “Not alone in loneliness”: a qualitative evaluation of a programme promoting social capital among lonely older people in primary health care.**

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#### ABSTRACT

A programme aimed at alleviating loneliness among older people by promoting social support and participation was conducted in primary health care centres in Spain in one semi-urban and two urban areas with low and medium socio-economic levels.

We aimed to explore participants’ experiences of loneliness and social participation prior to the programme, describe the perceived programme effects and the contextual influences. The perceptions of volunteers, professionals and researchers were used to triangulate the findings. A descriptive-interpretative qualitative design was used. 41 persons were included as informants; these comprised lonely older people as participants of the programme, health and social care professionals, and volunteers. Data were collected from late 2011 to mid-2012 through three focus groups, 36 semi-structured interviews and participant-observation of all 15 sessions of the programme. A thematic interpretative content analysis was applied.

The analysis revealed that older persons with diverse profiles of loneliness and participation had decreased their loneliness, increased their knowledge about local community assets and their participation in activities, and developed companionship, a sense of belonging, peer

support and friendship. Moreover, their mental wellbeing increased, depressive symptoms decreased, and participants could deal better with their discomforts regarding health or family problems. An empowerment process was observed. However, loneliness persisted among some widowed participants and health and social vulnerabilities hampered impacts in participation and social relationships. Conflicts and exclusion were occasional unintended effects.

This study contributed to understanding the complex processes involved in the promotion of social relationships and participation in ageing to alleviate loneliness, how they are interrelated with health, socio-economic factors and physical function. These findings could inform about future designs, implementation and evaluation of more effective interventions, which should be adapted to local contexts and participants' characteristics.

**Keywords:** Ageing; Qualitative Research; Primary Health Care; Loneliness; Social Capital.

## BACKGROUND

Loneliness is a negative feeling due to the perception that the social needs of the person are not corresponded, neither in quantity nor in quality, by the social relationships that the person has (Peplau and Perlman, 1982). While social loneliness occurs when the number of relationships with friends and colleagues is smaller than is considered desirable, emotional loneliness refers to situations where the intimacy in confidant relationships one wishes for is not realized (De Jong Gierveld and Van Tilburg, 2010).

Older people undergo major changes in their social environment mainly due to retirement, widowhood, loss of peers, and age-related disability, and are especially at risk of social as well as emotional loneliness (Mittlemark et al., 2017). Likewise, three ageing crises are related to loneliness: the identity, autonomy and belonging crises (Rey Calero, 1995). These refer, respectively, to no longer feeling like who they used to be, or being able to do what they used to do, and not belonging to the places and groups of persons to which they used to belong.

From a policy perspective, the WHO Active Ageing paradigm encourages to foster social participation and social networks for ageing people (International Longevity Centre Brazil (ILC-BR), 2015; World Health Organization, 2002). However, the processes involved in the promotion of social relationships and participation in ageing remain unclear (Mittlemark et al., 2017).

A high number of risk factors are associated with loneliness: being female, living alone, limited education, small social network, low self-efficacy, poor self-rated health, depression, and

recent bereavement (Cattan et al., 2011; Victor et al., 2005). Moreover, loneliness is highly influenced by context. Therefore, loneliness differs across Europe from 5% to 20% among individuals aged 65 years or older, being higher in the southern countries (Sundström et al., 2009). The north-south gradient has been related with lower participation in social organizations and personal networks in southern countries compared to Northern European countries and there is also a cultural emphasis on family and social relationships, which would increase social expectations and thus loneliness (Dykstra, 2009; Litwin, 2010; van Tilburg et al., 1998).

There is increasing evidence that loneliness is a risk factor for negative health outcomes and an increased use of health services (Hawkley and Cacioppo, 2010; Tilvis et al., 2011), while adequate social relationships, social support, and social participation are protective health factors (Holt-Lunstad et al., 2010). Indeed, trials increasing social support are the most widely applied strategy among older people to tackle loneliness (Masi et al., 2011).

Certain intervention characteristics are related to a higher efficiency at reducing loneliness, such as theory-driven interventions, groups focused on educational input or support, active involvement of participants in decision-making, utilization of community resources, and building community capacity (Cattan et al., 2005; Dickens et al., 2011; Findlay, 2003). However, it is not yet clear which theory supports more effective interventions. The Loneliness Model proposes that chronic loneliness entails a cognitive bias consisting of a self-reinforcing loop associated with negative social expectations that cause social distance (Hawkley and Cacioppo, 2010). It supports cognitive behavioural therapy to correct deficits in social skills and address maladaptive social cognition (Masi et al., 2011). On the contrary, the empowerment theory considers that loneliness is potentially alleviated through empowering lonely older people to increase their self-esteem and feeling of mastery over their own life (Routasalo et al., 2009; Stevens, 2001; Victor et al., 2000)

Regarding effects, a systematic review on interventions based on social capital targeting older people showed few and diverse trials assessing the impact on loneliness and they were generally ineffective. However, some successful studies targeted complex cases of loneliness, and social capital interventions successfully increased quality of life, well-being and self-perceived health among lonely older people (Coll-Planas et al., 2016). In this vein, a group-based intervention in Finland, focused on building mutual friendship and alleviation of loneliness by empowering lonely older people, achieved successful improvements in a wide range of health outcomes including mortality, psychological well-being, and feeling needed,

but not in loneliness (Routasalo et al., 2009). The authors pointed out that the scale used was probably insensitive to change. Their qualitative analysis of the group dynamic showed how lonely participants built trust and encouragement and continued to meet (Pitkälä et al., 2015). A programme based on facilitating community knowledge and networking among older migrants in Japan through volunteers as gatekeepers, decreased loneliness and increased life satisfaction and social support (Saito et al., 2012). Therefore, whether and how programmes have an effect on loneliness remains unclear.

A study was conducted in Spain to alleviate loneliness among older people attending primary health care. Its design and quantitative results have been published elsewhere (Coll-Planas et al., 2015). It was built on the operationalization of the social capital theory applied to ageing (Coll-Planas et al., 2015; Islam et al., 2006; Nyqvist et al., 2013). The intervention promoted social support between peers and with volunteers (cognitive social capital) and social participation (structural social capital) by enhancing knowledge and engagement in activities in community assets (i.e., resources in the community offering activities). Moreover, the behavioural change involved in increasing participation was built upon social cognitive theory (Bandura, 1977), complemented by the socio-ecological model (Bronfenbrenner, 1994). The intervention was evaluated with mixed methods. According to the quantitative evaluation, loneliness decreased and social participation and support significantly increased after the intervention (Coll-Planas et al., 2015).

This paper corresponds to the qualitative evaluation of the intervention. The study aim was to: explore participants' experiences of loneliness and social participation prior to the programme; describe whether and how the programme had an effect on loneliness, social participation, and support and health; describe whether and how participants' health and the context influenced these processes.

## **METHODS:**

### **Design**

A descriptive-interpretative qualitative study was selected to identify the perceived impact of the programme on participants (i.e., older people) according to their experiences. These findings were triangulated with the perceptions of volunteers and health and social care professionals, as agents involved in the programme, and with the observations of researchers. This research applies the framework of the Active Ageing paradigm formulated by the WHO (World Health Organization, 2002).

### **Setting of the programme**

The programme was conducted from December 2011 to July 2012 in three primary health care

centres in Catalonia. One intervention group was conducted in each zone: one in a semi-rural area (Cardedeu, zone A); and two in an urban area, Barcelona: one in a low (zone B) and one in a medium (zone C) socio-economic neighbourhood. Settings were selected by convenience to evaluate the viability of the intervention in different contexts (Coll-Planas et al., 2015).

### **Study participants**

The study population comprised 26 older people who participated in the programme, nine volunteers and six professionals. All of them were invited in person by the researcher (LCP) to take part in this qualitative study, and agreed to participate. All participants were women apart from one man. Table 1 details the main characteristics of all 41 informants.

We intended to interview all 26 participants who finished the programme out of 38 older people who started, but 23 were available. Moreover, one participant who had dropped out of each intervention group was selected taking into account their gender and the heterogeneous reasons for leaving the programme: two women, one of whom dropped out to care for a family member and the other had an injurious fall, and one man who started an activity at the same time as the programme. Furthermore, nine older volunteers who accompanied the three intervention groups were interviewed. One man and one woman initially involved as volunteers were not available. All six professionals involved as facilitators or observers were interviewed.

**Table 1.** Characteristics of participants, volunteers, and professionals interviewed.

<i>Context</i>	<i>Technique</i>	<i>Number of informants</i>	<i>Age</i>	<i>Gender</i>	<i>Educational level/ Occupation**</i>
<i>Zone A: Semi-rural context with a medium socioeconomic level.</i>	<b>Participants*</b>				
	One focus group	Five participants	65-74 y.: 1 75-80 y.: 2 over 80 y.: 2	Five women	One with medium education and four with low education
	Eight individual semi-structured interviews	Eight participants	65-74 y.: 1 75-80 y.: 5 over 80 y.: 2	Eight women 3	One with medium education and seven with low education
	<b>Volunteers</b>				
	One interview in small group	Four volunteers	65-74 y.: 1 75-80 y.: 2 over 80 y.: 1	Four women	Low education
	<b>Professionals</b>				
Two individual semi-structured interviews	Two professionals from primary health care and social services	30-50 y.: 1 51-65 y.: 1	Two women	One nurse One social worker	
<i>Zone B: Urban context with a low socioeconomic level.</i>	<b>Participants*</b>				
	Focus groups	Nine participants	65-74 y.: 2 75-80 y.: 4 over 80 y.: 3	Nine women	Low education
	Individual semi-structured interviews	Eleven participants	65-74 y.: 2 75-80 y.: 6 over 80 y.: 3	Eleven women 6 3	Low education
	<b>Volunteers</b>				
	One interview in small group	Two volunteers	63 and 80 years old	Two women	Medium and low education
	Individual semi-structured	One volunteer	63 years old	One woman	High education

	interview				
	<b>Professionals</b>				
	Two individual semi-structured interviews	Two professionals from primary health care	30-50 y.: 1 51-65 y.: 1	Two women	Two social workers
<i>Zone C: Urban context with medium socioeconomic level.</i>	<b>Participants*</b>				
	One focus group	Seven participants	65-74 y.: 1 75-80 y.: 2 over 80 y.: 4	Six women and one man	One with high education, six with low education
	Seven Individual semi-structured interviews				
	<b>Volunteers</b>				
	One interview in small group	Two volunteers	73 and 76 years old	Two women	Medium education
	<b>Professionals</b>				
	Two individual semi-structured interviews	Two professionals from primary health care	30-50 y.: 2 51-65 y.: 0	Two women	One social worker and one nurse

\*Note: All participants who were individually interviewed had previously participated in the focus groups, except three from zone A and two from zone B, who were only individually interviewed.

\*\*“Educational level” applies to older participants and volunteers and “occupation” refers to professionals.



### **Data collection techniques**

Three focus groups with older participants and 36 semi-structured interviews were conducted: 26 with older participants, six with professionals, one with a volunteer and three with small groups of volunteers. Interviews and focus groups were conducted at the end of the intervention, in June-July 2012. Most older people were interviewed twice: in the focus groups conducted in their natural group during the last session of the programme, and in an individual interview, in order to gain more personal information about their situation prior to the programme, the process carried out and the effects perceived.

Moreover, participant-observation was conducted in all 15 sessions of the programme in the three zones by one or two researchers, providing a total of 58 field notes from observations. Consequently, researchers established a rapport with participants during the 4.5 months. Participants were aware of the researchers' involvement in the programme.

Semi-structured interviews and focus groups were used following a topic guide with open-ended questions (see Annex 1). Focus groups with participants explored the perceived effects on participants regarding loneliness, social support and participation, and health, accounting for contextual factors. In the interviews, participants were asked about their loneliness and participation prior to the programme and the effects perceived. Volunteers and professionals were asked about their perceptions of the process and effects on participants.

Interviews with participants were partly conducted at participants' homes and partly in a local senior club. Focus groups and interviews with professionals and volunteers were conducted in each primary health care centre. Interviews lasted approximately one hour and focus groups approximately 1.5h. All techniques were conducted by two female researchers (LCP, medical doctor, and GV, sociologist).

### **Data analysis**

All conversational techniques were digitally recorded and transcribed (by DR, sociologist). A thematic interpretative content analysis was conducted. There was a continuous cross-checking between the coding and the source of the data that combined a deductive and inductive approach. Data were initially coded according to pre-defined themes (experiences prior to the programme, the process and effects, influences of health, and context). In parallel, further themes emerged and were included in the final analysis.

Two researchers (DR and LCP) independently coded the first transcripts. Afterwards, the analysis was led by LCP and monitored by regular meetings with DR. The analysis involved a triangulation of techniques, researchers, and informants. An informative richness for a deeper

understanding of the phenomenon was achieved and data saturation was reached in the main categories for women.

Finally, the results were structured to build an explanatory framework of the process of change that participants underwent during the programme and their perceived effects of the main influencing factors. This framework was discussed with the entire research team and verified with the corpus when needed. Informants verified results by providing their feedback on preliminary results.

### **Ethical considerations**

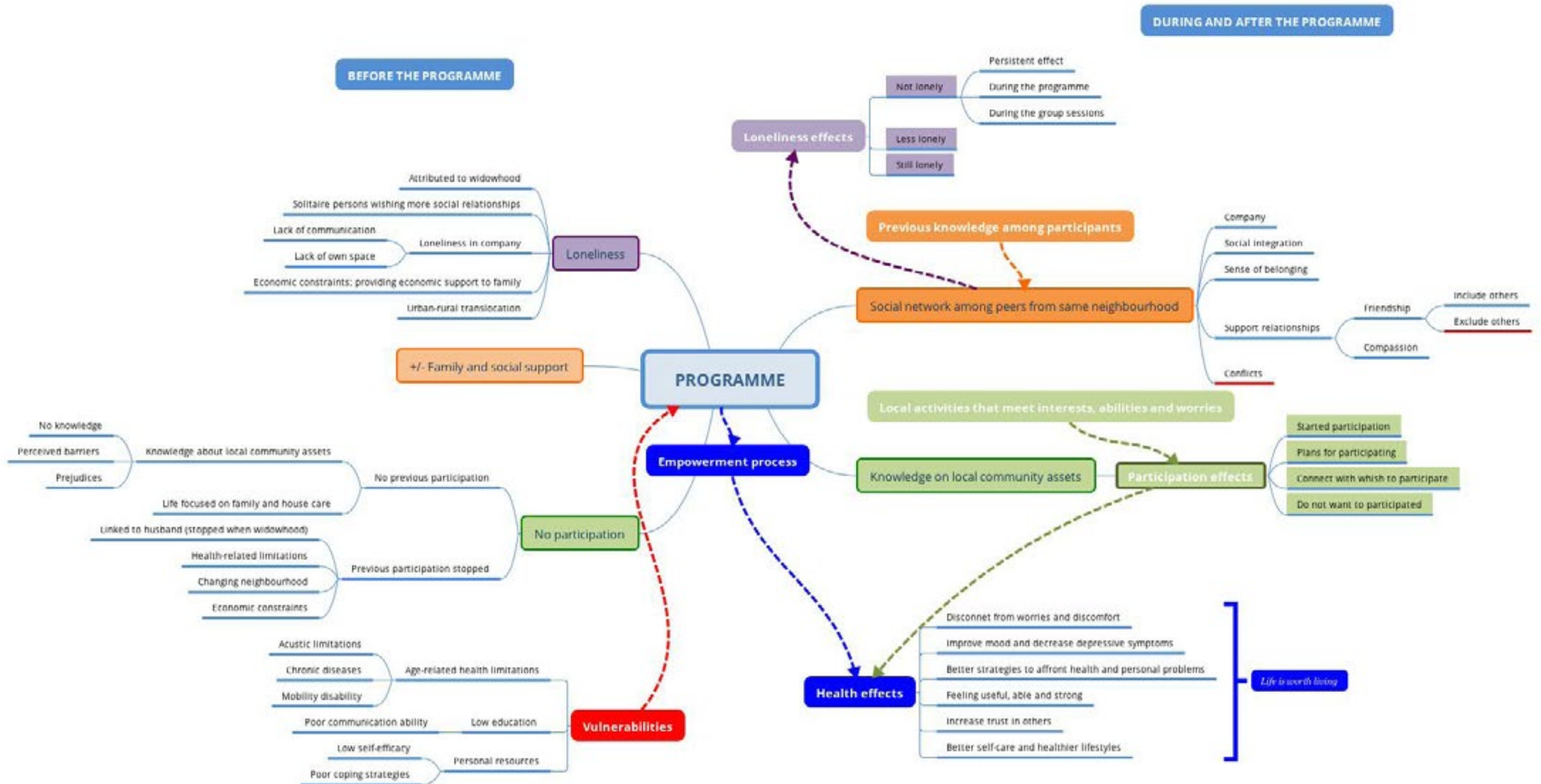
The ethics committees from *Universitat Autònoma de Barcelona* and IDIAP Jordi Gol approved the protocol. The informants participated voluntarily after signing informed consent forms. Anonymity, confidentiality and protection of stored data were guaranteed.

### **FINDINGS**

Throughout the paper, “participants” refers to older people participating in the programme and “informants” comprises the three profiles of agents involved: participants, volunteers, and professionals.

Figure 1 shows the explanatory framework. Participants entered the programme with different experiences of loneliness and participation. The programme promoted a social network among peers from the same neighbourhood and their knowledge of local community assets. Consequently, different effects of loneliness and participation were achieved. Participants’ vulnerabilities limited the effects of the programme. Conflicts and exclusion were also generated as unintended effects.

Figure 1. Explanatory framework of the experiences of participants before, during and after the programme.



### **Participants' experiences of participation prior to the programme**

In all three intervention groups, the same profiles of participants were identified regarding previous experiences of participation.

The first profile was composed of participants with no previous experience of formal participation. They were women with a low educational level and widowed, except one who was married. Their life had been focused on family and house care, and caring had been a barrier for participation. They shared trajectories of disempowerment, having felt unable to do things alone and renouncing to make decisions that they considered would be unfaithful towards others.

Some of them had no friends and had done informal activities only with their husbands (i.e., going for a walk). They ended any informal activities when their husbands passed away. Some of those women were not informed about community assets, or had prejudices, especially about senior clubs. Other participants perceived barriers such as the difficulty of getting a place in activities, or the lack of courage to participate alone.

***“He didn’t want to go, because I sometimes said “let’s go and see”. We live beside the senior club... (...) but I didn’t have the strength to say “if you don’t come, then I’ll go on my own””.***

***Participant 5, Woman, 78 years old, Zone C.***

The second profile had previous experience of social participation and were single, divorced or widowed, including the only widower. Widows who had participated together with their husbands in community assets had ended participation when their husbands passed away. Those who had participated on their own had stopped mainly due to age-related health problems (e.g., falls or chronic pain), economic problems, and having recently moved to a new neighbourhood. They had conducted previous activities alone, but for other people (e.g., sewing), with others (e.g., social activities) or to help others (e.g., volunteering) and it had been a source of mental wellbeing, for some of them for their whole life. Stopping them had contributed to their loneliness. Nevertheless, some participants reported having found ways of coping with limitations to maintain some informal activities, like one participant who daily overcame her pain to go for a walk because being alone at home was worse for her.

***For a long time I used to go there every day (to a centre for disabled children) ... look at my knee, I’ve needed an operation for 18 years but I decided not to have it, and I can’t feed them from sitting, because sometimes you have to hold their head and I can’t.***

***Participant 1, Woman, 83 years old, Zone C.***

### **Participants' experiences of loneliness prior to the programme**

Three main profiles of participants were identified regarding experiences of loneliness. In the first profile, participants expressed their loneliness as a consequence of widowhood. Their husbands' absence had left a void that was impossible to fill and finding a new partner was disregarded to avoid being a "servant" again or because their husband was irreplaceable. Moreover, a recently widowed man dropped out of the programme after the first session and had joined it to find a new partner. They were living alone, suffered from loneliness mainly at home and coped with it often by talking with their deceased husband, going out for a walk or having a pet.

***I'm missing the most important thing, I'm missing my husband.***

***Participant 29, Woman, 78 years old, Zone B.***

Many of them had cared for family members. Some of them started to feel lonely after caring, others while they were caring. They explained feeling lonely despite the support perceived and received from their family and neighbours. Widowhood entailed sadness. In some cases, widows also suffered depressive symptoms and anxiety or even had a depression that was being pharmacologically treated. Nevertheless, a minority of widowed participants expressed widowhood as a relief from a marriage that did not allow them to live how they wanted.

The second profile comprised some long-term widowed, divorced or single participants who expressed that they were solitary. They felt well alone and living alone but expressed having a fear of relating with others, a lack of social relationships and that they received pressure from their family to interact more.

***I've done it (joining the programme) mainly because I had a problem relating with others, isn't that right?***

***Participant, N. 18, Woman, 65 years old, Zone A.***

In the third profile, participants were suffering from **loneliness in company**. They had moved to live with their children due to health problems, or their children and grandchildren had moved to live with them due to economic problems. Older women expressed missing having their own space and a lack of communication with their children, who had little time for them.

***My daughter and I have a good relationship but I can't have any conversations with her... She takes care of me if I am ill ... but I can't tell her stories about older people; they are very tedious, because she has no time. It's true, she works long hours and has no time. She would like to listen to me and so on but she says "Ah Mum, not today, I have no time, maybe on Sunday..."***

***Participant 28, woman, 71 years old, Zone B.***

In addition, providing economic support to their children was a strong source of worry that impacted their experience of ageing and intensified their loneliness.

***And now I'm turning 74 years old. I thought than when I was old, I would have my retirement prepared, I thought I could live my life a bit. But I see it is the other way round, that now I have to be there for the others, instead of them being there for me; I am the one who has to be there for everyone."***

***Participant 2, Woman, 73 years old, Zone C.***

Loneliness was also worsened by a recent or prolonged translocation and by not having built a sufficiently fulfilling social life.

***"I say "so, you were the one who wanted to live here (in the semi-rural area), you go, you leave me alone and I remain here" "***

***Participant 13, Woman, 75 years old, Zone A.***

#### **Perceived effects on participants during the programme**

Professionals and volunteers pointed out that participants improved in a variety of aspects and they attributed these changes to the intervention. Moreover, effects were stronger among those participants who adhered more.

***With those who dropped out or didn't come as often it is difficult, but I think that (with those who came more often), by simply watching them and talking to them, a change can be seen.***

***Health care professional 2, Woman, Zone C.***

#### **Effects on social support**

Relationships among participants evolved during the sessions. Professionals and participants expressed that the programme was especially successful at promoting mutual support in comparison with other groups, probably due to its explicit aim in that respect.

Living in the same area gave them a feeling of familiarity, and participants often met each other on the street. Through the programme, they developed enough trust to ask how they were, and sometimes walked together back home. In the urban context, the programme had made the city less hostile, turning the neighbourhood into a place where more people knew each other.

Indeed, some participants knew each other before the programme. Previous knowledge of each other was mainly a facilitator to establishing relationships in the urban areas but it was more frequent in the semi-rural area, sometimes acting as a barrier to strengthening their relationship.

According to participants, the group provided companionship, made people feel socially integrated, provided a sense of belonging to the group as a space where attention, respect, affection and emotional support could be given and received.

Many participants were part of a group for the first time and for some participants, the group was the only place they had to socialize.

Participants discovered that peer relationships, as opposed to relationships within the family, provided a way of communicating shared worries and interests on an equal footing, by sharing a similar age.

***We are the same age, you can talk about the same things... youth, depending on the topic... you talk but..., I don't know, youth is very different. (...) For me, the company of one or the other is different. With the group companions there ..., I don't know, maybe it's another freedom, another thing because since we all speak about the same thing, pretty much, about what happens to us and about what we do not have...***

***Participant 29, Woman, 78 years old, Zone B.***

Participants identified other persons from the group as a model to follow or, on the contrary, as a model to avoid. Both cases evoked a reaction towards a positive change.

During the programme, they knew that they could count on each other, thus perceived increased social support. However, they used the support network in an unequal manner, i.e., some used it more than others. For instance, when a participant suffered an injurious fall, was low in spirits or had a new illness, the support relationships that developed around them could be observed.

Some participants had an affinity and became friends, even close friends, and started visiting and calling each other. While some people were previously aware of missing having friends, others made friends for the first time.

***(...) because I don't tend to go out with friends here and there. But now it's different, since I've been coming here (...) Look, I get on very well with Maria, she's a lovely and good woman and we get on great together. For her it's the same; she says "I've found a shoe for my foot, because I don't trust anybody but you".***

***Participant 37, Woman, 77 years old, Zone B.***

In some cases, new friends generated subgroups that integrated other participants, including those who were more socially isolated. In other cases, friendships were closed and some participants felt excluded.

***... and they seem to have become very united to go out on walks together (...), but I go by and they are sitting there and never say "do you want to come with us", so I go home....***

***Participant 2, Woman, 74 years old, Zone C.***

Some participants expressed having felt united and treated without differences. Nevertheless, the group comprised different profiles regarding educational levels, age-related disability and health problems, which unified but also divided the group. Those with mobility limitations and hearing impairment were at higher risk of not establishing friendships, being isolated within the group and dropping out. Nevertheless, some participants and volunteers reported having developed a support relationship with more vulnerable participants, moved by compassion. Telephone contact was especially relevant between participants with mobility limitations or living apart, and also for volunteers to support participants.

***The one I see who needs to cheer up is Margalida, she is very down... (...) For me it's no effort because it's something I've done all my life, listen to people and be at their side and support them. Let them tell you things, especially that... I'll go and see her this week, because she called me the other day and I went to her house and now I want her to come to my house.***

***Volunteer 2, Woman, 77 years old, Zone A.***

The few participants with a higher educational level expressed not sharing interests with the rest. For them, feeling valued and helpful for more vulnerable participants was key to remain in the programme. In one group, there was a conflict with one participant. She felt more skilful and was jealous of those who participated more in the group.

***You can see that she doesn't stop talking, she always wants to speak... and from the first day there has been a conflict and everybody saw there was a conflict. Even Jose said he didn't feel comfortable because of her. And of course, this has restricted the dynamic a bit, hasn't it? It hasn't been easy...***

***Social care professional 1, Woman, Zone C.***

### **Effects on loneliness during the programme**

Most of the participants reported that their loneliness decreased after the programme by feeling accompanied by peers and professionals, and thanks to the bonds established and to having become aware of and engaged in local activities of their interest. While some people



said they no longer felt lonely because of new friendships, others continued to suffer from loneliness, but with less intensity.

***I don't feel lonely, now I have friends.***

***Participant 28, Woman, 71 years old, Zone B.***

***Like bread and butter; loneliness is easier to digest when in company.***

***Participant 4, Woman, 78 years old, Zone C.***

The awareness that loneliness was a common matter helped them to cope with it by realizing they were not alone in their loneliness.

Some participants expressed a transitory impact on loneliness. For them, home was the space of loneliness, while being in the group and on the street with others were relational spaces.

***I am happy to join the group, but then, when I get back home, I fall apart, I need to be on the street with someone... at home, alone, is bad...***

***Participant 35, Woman, 81 years old, Zone B.***

Likewise, some participants said that the positive impact would vanish once the group finished. Nevertheless, thinking and talking about the programme with others also helped them to feel less lonely.

Those widows who mentioned that the cause of their loneliness, i.e., widowhood, was impossible to solve reported no impact on loneliness. They continued not accepting it but reported an increase in social relationships.

***Since my loneliness is due to missing my husband, it cannot be replaced, at the moment, or ever.***

***Participant 13, Woman, 75 years old, Zone A.***

### **Effects on participation**

According to the three types of informants, the programme was generally successful at helping participants to discover and sometimes engage in new activities in their neighbourhood.

**Visiting community assets** allowed participants to get a new or updated and deeper sense of what was available and to remove prejudices, especially about senior clubs. Moreover, some people went back to community resources where they used to go with their husbands.

***The satisfaction of seeing things I had never seen before, although you imagine them, you've seen them on TV, but being there inside, you see it, you touch it, it is a big satisfaction...***

***Participant 5, Woman, 78 years old, Zone C.***

The visits included testing **local activities**, triggered participation in a wide range of activities, and triggered interest in **volunteering** to help others. Activities were generally adapted to their age-related limitations. However, chronic diseases limited certain activities and a few people discovered interesting activities that they could not do. Nevertheless, it did not evoke frustration.

Some participants started participating in activities immediately and others started during the programme but required some time. They became engaged in activities that suited their interests, abilities or worries (e.g., memory training). Knowing what was available in the group facilitated becoming engaged with other peers. Thus, new friends easily did new activities together, accompanying each other while compensating for their limitations and reinforcing their friendship.

***Carme and Teresa meet up to go to the cinema, since they live near each other, and Carme does not like going out on the street on her own at night. They meet up to see the film that the parish puts on in the cinema and has been recommended to them, but it's not a planned activity; it's an extra outing.***

***Field note, researcher LCP, referring to participants 10 and 13, Women, 75 and 80 years old, Zone A.***

Other participants made concrete plans to start activities the following year and some exclusively connected with their wish to participate. For some participants, socializing was very important but participating in activities was not. The impact on participation was limited by low self-confidence and low communication ability, often related with low education.

***She tells me she's odd and that she thinks everything is very nice and would like to get involved but she doesn't feel capable because she is silly, she doesn't express herself well, she talks poorly...***

***Field note, researcher LCP, referring to the participant 30, Woman, 84 years old, Zone B***

Some participants, especially those who had been caregivers over the past years, discovered the value of doing activities with other people.

***Everything we did there was new to me. Everything...***

***Participant 12, Woman, 79 years old, Zone A***

### Health effects

Participants, professionals, and volunteers agreed on the improvement in mental health. While some participants considered that this impact would persist, others experienced that the benefits vanished after the programme.

Some participants reported effects on physical health, mainly forgetting about their pains during the group, while other participants reported not having any health problems and suffering from chronic conditions with aches that were difficult to alleviate.

Participants went to the group sessions enthusiastically, to meet peers and professionals. They reported an improved subjective well-being by comparing themselves with others, becoming aware of worse circumstances and valuing their situation more.

One professional explained how the intervention broke a withdrawal within themselves with an obsessive focus on illnesses and woes related with loneliness by connecting with others, awakening the wish to remain connected and helping them to forget about their worries.

Sharing their woes and coping strategies among peers was generally relieving and helped them to **deal with them**, although specific people needed to feel their suffering was greater.

***By participating, you don't feel lonely, with everything you are experiencing.***

***Participant 18, Woman, 65 years old, Zone A.***

Specifically, sharing the way in which they talked with their deceased husbands to overcome loneliness helped them to feel better instead of “crazy”, as they said. Likewise, they also reported feeling less worried and more able to deal with economic, family and health problems.

In terms of positive mental health, participants reported being more understanding and empathic, and having more trust in other people; this was particularly the case for those who were more closed and socially isolated. Others explained being more compassionate, respectful and having learned not to judge others. Those living with family members expressed having learned to be more tolerant in cohabitation with other household members.

An empowerment process, here considered within mental health, was observed. According to the three groups of informants, the programme contributed to the development of personal potential and brought them autonomy to participate and to live their life as they wanted, with less dependency on their children. They had a feeling of strength and of the power to decide.

***My daughter wanted me to spend every Sunday with them, but I didn't like it and I used to say “but why do I have to be here every Sunday?” and she'd say “so that you're not on your***

*own" (...) And now, if one day I don't want to go for lunch I say "today, I won't come for lunch, don't wait for me because I'll be with Maria", now it's different.*

***Participant 37, Woman, 77 years old, Zone B.***

Participants attributed their empowerment to the attention and value received. Also, realizing they had helped peers was very satisfying and increased their self-esteem, since giving support meant giving what they had learned throughout their life, thus giving value to their experience. Accordingly, feeling useful and able instead of useless meant that their life was not ending and was worth living. In particular, those participants with a life trajectory that was very family-oriented, said that they felt more free and self-confident, and those participants with severe physical conditions felt connected with their wish to live by becoming aware that others do care about them. These changes contributed to alleviating their loneliness.

***(With the programme) you have another stimulus, you feel like living, you feel like someone needs you for something. You feel that you, life, or God or whatever, needs you for something. Do you know what that feels like?***

***Participant 29, Woman, 78 years old, Zone C.***

They were aware of their own empowerment process and participants mutually reinforced each other. It was strange for them having lived until then without these satisfying aspects of life that they had just discovered or recovered.

Empowerment was also enhanced by discovering new interests, such as one participant with a low educational level who wished to learn to read and write after the programme.

However, the empowerment had a limit: participants did not see themselves able to lead the continuity of the group and wanted someone as a leader to tell them where to go.

Professionals and volunteers agreed that the programme was a strategy to prevent or alleviate depression and other mental health problems. Some women with depressive symptoms expressed that the programme was a salvation to them. Many participants took anti-depressive drugs and/or tranquilizers and explained feeling better after the programme. One participant explained having solved her sleep problems and having avoided starting anti-depressive medication.

***For me, beforehand, I wasn't able to go anywhere on my own. Now, I've changed! If I had to go for an X-Ray, I had to be accompanied, and, since I have claustrophobia, in a lift and things like that... but now, I go alone wherever it may be, an X-ray, Sant Pau (Hospital)... I'm a different woman!***

***Participant 5, Woman, 78 years old, Zone C.***

The programme had some effects on self-care and healthy lifestyles. Participants were motivated to dress smartly, some of them rediscovering the desire to get dressed up after widowhood by identifying some participants as a model to follow.

Becoming engaged in local activities like physical activity and memory training especially promoted healthy ageing, but their physical activity also increased by starting to participate.

Two participants with hearing impairment felt motivated to wear the hearing aid that they had not used before because they wanted to feel connected to others in the group.

Through the programme, they became aware of the relevance of taking care of their own health, especially those who had cared for a spouse and whose own health and self-care had not been a priority before.

## **DISCUSSION**

The programme alleviated participants' loneliness, increased their knowledge about community assets and their participation in formal and informal activities, and provided companionship, a sense of belonging to the group, peer support, and friendship. Moreover, their mental wellbeing increased, depressive symptoms decreased, and participants could deal better with their woes and worries. An empowerment process was observed, participants discovered or recovered new freedoms by breaking dependences, and became reconnected with the sense that life was worth living. However, the programme did not alleviate loneliness among those participants who were missing their partner and whose vulnerabilities limited the effects on their social network and participation.

In the urban context, contrary to the semi-rural context, the programme contributed to less hostile neighbourhoods, and previous knowledge among participants was less frequent but more favourable to develop friendships.

The results of the qualitative and quantitative evaluation of the programme were convergent regarding effects on loneliness, social support, and participation. Regarding health effects at post-intervention, only qualitative findings suggested changes that validated scales could not detect. However, at two years follow-up, the quantitative evaluation did detect a decrease in depressive symptoms in line with the qualitative findings (Coll-Planas et al., 2015).

The main effects of the programme on mental health are in line with the protective effect of social capital on mental wellbeing among older adults (Nyqvist et al., 2013).

Our results are consistent with research reflecting how the way in which older people handle loss is key in their attitude towards participation and social relationships (Kirkevold et al.,

2013). Our study adds that interventions might encourage lonely people overwhelmed by loss to connect with meaningful activities and establish positive social relationships.

Our findings are consistent with the results of the qualitative analysis of Pitkala et al. that explored group dynamics (Pitkälä et al., 2015). In both studies, participants had very different experiences of loneliness and enjoyed sharing mutual experiences among peers, although in specific cases they competed to be the worst case. In each group, certain participants were key players in promoting group cohesion. Mutual support was observed, subgroups developed, and participants especially helped those who were more vulnerable. Meetings outside the group were self-organized. However, conflicts in relation with game power were also present. They were rare and mild but affected the group dynamic. Participants increasingly paid more attention to their appearance and the way they dressed. All groups had participants with chronic diseases and age-related limitations, including hearing impairment. These circumstances and the heterogeneity in functional status influenced the group dynamics, for instance limiting the participation of those more vulnerable participants.

Our results are in line with previous research that shows that socio-economic factors, such as educational level, and physical function, are key factors to understanding how social relationships are linked with health (Mittlemark et al., 2017). Furthermore, the same factors are also crucial when promoting social relationships and participation, since low socio-economic level and poor physical function can hinder engaging in a programme and may limit the process of change among participants.

The effects were more intensive among those participants who adhered more, showing a dose-response effect.

The empowerment process observed confirms the suitability of the empowerment model informing a successful design of the intervention. The distinction between social and emotional loneliness could partly explain why some widowed participants remain emotionally but not socially lonely. The Loneliness Model could partly correspond to the type of loneliness observed by professionals prior to the programme; a self-reinforcing loop centred on illnesses and woes. However, participants were released from it at least during the programme. Indeed, social relationships and participation seemed to create a positive self-reinforcing loop; opening participants up to others and to new experiences, relativizing their situations and encouraging them to get out of an introspective state, and thus involving more social relationships, and more participation that brought more meaning to their life.

The programme helped participants to overcome, at least in part, the three ageing crises of autonomy, identity and belonging and consequently brought the feeling that life is worth-living to participants and alleviated their loneliness (Rey Calero, 1995). It helped them to take care of

their image and health, to take up their interests again, and provided them with the feeling of belonging (to the group, to their own neighbourhood). Social participation also reintroduced them to having a social life. Regarding autonomy, mutual support helped them to overcome or cope better with their limitations and they felt more capable and useful.

The role of modelling, and the increased self-efficacy reported, are in line with social cognitive theory. Moreover, the Stages of Change of the Transtheoretical Model, a theory initially not considered, helped to describe the different levels of change among participants: some participants started the action during the programme (participation), others were in the preparation stage (were ready and made concrete plans), while others were in the contemplation stage (getting ready, connecting with their wish to participate) (Prochaska JO, 1983).

Reciprocity and proximity among peers were key features of the success of the programme in terms of promoting well-being. In line with the salutogenic approach, effects were mainly reported on the social aspects of health and in positive mental health, but there was also a decrease in ill mental health (Mittlemark et al., 2017). Indeed, it depended on the health perspective of the informant (a biomedical or an holistic approach) whether they reported no health effect, effects on social aspects of health, or considered effects on loneliness as a health aspect.

Urban and semi-rural areas differed in previous knowledge of each other and of community assets, but profiles of loneliness and participation and programme effects were common. Within the urban area, the group conducted in the neighbourhood of medium socio-economic conditions presented a major diversity of educational levels among participants, which entailed distances and conflicts.

Lastly, the historical and cultural context seems to configure a generation of older women who had grown up assuming traditional roles of dependence on their husbands. Some of them remained powerless in widowhood, while others were relieved, and others managed widowhood well alone over time. In addition, the economic crisis seems to have worsened the experience of the ageing process and enhanced loneliness.

### **Strengths and limitations**

The rapport built between researchers and participants during the programme generated a trust that facilitated the sharing of personal experiences in the interviews, although it might also have influenced their answers, consciously or unconsciously wanting to please researchers. Nevertheless, the assumptions we had as researchers regarding how and why the

programme should have reduced their loneliness were challenged from the first session to the last interview.

Among informants, men were rare, since women were a clear majority among participants and the only gender among volunteers, professionals and researchers. Moreover, older people who adhered to the intervention were the majority among informants. Nevertheless, three people who dropped out for different reasons were interviewed, and observations included all participants since all sessions were observed.

The richness and complementarity of the information generated with the different techniques and the three types of informants are noteworthy. Effects reported by older people at the end of the programme were triangulated with those perceived by volunteers and professionals and with the observations of researchers during the process.

Lastly, primary care professionals involved were especially motivated to work on loneliness, and their expectations of the programme might not apply to other primary health care contexts. Accordingly, caution is required before transferring these results to other settings, but the similarity with other studies in different contexts suggests their applicability.

### **Implications for research**

More qualitative evaluations of interventions are needed to explore processes and intervention effects on loneliness, addressing its complexity, including context specificities.

Regarding the intervention design, guaranteeing the continuity of the group remains a challenge, as well as an appropriate follow-up to enhance, if needed, participants' engagement in the social activities in community assets. Strategies are needed to focus on those persons with social and health vulnerabilities and, consequently, at risk of dropping out or of being socially excluded during or after the programme.

### **Implications for practice and policy**

This programme supports the WHO Active Ageing policy and provides insight into how to enhance social networks and participation while ageing to enhance well-being.

In addition, our findings should support current practices and policies of social prescribing programmes, which link primary care patients with community resources with the aim of strengthening participation and social support, and promoting health, particularly mental health, and well-being (Wilson et al., 2015).

Nevertheless, the role of primary health care in loneliness interventions may differ according to the cultural context and the characteristics of the health and social care system and the community resources available (Kharicha et al., 2017). In any case, attention must be placed



on not medicalizing loneliness when interventions are developed in primary health care.

## CONCLUSIONS

This study contributed towards gaining a better understanding of the complex processes that are involved in the promotion of social relationships and participation in ageing to alleviate loneliness, how they are interrelated with health, socio-economic factors and age-related disability. Specifically, it has clarified whether and how an intervention that promotes social capital tackles these conditions enhancing processes of change among lonely older people. Therefore, these findings should support future designs, and the implementation and evaluation of more effective interventions, which should be flexible to adapt to contexts and participants' characteristics.

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**ANNEX 1: topic guide of the semi-structured interviews and focus groups**  
**GUIÓ DE PREGUNTES DE LA VALORACIÓ GRUPAL AMB LES PERSONES GRANS PARTICIPANTS**

1. La solitud de les persones grans
  - a. *Com us sentíeu abans de començar a participar en el grup de Camins?*
  - b. *Com vivíeu la solitud?*
  - c. *Us sentíeu soles?*
  - d. *Ha canviat la manera com viviu la solitud mentre heu participat al grup? En què ha canviat?*
  - e. *Com creieu que viureu la solitud un cop hagi acabat el grup? Creieu que ara coneixen noves maneres d'afrontar la solitud? Podeu reconèixer moments positius de la solitud?*
  
2. La participació de les persones grans
  - a. *Havíeu participat en activitats abans de començar el grup de CAMINS?*
  - b. *Què en pensàveu de la participació?*
  - c. *Com ha canviat el que penseu de la participació al llarg del grup?*
  - d. *Han canviat els vostres interessos per participar?*
  - e. *Ha canviat la vostra opinió sobre participar?*
  - f. *Teniu previst participar regularment en alguna activitat un cop hagi acabat el grup?*

**Els impactes percebuts:**

- f. *En què us ha resultat útil participar del grup? De què us ha servit? Quins beneficis n'heu notat?*
- g. *En què us ha canviat? En què us ha fet bé i en què no us ha ajudat o servit?*
- h. *Us ha servit per sentir-vos menys sols?*
- i. *I per començar a participar?*
- j. *I per conèixer altres persones?*
- k. *I per rebre ajuda d'uns i altres?*
- l. *Creieu que ha tingut un impacte en la vostra salut?*
- m. *I creieu que ha servit per haver d'anar menys sovint al metge?*
- n. *Esteu menys preocupats per la vostra salut?*
- o. *Dormiu millor?*
- p. *N'heu notat altres beneficis?*
- q. *Us ha perjudicat o anat malament venir al grup per alguna cosa?*
- r. *Què pot facilitar la continuïtat del grup? Què necessiteu per continuar-vos reunint?*

**GUIÓ PER L'ENTREVISTA INDIVIDUAL A LES PERSONES GRANS DEL GRUP**  
**Aspectes afegits o per aprofundir en l'entrevista individual partint del guió d'entrevista grupal a les persones grans del grup:**

- Aprofundir en la seva història de **solitud**. Com era abans, com és ara, com la descriurien...
- La seva **història de participació** (si participaven abans, si van deixar de participar per cuidar el marit, perquè participaven amb ell i ell va morir, si no havien participat mai). I efectes del programa en la participació: si ja coneixien els llocs on hem anat).
- **Suport social** preguntar a cadascuna a qui han conegut de nou, amb qui han aprofundit en l'amistat però ja es coneixien.

1. La solitud de les persones grans

APROFUNDIR EN LA SEVA HISTÒRIA DE **SOLITUD**. COM ERA ABANS, COM ÉS ARA, COM LA DESCRIRIEN...

- a. *Com us sentíeu abans de començar a participar en el grup de Camins?*
- b. *Com vivíeu la solitud?*
- c. *Us sentíeu soles? Com descriure's la solitud que vivies?*
- d. *En cas que diguin que no se sentien soles: per què et vas apuntar a un grup dirigit a persones grans soles?*
- e. *Ha canviat la manera com viviu la solitud mentre heu participat al grup? En què ha canviat? Com és ara la solitud que vius?*
- f. *Com creieu que viureu la solitud un cop hagi acabat el grup? Creieu que ara coneixen noves maneres d'afrontar la solitud? Podeu reconèixer moments positius de la solitud?*

2. La participació de les persones grans

- a. *Havíeu participat en activitats abans de començar el grup de CAMINS? Si participaven: algun fet va fer canviar la vostra trajectòria de participació? Per ex: En cas de viudetat: va canviar la vostra manera de participar al perdre o haver de cuidar la vostra parella?*
- b. *Què en pensàveu de la participació?*
- c. *Com ha canviat el que penseu de la participació al llarg del grup?*
- d. *Han canviat els vostres interessos per participar?*
- e. *Ha canviat la vostra opinió sobre participar?*
- f. *Dels llocs que hem visitat, quins coneixíeu i quins no? Quins heu pogut conèixer ara amb més profunditat tot i que ja els coneguéssiu?*
- g. *Teniu previst participar regularment en alguna activitat un cop hagi acabat el grup?*

**Els impactes percebuts:**

- a. *En què us ha resultat útil participar del grup? De què us ha servir? Quins beneficis n'heu notat?*
- b. *En què us ha canviat? En què us ha fet bé i en què no us ha ajudat o servit?*
- c. *Us ha servit per sentir-vos menys **sols**?*
- d. *I per començar a **participar**?*
- e. *I per **conèixer altres persones**?*
- f. *I per rebre **ajuda d'uns i altres**?*
- g. *Quines persones del grup ja coneixíeu abans? Com ha ajudat el grup a tenir-hi una relació més estreta, més forta... a conèixer-us més?*
- h. *Creieu que ha tingut un impacte en la vostra **salut**?*
- i. *I creieu que ha servit per haver d'anar menys sovint al metge?*
- j. *Esteu menys preocupats per la vostra salut?*
- k. *Dormiu millor?*
- l. *N'heu notat altres beneficis?*
- m. *Us ha **perjudicat** o anat malament venir al grup per alguna cosa?*
- n. *Què pot facilitar la **continuïtat del grup**? Què necessiteu per continuar-vos reunint?*

## GUIÓ DE PREGUNTES DE LA VALORACIÓ GRUPAL/INDIVIDUAL AMB LES PERSONES VOLUNTÀRIES

1. La solitud de les persones grans
  - a. *Creieu que ha canviat la manera com viuen la solitud les persones que han participat al grup? En què ha canviat? Com ha canviat?*
2. La participació de les persones grans
  - a. *Creieu que ha canviat la manera com veuen i viuen la participació les persones que han participat al grup? En què ha canviat? Com ha canviat?*
  - b. *Creieu que han canviat els seus interessos per participar?*
  - c. *I la seva opinió sobre participar?*

### **Els impactes observats en les participants del grup:**

- a. *En què els ha resultat útil participar del grup? De què els ha servit? Quins beneficis n'heu observat?*
- b. *En què les ha canviat? En què els hi ha fet bé i en què no les ha ajudat o servit?*
- c. *Creieu que els hi ha servit per sentir-se menys sols?*
- d. *I per començar a participar?*
- e. *I per conèixer altres persones?*
- f. *I per rebre ajuda d'uns i altres?*
- g. *Creieu que ha tingut un impacte en la seva salut?*
- h. *I creieu que ha servit per haver d'anar menys sovint al metge?*
- i. *Estan menys preocupats per la vostra salut?*
- j. *N'heu observat altres beneficis?*
- k. *Creieu que les ha perjudicat o anat malament venir al grup per alguna cosa?*
- l. *Què pot facilitar la continuïtat del grup? Què creieu que necessiten per continuar-se reunint?*

## **GUIÓ DE PREGUNTES DE LA VALORACIÓ INDIVIDUAL AMB PROFESSIONALS**

1. Com avalueu la intervenció en relació a l'objectiu de promoure la participació social per alleugerir la solitud?
2. La solitud de les persones grans:
  - a. *Creieu que ha canviat la manera com viuen la solitud les persones que han participat al grup? En què ha canviat? Com ha canviat?*
3. La participació de les persones grans:
  - a. *Creieu que ha canviat la manera com veuen i viuen la participació les persones que han participat al grup? En què ha canviat? Com ha canviat?*
  - b. *Creieu que han canviat els seus interessos per participar?*
  - c. *I la seva opinió sobre participar?*

### **Els impactes observats en les participants del grup:**

4. *En què els ha resultat útil participar del grup? De què els ha servit? Quins beneficis n'heu observat?*
5. *En què les ha canviat? En què els hi ha fet bé i en què no les ha ajudat o servit?*
6. *Creieu que els hi ha servit per sentir-se menys sols?*
7. *I per començar a participar?*
8. *I per conèixer altres persones?*
9. *I per rebre ajuda d'uns i altres?*
10. *Creieu que ha tingut un impacte en la seva salut?*
11. *¿Heu observat algun tipus d'impacte en l'ús del CAP per part de les persones participants? (Disminuït, augmentat, no ha canviat o s'ha utilitzat de manera diferent).*
12. *I creieu que ha servit per haver d'anar menys sovint al metge?*
13. *Estan menys preocupats per la vostra salut?*
14. *N'heu observat altres beneficis?*
15. *Creieu que les ha perjudicat o anat malament venir al grup per alguna cosa?*
16. *Què pot facilitar la continuïtat del grup? Què creieu que necessiten per continuar-se reunint?*



## 9.2. Annexes of published articles

### 9.2.1. Annexes of article 1

#### **ANNEXES OF ARTICLE 1:**

##### **SOCIAL CAPITAL INTERVENTIONS TARGETING OLDER PEOPLE AND THEIR IMPACT ON HEALTH: A SYSTEMATIC REVIEW.**

- Appendix 1: Medline Search Strategy
- Appendix 2: Descriptive table with detailed information at study level
- Appendix 3: Tables with reported effects on the outcomes quality of life, well-being, self-perceived health, mood, loneliness and mortality
- Appendix 4: Tables with reported effects on the categories psychological variables, physical health, cognition and use of health-related resources

## Appendix 1. MEDLINE SEARCH STRATEGY

### Additional text

The search combined terms related to the target population and the defined intervention area, with an adaptation of the Cochrane MEDLINE filter to identify controlled trials<sup>1</sup>. Health outcomes were not pre-specified at the search algorithms. Social capital was searched also throughout its components and a list of synonyms, since the wording ‘social capital’ might not always be used. Initially, the search strategy applied by Nyqvist et al. 2013 was taken as basis to build the search on social capital terminology<sup>2</sup>. Afterwards, trials identified were used to improve the search adding terms strongly related with social capital components, e.g., befriending. No language or temporal restrictions were applied.

POPULATION	<p>#1 “Aging”[MeSH Terms] OR “Nursing Homes”[MeSH] OR “Long-term care”[MeSH] OR “Caregivers” [MeSH] OR “Homebound Persons”[MeSH] OR “Home care services”[MeSH] OR old[Title/Abstract] OR olds[Title/Abstract] OR senior[Title/Abstract] OR seniors[Title/Abstract] OR ageing[Title/Abstract] OR aging[Title/Abstract] OR aged[Title/Abstract] OR nursing home*[Title/Abstract] OR community dwelling[Title/Abstract] OR care home*[Title/Abstract] OR carer[Title/Abstract] OR carers[Title/Abstract] OR long-term care[Title/Abstract] OR caregiver[Title/Abstract] OR care giver[Title/Abstract] OR caregivers[Title/Abstract] OR care givers[Title/Abstract] OR homebound[Title/Abstract] OR resident*[Title/Abstract]</p> <p>#2 (“Adult”[MeSH] OR “Middle Aged”[MeSH] OR “Young Adult”[MeSH] OR Child[MeSH] OR “Child, Preschool”[MeSH] OR Infant[MeSH] OR “Infant, Newborn”[MeSH] OR “Internship and Residency”[MeSH]) NOT “Aged”[MeSH]</p> <p>#3 #1 NOT #2</p> <p>#4 “Aged”[MeSH] OR “Geriatrics” [MeSH] OR older[tiab] OR oldest[tiab] OR elder[tiab] OR elderly[tiab] OR elders[tiab] OR eldership[tiab]</p>
INTERVENTION	<p>((social capital[Title/Abstract]) OR (social network[Title/Abstract]) OR (social support[Title/Abstract]) OR (social participation[Title/Abstract]) OR (social activit*[Title/Abstract]) OR (leisure activit*[Title]) OR (reciprocit*[Title]) OR (Political participation[tiab]) OR (political[ti] AND participation[ti]) OR (Civic participation[tiab]) OR (civic*[ti] AND participation[ti]) OR (Institutional trust[tiab]) OR (institutional[ti] AND trust[ti]) OR (psychosocial rehabilitation [tiab]) OR (psychosocial*[ti] AND rehabilitation[ti]) OR (social cohesion[Title/Abstract]) OR (interpersonal relation*[Title]) OR (social relation*[Title]) OR (social ties[Title/Abstract]) OR (psychosocial support[Title/Abstract]) OR (peer support[Title/Abstract]) OR (peer advisor[Title/Abstract]) OR (psychosocial[Title] AND intervention*[Title]) OR (psychosocial[Title] AND program*[Title]) OR (social intervention*[Title/Abstract]) OR (social[ti] AND intervention[ti]) OR (social program*[Title/Abstract]) OR (emotional support[Title/Abstract]) OR (befriend*[Title/Abstract]) OR (social contact*[Title/Abstract]) OR (friend[Title/Abstract] OR friendless[Title/Abstract] OR friendlessness[Title/Abstract] OR friends[Title/Abstract] OR friendship[Title/Abstract] OR friendships[Title/Abstract]) OR (social interaction[Title/Abstract] OR social interactions[Title/Abstract] OR social interactivity[Title/Abstract] OR (sense of belonging[Title/Abstract]) OR (community participation[Title]) OR (community involv*[Title]) OR (sense of community[Title/Abstract]) OR (social engagement[Title/Abstract]) OR (intergenerational [ti]) OR (Social activation [Title/Abstract]) OR (social AND activation [Title/Abstract]) OR (social exclusion[Title/Abstract]) OR (“social support”[MAJR]) OR (“social isolation”[MAJR]) OR (“social capital”[MeSH Terms]) OR (“community networks”[MAJR]) OR (“interpersonal relations”[MAJR]) OR (“social participation”[MAJR]) OR (“community integration”[MAJR])))</p>

<b>DESIGN</b>	(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR randomly[tiab] OR trial[tiab] OR groups[tiab] OR intervention[ti]) NOT (animals [mh] NOT humans [mh])
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## References

<sup>1</sup>Lefebvre C, Manheimer E, Glanville J. Chapter 6: Searching for studies. In: Higgins JPT, Green S (editors). *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011)*. The Cochrane Collaboration, 2011. Available from [www.handbook.cochrane.org](http://www.handbook.cochrane.org). [accessed July 2016]

<sup>2</sup>Nyqvist F, Forsman AK, Giuntoli G, et al. Social capital as a resource for mental well-being in older people: a systematic review. *Aging Ment Health* 2013;17:394–410. doi:10.1080/13607863.2012.742490

## Appendix 2: Descriptive table with detailed information at study level.

### NOTES:

IG: intervention group  
CG: control group  
SC: social capital

**STUDY DESIGN:** The study name is provided (if available). Concerning the study design, it is specified if it is a feasibility/pilot study and specificities on randomization (e.g., cluster randomization). The groups are specified when participants are randomized to more than 2 groups or both groups receive an intervention. With IG1, IG2, etc. is indicated the group considered as a social capital-based intervention, which might not coincide with all interventions groups considered by the authors (e.g. a group receiving only education might be considered intervention by the authors but control for our purpose since it is not a SC-based intervention).  
n=total of participants randomized to all groups.

**CONTEXT:** it contains a) the geographical context according the information provided in the paper (country, city, neighbourhood); b) the setting (i.e., urban/rural area and type of place in which the intervention is delivered) and c) the policy context highlighted in the background of the paper.

**TARGET POPULATION:** it contains eligibility criteria and population characteristics (as reported in the paper): age, % of women, ethnical minorities, socio-economic and educational level, further health and social characteristics of interest.

**SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS:** it describes in what consists the intervention and how it is delivered, how long, who delivers the intervention and theoretical background of the intervention design. In the case that the study has at least two different social capital-based interventions, only SC intervention groups are described using IG1, IG2, etc.

**SOCIAL CAPITAL GOALS AND COMPONENTS:** it describes the goals pursued by social capital in the intervention and which dimensions and directions of SC comprise the SC intervention.

Natural networks/existing and family networks are considered as bonding SC  
When professionals themselves are providing support is considered linking SC.  
Volunteers providing support is considered bridging SC (also peer volunteers).

**HEALTH OUTCOMES:** health variables assessed are classified according to the main health domains as follows: general health includes self-perceived health, quality of life and well-being; mental health includes depression and anxiety, loneliness, cognition and other psychological variables; physical health; mortality; nursing home placement and use of health resources.

**Appendix 2: Descriptive table with detailed information at study level.  
INCLUDED STUDIES PROMOTING SOCIAL CAPITAL AMONG COMMUNITY-DWELLING\* OLDER ADULTS**

\*it includes interventions delivered partially at the hospital and the rest at home.

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
<b>ID 1</b> Andersson, 1985 Anderson, 1982	To make an intervention to strengthen the local network, and then to evaluate this effort.	Aging and Loneliness Project RCT n= 108	Urban area 6 social districts in Stockholm, Sweden	<i>Eligibility criteria:</i> Women living alone in urban apartments, from the waiting list of old people who have requested admission to senior citizen apartments. Loneliness (at least sometimes)  <i>Characteristics:</i> Mean age 77, range: 60-80 100% women	<i>What and how:</i> Small neighbourhood groups among peers. Professionals facilitate that participants strengthen their social network with other peers.  <i>How long:</i> 6 months  <i>Who:</i> Home-help assistants set-up and close the group.  <i>Theoretical background:</i> To reduce loneliness: 1) availability of a confidant, 2) social comparison, 3) personal control. The sphere of intimate association and cooperation is the neighbourhood or community group of elders.	To strengthen the social local network to alleviate loneliness  The intervention builds social network within own neighbourhood with peers, as opportunity for finding a confidant and increase social participation --> <b>bonding social capital, structural and cognitive SC.</b>	<i>General health:</i> Subjective health  <i>Mental health:</i> Loneliness, alienation and powerlessness, self-esteem, inability to trust scale, psychosomatic complaints  <i>Physical health:</i> Number of drugs, blood pressure.
<b>ID 2</b> Boen, 2012	To examine the effect of a preventive senior centre group programme consisting of weekly meetings, on social support, depression and quality of life.	RCT n = 138	Two municipal districts, with one in eastern Oslo and one in western Oslo (urban area)  Norway  Three senior centres	<i>Eligibility criteria:</i> Over 65 year old, living at home at the 2 districts, having psychological distress and not having been regular users of the senior centre already.  <i>Characteristics:</i> Age range: 65-80+ 59.5% over 80 (IG) and 49.1% over 80 (CG) Women: 59.5% (IG) and 54.7 (CG) Married or cohabiting: 40.5% (IG)	<i>What and how</i> Senior centre group programme consisting in physical training programme and self-help group in which topics were agreed upon participants to discuss (transportation and a warm meal at a low cost provided)  <i>How long</i> 12 month long, weekly meetings, three-hour duration	To improve mental health, specifically to reduce/prevent depression.  The group leader volunteer provides social support and promotes exchange of social support among peers. Social participation is encouraged → <b>bonding and linking</b>	<i>General health:</i> Life satisfaction, quality of life and self-rated health.  <i>Mental health</i> Depression

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
				and 49.1 (CG) Low income: 16,2% (IG) and 22% (CG). Only primary education: 35.1% (IG) and 37.7 (CG)		<i>Who</i> Group leaders were trained volunteers, supervised by the project leader (registered nurse experienced as senior centre leader)  <i>Theoretical background:</i> Intervention programme not based in a theoretical background.	
<b>ID 3</b> Carroll, 2007	To determine if a community-based collaborative peer advisor/advanced practice nurse intervention increased participation in cardiac rehabilitation programs and reduced hospital readmissions after myocardial infarction (MI) and coronary artery bypass surgery (CABS) among for unpartnered older adults and determine whether the type of cardiovascular event influenced rehospitalization	Improving Health Outcomes for Cardiac Elders RCT n=247  Randomized to 4 groups: 1. standard of care group for MI, 2. standard of care group for CABS, 3. standard of care plus the treatment groups for MI (SC), 4. standard of care plus the treatment groups for CABS (SC).	East and west coast of USA  Enrolled from 5 academic medical centers after discharge  <i>Policy:</i> Current guidelines from cardiovascular experts underscore the importance of participation in cardiac rehabilitation as a part of secondary prevention	<i>Eligibility criteria:</i> Diagnosis of MI or CABS, older than 65 years, unpartnered (single, widowed, divorced), were able to speak and read English, and had access to a telephone.  <i>Characteristics:</i> Mean age 76.3 (SD:6.3) 66% women 8% minority ethnicity, 69% widowed, 19% less than high school, 54% household income lower than \$25,000	<i>What and how:</i> IG3 and IG4: Collaborative Peer Advisor/Advanced Practice Nurse Intervention consisting in a home visit within 72 hours and telephone calls at 2, 6, and 10 weeks from an advanced practice nurse and 12 weekly telephone calls from a peer advisor.  <i>How long:</i> For 12 weeks after discharge.  <i>Who:</i> Advanced practice nurse and a peer advisor.  <i>Theoretical background:</i> Social Cognition Theory. Social support and self-efficacy enhancement interventions.	To improve the physical and mental health of unpartnered older cardiac adults, to foster a successful recovery and to increase participation in cardiac rehabilitation program.  Social support is provided from professionals and peers --> <b>bonding and linking SC, cognitive SC bonding and linking</b>	<i>Use of health resources:</i> Cardiovascular rehospitalization and participation in cardiac rehabilitation programs
<b>ID 4</b> Charlesworth, 2008  Charlesworth, 2008b	To evaluate the effectiveness of a voluntary sector based befriending scheme in improving psychological	Befriending and costs of caring (BECCA) multi-site randomised controlled trial of a long term voluntary sector	East Anglia and London, UK IG: 61% urban location and CG:63% urban  Home intervention	<i>Eligibility criteria:</i> Family carers of people with primary progressive dementia community-dwelling spending 20 hours or more a week on care tasks. Excluded carers of carerecipients with pronounced	<i>What and how:</i> BECCA befriending schemes is a social support intervention that consists in access to a befriender facilitator in charge of providing contact with a trained lay volunteer befriender who provides emotional support through	To increase psychological wellbeing and quality of life.  Trained lay volunteer befriender provides	<i>General health</i> Wellbeing, health related quality of life,  <i>Mental health</i> Anxiety, depression, positive and negative

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
	wellbeing and quality of life for family carers of people with dementia	based befriending intervention RCT n=236	<i>Policy:</i> British government policies on service provision and voluntary action.	congenital or acquired cognitive impairment, or with terminal illness and carers of people in permanent residential, nursing, or long stay hospital accommodation.  <i>Characteristics:</i> Mean age of carers was 68 (range 36-91) Women: IG: 66% CG:63% Ethnic minorities: 2% non-white in CG. 17% with depression. Mean duration of caring under four years. Mean age of care-recipients 78 years	companionship, conversation and listening during home visits.  <i>How long:</i> Weekly for at least six months.  <i>Who:</i> Trained lay workers and trained volunteers.  <i>Theoretical background:</i> Not stated.	emotional support --> <b>bridging, cognitive SC</b>	affectivity, loneliness, active and avoidance coping.  <i>Nursing home placement and mortality:</i> Institutionalisation and death of the person with dementia.
<b>ID 5</b> De Souza, 2007	To evaluate the effectiveness of a structured programme of intergenerational interaction, on perceived health status and cognitive components of social capital among older people and adolescents in a low income area of the Distrito Federal (DF) of Brazil.	Cluster randomized controlled trial n= 266 (+253 adolescents)	Distrito Federal (DF) of Brazil, Ceilandia, one of the satellite cities of Brasilia, low income area.  Secondary schools (students in the seventh and eighth grades, i.e., 12-18 years old)  <i>Policy:</i> WHO policy on Active Ageing (including intergenerational programmes)	<i>Eligibility criteria:</i> Aged 60 and over resident in the school's catchment area. Excluded if already participating in any reminiscence programme, severe alcoholism, severe speech impairment, severe cognitive impairment, or being bedridden  <i>Characteristics:</i> Mean age 69.5, SD 6.8 years. Women: 60.5% Education: none 47.1%; secondary or beyond 4.6%. Widowed: 28.9% Retired: 66.6% Main income from retirement or state pension: 73.3% Income for daily living not enough: 73.5%	<i>What and how:</i> Small group intergenerational activities, in which the elders shared their memories with the students. The intervention was based on the use of reminiscence to promote joint activities.  <i>How long:</i> 4 months programme. Sessions of approximately 2 h were held once a week.  <i>Who:</i> Teachers from the school and a nurse from the neighbouring health centre facilitate, as volunteers, the sessions in which elders interact with students.  <i>Theoretical background:</i> Not stated	To promote well-being Increase social network by promoting social interaction between students and older people → <b>structural and bridging SC</b>	<i>General health:</i> Perceived health status



AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
ID 6 Dodge, 2014	We examined the feasibility of a randomized controlled trial to assess whether conversation-based cognitive stimulation, through personal computers, webcams, and a user-friendly interactive Internet interface had high adherence and a to examine whether face-to-face conversation - a core component of social interaction - can enhance cognitive functions by stimulating social cognition among older adults without dementia and those with Mild Cognitive Impairment (MCI)	RCT which includes a feasibility aim n=83	Portland, Oregon, USA. Retirement communities and senior centers, intervention at home	<i>Eligibility criteria:</i> Age 70 or older; CDR=0 or 0.5, sufficient vision and hearing to engage in conversation by PC system, sufficient English language skills. Excluded if: plan to start taking new classes, traveling which requires more than two nights of stay away, or having significant social events such as a family wedding or a family reunion, during the scheduled prevention trial. Diseases associated with dementia. Significant disease of the central nervous system, alcohol or substance abuse, major depression, schizophrenia or other major psychiatric disorder. Unstable or significantly symptomatic cardiovascular disease. Active cancer. Illness that requires > 1 visit per month to a clinician. Progressive vision loss. Need for oxygen supplementation for adequate function. Frequent use of high doses of analgesics. Sedative medications. <i>Characteristics:</i> Mean 80.5 (SD 6.8) years Women: 75.9% Education: high school completed or above 96.4% Married: 46.3%	<i>What and how:</i> Social engagement in a unstructured conversation (i.e., conversation-based cognitive stimulation) through personal computers, webcams, and a user-friendly interactive internet communication programs <i>How long:</i> Daily 30 minute communications over a 6-week <i>Who:</i> Trained interviewers <i>Theoretical background:</i> Conversation requires synthesis of multiple cognitive functions.	To impact cognition Social engagement by talking with trained interviewers → <b>bridging SC, structural SC</b>	<i>Mental health</i> Cognition: attention, executive function, verbal fluency, psychomotor speed, immediate, delayed and working memory. Loneliness.
ID 7 Fried, 2004 Tan, 2006	To evaluate whether a program for older volunteers, designed for both	Experience Corps® Pilot randomized trial cluster	Baltimore, Maryland, US Urban area	<i>Eligibility criteria:</i> 60 years or older; ability to read and pass a criminal background check; ability to travel to the schools; a Mini-Mental State	<i>What and how:</i> Teams of 7-10 volunteers met regularly to problem solve, plan, and socialize + at least 15 hours a week of service over the full school year to: (1) support	To benefit health and function by improving multiple behavioral risk factors (social, cognitive and physical activity)	<i>Physical health</i> Physical activity, self-reported strength, performance-based measures of physical

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
Carlson, 2008	generativity and health promotion, leads to short-term improvements in multiple behavioral risk factors and positive effects on intermediary risk factors for disability and other morbidities.	(schools were randomly assigned) n=128	Public elementary schools	Examination score of 24 or above or, if among those with a high school education or less scoring between 20 and 23, ability to complete the Trail Making Test within specified time limits.  <i>Characteristics:</i> 60–86 years old, mean age of 69 years. Women: 92%. 95% African American. Mobility difficulty was frequent. 71% had attended some high school.	literacy development for children, (2) support library functions, (3) teach children how to solve problems and play non-violently or (4) enhance school attendance.  <i>How long:</i> At least 15 hours a week (usually over 3–4 days) of service over the full school year.  <i>Who:</i> Professionals train volunteers who support professionals in school (e.g. Librarian) where specially interact and support children but give support to each other (peers).  <i>Theoretical background:</i> Generativity and social capital	and achieve positive effects on intermediary risk factors for disability and other morbidities  Social engagement (social participation-volunteering), social support among peers, and social networks (among peers and intergenerational) → <b>bonding and bridging, structural and cognitive SC</b>	ability (walking speed, grip strength) and falls  <i>Mental health</i> Cognitive activity, executive function, psychomotor speed, verbal and visospatial memory. Depression.
ID 8 Friedland, 1992	To determine if social support intervention would improve the support experienced by stroke survivors and if improvement would result in better psychosocial outcome	RCT n=88 Setting not specified	Toronto, Canada	<i>Eligibility criteria:</i> Subjects from a community-based sample that had received rehabilitation services in the hospital and at home. All subjects had had a CVA cerebral vascular accident and had completed inpatient rehabilitation and rehabilitation provided by a home care program (HCP). Excluded: history of psychiatric admission or taking antidepressant medication. Aphasic subjects.  <i>Characteristics:</i> 69 mean age (10.6) Women: 65.8% Separated, widowed or divorced: 36%. Living alone: 20.9% Employed: 38.9%	<i>What and how:</i> SSI program (social support intervention) in which SSI therapist sessions, each of which involved the subjects and/or members of their support system  <i>How long:</i> 3 months, between 6 and 12 sessions  <i>Who:</i> SSI therapist.  <i>Theoretical background:</i> theoretic understanding of social support, aspects of social network theory and the expertise of clinicians knowledgeable about social network theory and the CVA population. The framework used for social support was multidimensional in scope and	To increase the support experienced by stroke survivors and thus improve psychosocial outcomes  Social support within the natural network → <b>bonding, cognitive SC</b>	<i>Mental health</i> Psychological distress and adjustment to disability.

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
				Education: less than high school 49.4%. Stroke: since their stroke (mean = 11.4 months, SD = 9.9 months), and 9.5 months had passed since discharge from the hospital (SD = 11.1 months).	phenomenologic in perspective. Ppsychoeducational approach.		
<b>ID 9</b> Gallagher, 1997 Cronan, 1998 Groessl, 2000 Shaw, 1994	To test the experimental hypothesis that, first, social support and, second, education about appropriate use of the health care system would increase the health status of older people with osteoarthritis and decrease unnecessary contact with the health care system.	RCT Randomized to 4 groups: 1. social support (IG1), 2. education, 3. combination of education and social support (IG2), 4. control group. n=363	USA	<b>Eligibility criteria:</b> Members from a large Health Maintenance Organization (HMO), with osteoarthritis, 60 years or older <b>Characteristics:</b> Mean age 69 Women: 64.3% 6% non-caucasian. Education: on average had attended 1 to 2 years of college	<b>What and how:</b> In IG1 and IG2. Social-support only group: 1. sessions on facilitating group process and learning theory; 2. participants role-played the learning techniques; 3. group members were given group-building tasks to accomplish during their meeting times. <b>How long:</b> 20 sessions: 10 weekly 2-hour sessions followed by 10 monthly 2-hour sessions. <b>Who:</b> Initially, professionals facilitate peer support. Afterwards, discussions occur without professionals <b>Theoretical background:</b> Not stated.	To promote an appropriate use of the health care system and thus increase the health status decreasing unnecessary contact with the health care system. Social support among peers → <b>bonding, cognitive SC</b>	<b>General health</b> Health status, quality of well being scale <b>Mental health</b> Self-efficacy, anxiety and depression <b>Physical health</b> Mobility, physical activity. <b>Use of health resources</b> Numbers of physician contacts, urgent care contacts, phone contacts, contacts with nurses, nurse practitioners, physician's assistants, hospital visits, emergency room visits, days in the hospital, and home visits.
<b>ID 11</b> Gruenewald, 2015 Parisi, 2015 Carlson, 2015	To examine whether participation in the intergenerational civic engagement program, Experience Corps (EC), benefits older adults' self-perceptions of generativity. the Baltimore	The Baltimore Experience Corps Trial RCT n=702 Brain Health Study (BHS) within the Baltimore	Baltimore, Maryland, US Public elementary schools	<b>Eligibility criteria:</b> Aged 60 years or older recruited from the general Baltimore community, agree to serve 15 or more hours per week as an EC volunteer for at least 1 school year, functionally literate at a 6th grade level or above, cognitively intact enough to be able to assist teachers and children in an effective and safe manner and if randomized to be an EC	<b>What and how:</b> Same as Fried, 2004 <b>How long:</b> Same as Fried, 2004 <b>Who:</b> Same as Fried, 2004 <b>Theoretical background</b> Same as Fried, 2004	Same as Fried, 2004 To benefit health and function by improving multiple behavioral risk factors (social, cognitive and physical activity) and achieve positive effects on intermediary risk factors for disability and other morbidities Social engagement	<b>Mental health</b> Self-perceptions of generativity Cortical and hippocampal volumes (BHS) <b>Physical health</b> Physical activity

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
	Experience Corps Trial (BECT), a dual effectiveness trial designed to test the potential benefits of high-intensity (target of 15 hr of volunteer service per week) EC participation over a 2-year period for both older adult volunteers and children and schools	Experience Corps Trial (BECT), a stratified randomization by sex) n=111		volunteer, to be able to travel to the assigned school, pass a criminal background check required by the school system, and behave in a manner appropriate for an elementary school environment.  <i>Additional criteria in the BHS:</i> Right-hand dominance; being free of a pacemaker or other ferrous metals in the body; and no history of brain cancer, brain aneurism or stroke in the prior year.  <i>Characteristics:</i> Age: mean 67.4, SD 5.9, range 60-89. 85% women African American 92%, other non-caucasian 3%. Education: less than high school 44% Income: less than \$15,000: 30%.		(social participation-volunteering), social support among peers, and social networks (among peers and intergenerational) → <b>bonding and bridging, structural and cognitive SC</b>	
<b>ID 13</b> Heister, 2013	To compare a reciprocal peer support (RPS) program with usual Heart Failure (HF) Nurse-led care management (NCM) in a community-based clinical setting.	RCT: Reciprocal Peer Support (RSP) arm vs. Nurse Care Management (NCM) arm  n=267	Southeastern Michigan, USA  <i>Policy:</i> National health on developing effective strategies to improve self-management and thereby reduce readmissions of patients with heart failure.	<i>Eligibility criteria:</i> Diagnosis of diastolic or systolic Heart Failure. Exclusion criteria: serious mental illness or cognitive dysfunction; do not speak English; unable to use the telephone; discharged to a long-term care facility or hospice care; actively abusing drugs or alcohol; had open heart surgery within the prior 6 weeks; actively participating in another HF self-management program; receiving active cancer treatment; or, had a diagnosis of end stage renal disease.	<i>What and how:</i> Reciprocal Peer Support. 1 HF nurse-led goal setting group session, training in peer communication skills, paired with another participant to talk weekly using a telephone platform. 3 NP-facilitated peer support group sessions.  <i>How long:</i> 3-hour group facilitated by a HF NP and research associate. three optional 1.5-hour group sessions facilitated by a NP and research associate at months 1, 3, and 6.	To improve health outcomes: less use of hospitalizations and decrease mortality  Social support from peers (reciprocal peer support) and support from the peer group and the professional facilitator <b>bonding and linking SC, cognitive SC</b>	<i>General health</i> Mortality Quality of life  <i>Physical health</i> Living with heart failure. Co-morbidities  <i>Use of health resources</i> Re-hospitalization; and number of hospitalizations

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ID 14 Heller, 1991	To test a preventive intervention in which peer telephone dyads were developed for low-income, community-living, elderly women with low perceived social support. The goals: to determine whether indigenous peer telephone dyads could be established among low-income elderly women and whether such supportive contacts were effective in maintaining and enhancing health, activity and morale.	RCT Intervention group is randomized again after 10 weeks to dyads or staff contact. n=291	Indiana, USA Small town, small city and large city areas	<p><i>Characteristics:</i> Median age 69 years 51% women, 26% racial/ethnic minorities Education: high school education or less: 43%. Annual income: equal or less than \$19,000 26%. Living alone: 25% Retired or not employed: 83.3%</p> <p><i>Eligibility criteria:</i> Low income, living in the community, being woman, low social support. Excluded those with gross cognitive and sensory impairment.</p> <p><i>Characteristics:</i> Median age 74, 100% women, 67% widowed, 74% living alone, Median income 7-9,000 dollars Median education 11th grade</p>	<p><i>Who:</i> Heart Failure nurse practitioner (HF NP)  <i>Theoretical background:</i> Not stated</p> <p><i>What and how:</i> Friendly staff telephone contact + peer support telephone dyads  <i>How long:</i> 1) 10 weeks friendly staff telephone contact: twice a week for 5 weeks and once a week for 5 weeks thereafter. 2) dyads: second 10-week period with regular staff contact and then 10 weeks more without any regular staff contact, dyads were encouraged to keep in contact with their telephone partner.  <i>Who:</i> Interviewers were mature women between 30-55.  <i>Theoretical background:</i> Emphasis on indigenous social support (reciprocal process, providing as important as receiving) --&gt; behaviors that the elderly can provide for one another with a minimum of professional intervention</p>	<p>To establish telephone friendship  Professional and peer support → <b>bonding and linking SC, cognitive SC</b></p>	<p><i>General health</i> Morale (sense of well-being)  <i>Physical health</i> <i>General physical health:</i> physical complaints and symptoms, difficulties in locomotion and presence of chronic conditions and illnesses, activities of daily living, capacity to perform instrumental and physical tasks.  <i>Mental health</i> Depression, loneliness</p>

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<b>ID 15</b> Hind, 2014	To evaluate whether telephone friendship (TF) improves the well-being of independently living older people	RCT Putting Life in Years (PLINY) n=157	UK Urban area Interventions at home  <i>Policy:</i> Research priorities established by the UK National Institute for Health and Care Excellence (NICE) on further research on home-based interventions that could improve or successfully maintain the mental well-being of vulnerable, older people living in the community.	<i>Eligibility criteria:</i> Aged > 74 years with good cognitive function and living independently in an urban community, having reasonable cognition.  <i>Characteristics:</i> Age: mean 80.8, SD 4.6, range 75-95 Women 67% Minority ethnicity: n=3. Living alone 29% Education: 12% with a degree, 4% with a higher degree Retired: 97%	<i>What and how:</i> Telephone friendship (TF) intervention: 1. one-to-one befriending made by volunteer facilitators followed by 2. TF groups of six participants facilitated by the same volunteer.  <i>How long:</i> 1. 10- to 20-minute calls once per week for up to 6 weeks 2. 1-hour teleconferences once per week for 12 weeks  <i>Who:</i> Volunteer facilitators  <i>Theoretical background:</i> Friendship groups aimed to enhance social support and increase opportunities for social interaction	To maintain well-being  Social support and opportunities for social interaction → <b>bridging and bonding SC, structural and cognitive SC</b>	<i>General health</i> Health-related quality of life (functional health and well-being), health status  <i>Mental health</i> Depression, self-efficacy, loneliness (general, emotional and social loneliness)  <i>Use of health resources</i> Hospital use medication, day services and community services, including visits to GP, practice nurse, district nurse, dietitian, health visitor, occupational therapist and physiotherapist among other professionals.
<b>ID 16</b> Jolling, 2012 Jolling, 2012b I	To investigate whether structured family meetings are more effective than usual care in the prevention of depression or anxiety disorders in primary caregivers of community-dwelling dementia patients.	RCT n=192	The Netherlands	<i>Eligibility criteria:</i> Primary family caregiver of a community dwelling relative with a clinical diagnosis of dementia and had at least one other family member or friend available to participate in the family meetings. Excluded if: 1) criteria for a clinical depressive or anxiety disorder. 2) patient scheduled to move into a nursing home; 3) severe somatic or psychiatric co-morbidity which would significantly impair cooperation with the study; and 4) insufficient proficiency in the Dutch language for an adequate	<i>What and how:</i> Individual sessions + structured family meetings + in-person counselling  <i>How long:</i> Two individual sessions and four family meetings which occurred once every 2 to 3 months for a year. six in-person counseling sessions: one individual preparation session, followed by four structured meetings that included their relatives and/or friends (family meetings), and one additional individual evaluation session. The family meetings were held once every 2 to 3 months in the year following enrolment	To delay nursing home placement and reduce depression and anxiety.  Mobilize the existing family networks of the patient and primary caregiver in order to improve emotional and instrumental support → <b>bonding SC, cognitive SC</b>	<i>General health</i> Health-related quality of life  <i>Mental health</i> Depression and anxiety, caregiver burden  <i>Use of health resources</i> Time until institutionalization of the patient.

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				<p>participation in meetings and interviews.</p> <p><i>Characteristics:</i> Age: mean 67.8, SD 9.8 (IG); mean 71.2, SD 10.7 (CG) Women: 70.8% (CG), 69.8% (IG) Spouse of the patient: 95.8% (IG), 92.7% (CG). Education: elementary school or lower 29.2% (IG), 35.4% (CG).</p>	<p><i>Who:</i> Counselors who led the family meetings had an advanced degree in nursing, social work, psychology or an allied profession</p> <p><i>Theoretical background:</i> Followed the New York University Spouse-Caregiver Intervention Study</p>		
ID 18 Laakkonen, 2014	To examine the effectiveness of a psychosocial group intervention to enhance self-management skills of persons with dementia and their spousal caregivers. The primary aim is to explore the effects of intervention on dementia patients' QoL and on spousal caregivers' QoL, sense of competence and psychological well-being.	RCT n=136 individuals with dementia living with their spousal caregivers (dyads)	Helsinki metropolitan area, greater Helsinki area (Helsinki, Espoo, Vantaa) Finland Day care centre	<p><i>Eligibility criteria:</i> Patients and their spouses who had recently received diagnosis of dementia, lived at home, no terminal disease; ability to concentrate and take part in a group without a spouse; independent in mobility with or without a device, Finnish speaking, no severe hearing loss that impedes participation in the group</p> <p><i>Characteristics:</i> Participants with dementia mean age 76.9 years (SD 6.3, range 58–92). Caregivers: mean age 74.9 years (SD 6.7, range 50–90). Women: 38% among participants with dementia. Among caregivers: 64.2% (IG), 60.9% (CG). Education below 8 years: among patients 43.3% (IG), 45.6% (CG); among caregivers 38.8% (IG), 42.0% (CG). Income: among caregivers moderate 68.1% (IG), 60.6% (CG)..</p>	<p><i>What and how:</i> Patients and their spouses participate in separate objective-oriented groups aimed at empowering participants and supporting their mastery and self-efficacy</p> <p><i>How long:</i> 4- hour sessions once a week over an 8-week period</p> <p><i>Who:</i> Groups were facilitated by two trained professionals</p> <p><i>Theoretical background:</i> Groups worked on the basis of the psychosocial group rehabilitation model and on self-management supporting principles, based on a constructive learning theory and a reflective learning model.</p>	To enhance self-management skills Peer support and professional support (emotional) → <b>bonding and linking SC, and linking SC, cognitive SC</b>	<p><i>General health</i> Patients' and spousal caregivers' health-related quality of life. mortality of both patients and caregivers</p> <p><i>Physical health</i> Weight, blood pressure and hand grip in the couples, activities of daily living and instrumental activities of daily living malnutrition signs of frailty.</p> <p><i>Mental health</i> Cognition: overall cognition, verbal fluency Depression (caregiver and person with dementia) Psychosocial Well-Being, self-efficacy, coping, sense of competence feelings of acceptance and helplessness</p> <p><i>Use of health resources</i> Use of health and social</p>

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ID 20 Mantovani, 1996 Mantovani, 1996b	To compare the impact of three different types of psychological intervention, namely a psychopharmacological treatment alone, the same treatment plus social support carried out by volunteers (SSV) and a third treatment modality including "structured psychotherapy" (autogenous training), on improving the HQL of elderly cancer patients undergoing antineoplastic therapy with symptoms of anxiety and/or depression related to their disease.	RCT Randomized to three different types of psychological intervention: 1. psychopharmacological treatment plus (alprazolam + sulpiride) treatment alone, 2. psychopharmacological treatment plus social support carried out by volunteers (SSV) (IG1) and 3. treatment modality including "structured psychotherapy" (autogenous training) (IG2). n=74	Cagliari, Italy Intervention delivered at hospital (Department of Medical Oncology) and at home	<i>Eligibility criteria:</i> Aged over 65 years with either solid tumors in different sites or hematological malignancies, generally in advanced stages (III-IV), with significant symptoms of anxiety and/or depression.  <i>Characteristics:</i> Mean age 70.68 years, range 66-85. Women: 41.7% Cancer: in head and neck 43%, stage IV 55.6%.	<i>What and how:</i> IG1 and IG2: Social Support Volunteers provide practical, informative and emotional support (excluding nursing) to cancer patients and their relatives, they encourage them to engage in recreational social activities  <i>How long:</i> Support was provided on a six hour weekly basis divided into 2-3 sessions, i.e., approximately 130 hours divided into 42-63 sessions, for the entire period of cancer treatment (around 5 months).  <i>Who:</i> Trained volunteers.  <i>Theoretical background:</i> Not stated.	To diminish symptoms of anxiety and depression related to their disease, thus improving the HQL.  Social support and social participation → <b>Bridging SC, cognitive and structural SC</b>	<i>General health</i> (Global health-related quality of life Functional Living with Cancer  <i>Physical health</i> Performance Status anticipatory and posttreatment nausea and emesis pain Subjective Chemotherapy Impact  <i>Mental health</i> Depression and anxiety
ID 22 McNeil, 1995	To compare two common types of nonprofessional home visits on measures of well-being in self-reported unhappy	RCT Randomized to one of 3 groups: nonprofessional home visits on measures of well-being in self-reported unhappy	Montreal, Canada	<i>Eligibility criteria:</i> At least 60 years of age, moderate level of depressed mood, not suicidal, free of cardiovascular problems, without evidence of cognitive impairment, not receiving treatment from a	<i>What and how:</i> Non-professional home visits involving accompanied walking plus casual conversation (IG1) or only casual conversation (IG2).  <i>How long:</i>	To decrease depressive symptoms  Social interaction → <b>Bridging SC, structural SC</b>	<i>Mental health</i> Happiness (psychological well-being)



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	and unhealthy elderly individuals living in the community: accompanied walking versus conversation	walking (IG1) 2. conversation (IG2) 3. a wait-list control. n=30		mental health professional, not using sedatives or tranquilizers, had obtained written permission from their family physician to engage in a walking program, had not experienced the death of a family member or close friend within 3 months, completed the Cooper 12-minute test for aerobic capacity.  <i>Characteristics:</i> 72.5 years (SD = 6.9), women: 86.7% 60% widowed mean educational level: 9.2 years (SD = 3.5)	Sessions were initially 20 minutes in duration, but increased to 40 minutes over the 6-week course of the program  <i>Who:</i> Non-professional undergraduate psychology student  <i>Theoretical background:</i> Not stated.		
<b>ID 23</b> Mittelman, 1993 Mittelman, 1995 Mittelman, 2004 Mittelman, 2004b Roth, 2005 Mittelman, 2006 Drentea, 2006 Mittelman, 2007	To examine the effectiveness of our caregiver intervention (i.e., comprehensive psychosocial support) on patient institutionalization.	NYU Spouse caregiver intervention  RCT n=406 (but initial papers include 206 participants and secondary analysis include subsamples of 312 and 385)	New York City Metropolitan Area	<i>Eligibility criteria:</i> Spousal primary caregiver of a patient with a clinical diagnosis of Alzheimer's Disease, residing together at home. Patient with at least one close relative living in the New York metropolitan area. Excluded if they had already received formal counseling or were participating in a support group.  <i>Characteristics:</i> (of the sample of 406 participants) Mean age 71.3 years, SD 9.0 Women: 60.1%. Minority ethnicity: 9.1% Patient income: none 11.3%, under 5000 16.3% Caregiver education: graduate school 16.7%, less than 7 years school 2.5%	<i>What and how:</i> NYU Spouse caregiver intervention, individual and family counseling sessions, support groups, continuous availability of counselors by telephone to caregivers and families  <i>How long:</i> In the first 4 months: two individual sessions and four family sessions. Afterwards, support groups met weekly and continue indefinitely.  <i>Who:</i> Professionals  <i>Theoretical background:</i> Not stated.	To delay institutionalization of Alzheimer's disease patients  Emotional support by professionals, extended social network with peers and peer support → <b>bonding and linking SC, cognitive and structural SC</b>	<i>General health</i> Self-rated health of the caregiver  <i>Physical health</i> Caregiver's physical health: number of reported chronic diseases. Physical health of the patient: number of reported chronic diseases.  <i>Mental health</i> Caregivers depression. Caregiver burden. Difficulty experienced by the caregiver with troublesome non-cognitive patient behavioral symptoms and with patient's need for assistance with activities

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Gaugler, 2011							of daily living <i>Use of health resources</i> Utilization of formal services by caregiver Nursing home placement
ID 24 Mortimer, 2012	To test if the walking and Tai Chi exercise groups would demonstrate increases in brain volume when compared with the No Intervention group.	RCT Randomized to four groups : 1. Tai Chi, 2. Walking, 3. Social Interaction (IG1), 4. No Intervention n=120	Shanghai, China At the neighborhood community center	<i>Eligibility criteria:</i> Non-demented older residents living independently in a geographically-defined area of Shanghai. Ages 60–79. Excluded if history of stroke, Parkinson's disease or other neurologic disease; inability to walk unassisted for two km or maintain balance with feet side-by-side or semitandem for 10 seconds each, education-adjusted Chinese Mini-Mental Examination score <26 (to exclude individuals with dementia or moderate cognitive impairment); cardiovascular or musculoskeletal conditions that would be contraindicated for the intervention programs; contraindications for MRI; diagnosis of any illness that would preclude participation in the full study; and regular vigorous exercise or Tai Chi practice.  <i>Characteristics:</i> Age (mean and SD): 67.3, 5.3 (G1), 67.8, 5.0 (G2), 67.9, 6.5 (G3), 68.2, 6.5 (G4) Women: 63.3% (G1), 63.3% (G2), 70% (G3), 70% (G4) Education (mean years and SD): 11.8, 2.6 (G1), 10.9, 3.9 (G2), 11.4, 3.3 (G3), 12.5, 3.8 (G4)	<i>What and how:</i> IG1. group meetings. Direction was initially given regarding subjects for discussion, the participants decided on their own to organize and select topics themselves.  <i>How long:</i> 1 h three times a week for 40 weeks.  <i>Who:</i> Group leader and an assistant  <i>Theoretical background:</i> Not stated.	To reduce dementia risk, improving neuropsychological parameters.  Social engagement and social interaction → <b>Bonding SC, structural SC</b>	<i>Physical health</i> MRI-based changes in brain volumes  <i>Mental health</i> Neuropsychological battery (executive function, copying and recall, Auditory Verbal Learning, Verbal Fluency.

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ID 25 Neil Thomas, 2012	To assess the usefulness of buddy support in improving physical activity and fitness and cardiovascular risk factors, specifically, the anthropometric variables body mass index, waist circumference and percentage body fat, and blood pressure in an older general Chinese population.	Cluster randomized controlled trial with a 2 x2 factorial design. Centers were randomly allocated to: 1. pedometry and buddy (IG1), 2. pedometry and no buddy, 3. no pedometry and buddy (IG2), and 4. no pedometry and no buddy n=399	Hong Kong, China Community centers for older persons, which provide social and recreational day services for members	<p><i>Eligibility criteria:</i> Age 60 years or older, had no recent history of myocardial infarction or stroke, and had no physical disabilities that made activity or the use of a pedometer difficult.</p> <p><i>Characteristics:</i> Comparing buddy intervention vs control Age: mean 72.4 SD 6.3 (CG); 71.7, 5.7 (IG) Women: 67.0% (CG), 65.3% (IG) Education: lower than primary school 29.1% (CG), 20.7% (IG).</p>	<p><i>What and how:</i> In IG1 and IG2, social support health behavior intervention was conducted. Group-based face-to-face counseling and advice on how to integrate physical activities into their daily routines and basic strategies for starting: 1. Buddy peer support system: instructions on how to enlist support and walking partners, such as joining a walking group or with other participants from the same center. 2. Organized group activities, 3. telephone calls with supportive feedback and organized walks.</p> <p><i>How long:</i> 12-month intervention. Research staff set walking goals with the participants on a weekly basis. Each buddy peer support participant was asked to reach the daily recommendations ACSM/CDC for 30 min of moderate physical activity, three to five times a week with a partner. Monthly group activities to provide encouragement and support; Monthly telephone calls.</p> <p><i>Who:</i> Research staff</p> <p><i>Theoretical background:</i> Social support interventions focus on changing physical activity behavior through building, strengthening, and maintaining social networks that provide support relationships for behavior change. Specifically, the interventions involve setting up a "buddy" peer support system, making a "contract" with one or more others to achieve specified levels of physical</p>	To increase physical activity Social support among peers → <b>bonding SC</b> , <b>cognitive SC</b> .	<p><i>Physical health:</i> Physical activity and aerobic fitness. physical ability: lower body strength (including functional and isometric lower body strength), arm strength. Cardiovascular risk factors: anthropometric measures, BMI, waist circumference and percentage body fat, and blood pressure.</p>

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					activity and additionally to provide companionship and social support.		
<b>ID 26</b> Onrust, 2008 Onrust, 2010	To assess if widows and widowers that have been offered targeted support by volunteers make less use of health care services, the latter being considerably more expensive than the attention of (trained) volunteers	RCT n=216	18 municipalities in the Netherlands Home visits	<i>Eligibility criteria:</i> Widowed during the past year, moderate or strong feelings of loneliness, and the absence of a full-blown mental disorder <i>Characteristics:</i> Age: range from 50 -to 92 years (Mean 68.8; SD 9.3) Women: 63.8% widowhood varied from 2 to 14 months (Mean 7.9; SD 1.9) 13 years of education on average	<i>What and how:</i> Visiting service for older widowed individuals based on the Widow-to-Widow program, which one-to-one support during home visits by exchanging experiences and emotions to gain a better understanding of their grieving process and providing information and practical help. <i>How long:</i> 10 – 12 home visits Frequency and duration not stated. <i>Who:</i> Trained volunteer who were widowed themselves for some years. <i>Theoretical background:</i> Not stated.	To improve mental health and quality of life Social support by peer volunteers → <b>bonding SC, cognitive SC.</b>	<i>General health</i> Quality of life <i>Physical health</i> Capability of performing domestic tasks <i>Mental health</i> Psychiatric illness, Depressive symptoms, anxiety, somatization, complicated grief, Mastery. <i>Use of health resources</i> Use of health care services and the
<b>ID 29</b> Routasalo, 2008 Savikko, 2009 Pitkala, 2009 Pitkala, 2011	To explore the effects of psychosocial group nursing intervention on older people's feelings of loneliness, social activity and psychological well-being.	RCT Participants were randomized in clusters of 16 people in each study site to form eight-person intervention group to the community where the participants came from. The	In six communities, Finland Groups met at the rehabilitation centers or group psychotherapy center	<i>Eligibility criteria:</i> 75 years or older, subjective feelings of loneliness, home dwelling. Excluded: moderate or severe dementia, blindness, deafness, inability to move independently. New York Heart Association Classification classes 3 and 4 (only in the exercise groups). <i>Characteristics:</i> Age: mean 80, SD 3, range 75-92 (IG), mean 80, SD 4, range 75-90 (CG)	<i>What and how:</i> Psychosocial group rehabilitation. Psychosocial groups consisted of three types of activities, depending on the interests of the participants: art and inspiring activities, group exercise and discussions, and therapeutic writing and group therapy. Participants could influence and modify the group programmes according to their interests, which in turn supported their empowerment. <i>How long:</i> The groups met once a week for 3	To reduce loneliness Peer support, professional support, social participation, extension of the social network → <b>bonding and linking SC, cognitive and structural SC.</b>	<i>General health</i> Psychological well-being Subjective health Mortal health related quality of life <i>Mental health</i> Cognition (neuropsychological battery) Loneliness Feeling needed Depression

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		participants with an interest in the same activity (exercise, art, or writing) were primarily invited in the same cluster. n=235		Women: 74.4% (IG), 72.9% (CG) Widowed: 68.1% (IG), 68.6% (CG) Education: primary school or less 54.0% (IG), 48.7% (CG) Living alone: 80.2% (IG), 78.8% (CG) Economic status: moderate 79.6% (IG), 82.1% (CG).	months (12 times). Meetings lasted for 5 – 6 hours.  <i>Who:</i> Professional leaders: Each group had two professional group leaders One was a specialist Registered Nurse and the other was an occupational therapist or physiotherapist.  <i>Theoretical background:</i> By taking advantage of group dynamics and the normal maturation of group life, they aimed to empower participants and promote friendships, working more as facilitators than as active leaders. The idea of the intervention was that group participants would share their feelings of loneliness with people of their own age who were having similar experiences, receive peer support, and develop feelings of solidarity. This would in turn lead to empowerment, better mastery over their own lives, and support for their self-respect.		<i>Use of health resources</i> Use of health services
<b>ID 30</b> Quayhagen, 2000	To evaluate the efficacy of four nonpharmacologic interventions on outcomes for spouses coping with dementia.	RCT randomized to one of four treatment programs: 1. Cognitive stimulation on the individual dyad. 2. dyadic counseling with each couple dyad (individualized affective support), 3. dual	California. US Alzheimer's Disease Research Center	<i>Eligibility criteria:</i> Physically capable of participating in intervention activities and willing to drive to intervention sites. The patient had to have been diagnosed with a dementia, that is, with either possible or probable AD, cardiovascular (myocardial infarct) dementia, or Parkinson's dementia. In addition, the patient had to be in the mild to moderate stages of dementia.  <i>Characteristics:</i> Caregiver: mean age 71.8 (SE 0.8).	<i>What and how:</i> IG1: participants initially met together for introduction to the course. In the remaining seven sessions, patients and their caregivers met separately first and then simultaneously to discuss specific topics. Seminars that provide a forum for information exchange, support, discussion, and problem solving. IG2: respite care and education/training opportunities for caregivers, and a stimulating and supportive social environment for higher functioning individuals with dementia. Caregivers met in a support group for peer and counseling support	To increase in morale (subjective well-being)  Peer support (in IG1 dual supportive seminar and the peer support group for caregivers in IG2), sense of community involvement (community engagement and social participation) (only in the early-stage day-care program IG2). <b>IG1: bonding and linking and cognitive SC.</b>	<i>General health</i> Morale  <i>Physical health</i> Caregivers' physical health status: severity and frequency of health problems.  <i>Mental health</i> Patients: neuropsychologic measures- memory, verbal fluency, and problem-solving ability. Caregivers: marital

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		supportive seminar groups for the caregiver and patient (group-based affective support) (IG1), 4. early stage day care for the patient (group-based cognitive training) and support groups for the caregiver (group-based affective support) (IG2). 103 participant dyads (caregiver and dementia-diagnosed spouse)		Carerecipient: mean age 74.5 (SE 0.7). Women: caregivers 63.1%, carerecipients 36.9%. 2% African American, 1% Asian, and 4% Hispanic.	<i>How long:</i> 8 weeks IG1. 8 sessions of 2 hours. IG2. Patients met for 4 hours a week. Caregiver group: monthly.  <i>Who:</i> Graduate students and licensed clinical personnel from psychology, social work, and nursing.  <i>Theoretical background:</i> IG1. theory on supportive group work. IG2. Social day-care model	<b>IG2: bonding and linking, cognitive and structural SC.</b>	interaction, emotional status: (depressive, hostile, and anxious symptoms), stress, coping. Stress that caregivers experience in front of Memory and Behavior Problems of the dementia patient
<b>ID 33</b> Saito, 2012	To examine the effect of a social isolation prevention program (i.e., improving community knowledge and networking with other participants and community "gatekeepers) on loneliness, depression, and subjective well-being among older Japanese	RCT n=63	Suburbs of Tokyo, Japan Meetings in a public facility	<i>Eligibility criteria:</i> Aged 65 years or over, had moved into City A within the last 2 years. <i>Excluded:</i> persons who had moved to residential facilities  <i>Characteristics:</i> Age: mean 72.6, SD 4.4 (IG), mean 72.8, SD 4.8 (CG). Women: 60% (IG), 70% (CG). Living alone: 35.0% (IG), 30.0% (CG) Education: junior college or above 35.0% (IG), 35.0% (CG).	<i>What and how:</i> Four sessions of a group-based program. Participants acquainted themselves with other older migrants and staff; group discussion about the effects of participants' relocation experiences, finding out what information each participant was interested in and meetings with gatekeepers who could support each participant based on their interests; sightseeing tour of City A to show public facilities and historical places.  <i>How long:</i> Four 2-h sessions, once every 2 weeks during 2 months.	To prevent social isolation Sharing experiences (emotional support) between peers and with professional support, improving community knowledge and networking with other participants and community "gatekeepers --> extending social network and social participation → <b>bonding, bridging and linking SC, cognitive and</b>	<b>General health</b> Subjective well-being, life satisfaction  <b>Mental health</b> Depression, loneliness.

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	INTERVENTION CHARACTERISTICS	SOCIAL CAPITAL-RELATED GOALS AND COMPONENTS	HEALTH OUTCOMES
	migrants				<p><i>Who:</i> Professionals lead group sessions, volunteer supporters, community gatekeepers.</p> <p><i>Theoretical background:</i> Not stated.</p>	structural SC	
<b>ID 35</b> Wilson, 1987	To determine whether supportive behavior could be elicited from elderly peers in a diabetes education class, and to determine the incremental effects upon weight loss and upon the reduction in blood glucose levels when social support is added to diabetes education.	Cluster randomized trial Three groups were formed: education only, education and peer support (SC) and control group. n=79	Oregon, US Largely rural, four-county area	<p><i>Eligibility criteria:</i> Noninsulin-dependent diabetes mellitus, and had been advised by their health care provider to lose weight.</p> <p><i>Characteristics:</i> Age 68.2 (SD 7.2) Women: 80%</p>	<p><i>What and how:</i> Peer Support upon Weight and Glycemic Control of Elderly Persons with Noninsulin Dependent Diabetes Mellitus (NIDDM): Classes based on basic concepts about diabetes and its nutritional aspects + Peer support sessions</p> <p><i>How/long:</i> 10 sessions over 16 weeks: 8 sessions weekly, session 9 at week 12 and session 10 at week 16. Session of 2 hours: 60-minute education classes + 60-minute peer support sessions.</p> <p><i>Who:</i> Classes were conducted by a registered dietitian.</p> <p><i>Theoretical background:</i> Not stated.</p>	<p>To enhance weight loss and the reduction in blood glucose levels</p> <p>Social support from the peer support facilitator and among peers → <b>bonding and linking SC, cognitive SC</b></p>	<p><i>Physical health</i> Glycosylated hemoglobin (GHb) Weight</p> <p><i>Mental health</i> Attitudes, beliefs and behaviors concerning diabetes.</p>
<b>ID 36</b> Winter, 2007	To evaluate the feasibility and effectiveness of professionally led telephone-based support groups for female family caregivers of community-dwelling dementia	RCT n=103	Philadelphia, USA At home	<p><i>Eligibility criteria:</i> Being female, 50 years of age or older, providing care for a minimum of 6 months to a relative with a physician's diagnosis of ADRD, and having weekly access to a telephone for at least 1 hour.</p> <p><i>Characteristics:</i> Mean age was 66.6 years (SD</p>	<p><i>What and how:</i> Telephone-Based Support for Dementia Caregivers in a group base, using conference-calling technology. Caregivers express emotions and share coping strategies, including cognitive reframing and practical approaches to organizing care routines, also assist each other in problem solving and share educational resources.</p>	<p>To enhance caregiver ability to manage daily stressors</p> <p>Emotional support, mutual support, supportive social network → <b>Bonding and linking, cognitive and structural SC</b></p>	<p><i>Mental health</i> Caregiver depression Caregiver burden Gain Through Group Involvement</p>

AUTHOR(S)/ YEAR		STUDY AIM		STUDY DESIGN		CONTEXT		TARGET POPULATION		INTERVENTION CHARACTERISTICS		SOCIAL CAPITAL- RELATED GOALS AND COMPONENTS		HEALTH OUTCOMES
		patients.						<p>9.1; range, 51-86)  Women: 100%  Wives: 57.7%  African American: 31.7%  High school graduates: 35.6%,  less than 12 years of education:  10.6%.</p>		<p><i>How long:</i>  Calls for an hour weekly. 26 calls in the  6 months.</p> <p><i>Who:</i>  Groups conducted by trained social  workers.</p> <p><i>Theoretical background:</i>  Stress process theory. The mutual  support and validation provided by  group members normalize experiences  and provide a supportive social  network, core to the service model.</p>				



Table S2: INCLUDED STUDIES PROMOTING SOCIAL CAPITAL AMONG OLDER ADULTS LIVING IN NURSING HOMES AND HOSPITAL FACILITIES\*\*

\*\*when the intervention is exclusively delivered in the hospital.

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
ID 10 Gleibs, 2011	To test the idea that establishing water clubs in care homes can counteract the dangers of dehydration and enhance residents' health and well-being, and also explored the possibility that it is the that clubs provide which delivers health-related benefits. to ascertain whether the benefits of water clubs are due to the focus on water intake or the increased social interaction and identification with others taking part in the groups.	Pilot evaluation, RCT with stratified randomisation (i.e. participants within the same home and care level were allocated randomly to conditions). Randomized to 4 groups: 1. water club (IG1), 2. water solo, 3. control group (IG2), 4. control solo. n=66	South-west of England, UK Three care homes	<i>Eligibility criteria:</i> Not occupying a nursing care bed, and having sufficient language ability to take part.  <i>Characteristics:</i> Age: mean 85.3, SD. 5.4, range: 70–97 Women: 73.3% Mean value on the Mini Mental State Examination: 17.5 (SD 7.46)	<i>What and how:</i> IG1. Water club condition: discussing the benefits of water. IG2. Control group: residents discuss in group their experiences in the care home and their daily life.  <i>How long:</i> Weekly meetings lasted between 20 and 30 min and were conducted over a period of 8 weeks.  <i>Who:</i> Group facilitators were trained and experienced activity co-ordinators and social work students.  <i>Theoretical background:</i> Social identity approach to health	To achieve health-related benefits.  Social interaction, social engagement, promote social group memberships to enhance social identity and social support → <b>Bonding SC, cognitive and structural SC</b>	<i>General health</i> Well-being/ quality of life  <i>Use of health services</i> Number of General Practitioner calls needed to be made on behalf of residents

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
ID 12 Haslam, 2010	To investigate the impact of group reminiscence (GR) and individual reminiscence (IR) activities on older adults living in care settings	RCT with stratified randomization (i.e., participants within the same home and care level were allocated randomly to conditions)  Randomized to three groups: 1. Group Reminiscence (IG1), 2. Individual Reminiscence, 3. control group activity (playing Skittles) (IG2).  n=73	Australia  Nine participating care homes, standard or specialized (i.e., dementia) care units	<i>Eligibility criteria:</i> All residents from the care home were included except if they occupied a nursing care bed, had significant language difficulties, had a prior history of psychosis, or had severe auditory or visual impairments  <i>Characteristics:</i> Age range 58-95 Women: 80.8% Dementia and high disability: 54.8%	<i>What and how:</i> IG1. Group-based intervention to create a sense of shared social identification among participants. Participants were asked to reminisce on specific topics related to their lives.  IG2. Control group activity (playing Skittles)  <i>How long:</i> Over 6 weeks, weekly sessions lasting approximately 30 min.  <i>Who:</i> Professionals from the research team facilitate group activity.  <i>Theoretical background:</i> Social identity framework applied to health and wellbeing: better health outcomes for group-based interventions as a result of their capacity to create a sense of shared social identification among participants.	To influence health and well-being  Sense of belonging, social integration, shared social identification  <b>bonding SC, cognitive SC</b>	<i>General health</i> Well-being, Quality of Life in Alzheimer's Disease, Life Improvement  <i>Mental health</i> (Cognitive Ability on attention/orientation, memory, verbal fluency, language, and visuospatial ability, Anxiety and Depression Personal identity strength
ID 17 Kuck, 2014	To promote residents' sleep by improving their social activation and physical mobilization	Project INSOMNIA (sub-project of the "Autonomy despite Multimorbidity in old Age" (AMA).  Cluster-randomized intervention trial  n=85	Berlin area, Germany  Long-term care facilities	<i>Eligibility criteria:</i> With difficulty falling asleep or staying asleep or suffered from non-restful sleep at least once a week and physically able to participate in the exercise program. Excluded: severe cognitive impairment and medical conditions which prevented residents from participating in the trial (e.g., recent heart attack, acute heart failure, coronary artery disease with unstable angina, aortic stenosis, severe COPD and phlebitis/thrombosis in the last four	<i>What and how:</i> Social and physical activation through group activities. The activity program included two sessions of social activity and two sessions of physical training. Social activities promoted residents' communication and social interaction skills to increase social interaction by working on cognitive skills, fine motor skills and creative skills, parlor games and group discussions. The physical training, comprised exercises on balance, strength and endurance.  <i>How long:</i>	To promote residents' sleep  Social interaction → <b>bonding SC, structural SC</b>	<i>Mental health</i> Sleep: Insomnia Severity, sleep quality, sleep disturbances and actigraphy-based sleep parameters (time in bed, sleep duration, sleep efficiency and sleep fragmentation).

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
ID 19 Low, 2013.	To determine whether humour therapy reduces depression (primary outcome), agitation and behavioural disturbances and improves social engagement and quality-of-life in nursing home residents.	The Sydney Multisite Intervention of LaughterBosses and ElderClowns (SMILE) study  Cluster randomised controlled trial  n=398	Greater metropolitan Sydney, Australia  Nursing homes	weeks)  <i>Characteristics:</i> Age: mean 83.9 SD, 9.3 (IG); mean 83.8, SD 8.0 (CG). Cognitively impaired: 62.5% (IG), 30.2% (CG). Women: 71.9% (IG), 79.2% (CG)	Group activities lasting 45 min four times a week during an eight-week study course.  <i>Who:</i> Social activation provided by qualified occupational and physical activation by physical therapists  <i>Theoretical background:</i> The social activity program adopted an occupation-based and client-centered approach. Rationale: to maximize sleep duration and minimize sleep latency and nocturnal awakening by enhancing homeostatic sleep drive and strengthening the entrainment of the circadian rhythm.	To reduce depression, agitation and behavioural disturbances and improve social engagement and quality-of-life.  Social interaction with professionals and peers, social engagement → <b>linking and bonding SC, structural SC</b>	<i>General health</i> Health-related quality-of-life  <i>Mental health</i> Depression, agitation and behavioural disturbance

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
				76.7% (IG). Years lived in care: mean 2.7 SD 2.8 (CG), mean 2.8 SD 3.1 (IG).	therapy. ElderClowns: trained performers experienced in healthcare settings.  <i>Theoretical background:</i> Humour is a fundamental form of social play with many psychological benefits: facilitating positive emotions that in turn may increase problem solving and memory efficiency; facilitating social communication, social influence and bonding and tension relief and coping with anxiety.		
<b>ID 21</b> McCurren, 1999	To determine the efficacy of an intervention strategy for depression using a geropsychiatric nurse in conjunction with trained older adult volunteers in the role of mental health paraprofessionals	RCT n=85	Louisville, KY, USA  Nursing home facilities n=85  <i>Policy:</i> Required assessments in nursing home settings (RAI-Minimum Data Set)	<i>Eligibility criteria:</i> 65 years of age or older, with depressive symptomatology, length of stay since admission of 12 months or less. Excluded if: diagnosis and symptom progression consistent with advanced irreversible dementia, terminal illness, temporary admission status.  <i>Characteristics:</i> Age: mean 84.5 SD 7.1. Women: 81% Black: 2% Length of stay in nursing home: mean 4.6 months SD 3.4.	<i>What and how:</i> (a) Initial evaluation by a nurse, (b) visits two times per week by a volunteer, and (c) weekly visits by the nurse. Individualized strategies included provision of emotional and social support, development of diversionary activities (social participation), and enhancement of the social network. The volunteers became confidants and worked diligently to enhance the socialization of the resident where possible  <i>How long:</i> 24 weeks  <i>Who:</i> Master's-prepared geropsychiatric nurse and volunteers. A psychiatrist was available for consultation.  <i>Theoretical background:</i> Not stated.	To alleviate depression  Emotional and social support, social participation and enhancement of the social network → <b>bridging social capital, cognitive and structural SC</b>	<i>General health</i> Life satisfaction  <i>Physical health</i> Health status Functional Ability: degree of dependence related to activities of daily living  <i>Mental health</i> Depressive symptomatology, mood Mental Status
<b>ID 27</b> Oppikofer, 2002	To examine whether and to what extent social support in the form	Käferberg-Besucherstudie RCT	Zürich, Switzerland  Urban area	<i>Eligibility criteria:</i> Age (>65), Dementia diagnose (MMS=5-25), receiving 2 or less visits per week and with capacity	<i>What and how:</i> Regular one-to-one visits. Volunteer visitors were assigned to the nursing home residents according to similar	To increase well-being  Social support → <b>Bridging SC, cognitive</b>	<i>General health</i> Well-being and quality of life. Satisfaction

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
	of regular visits is increasing the well-being of demented aged	n=46	Nursing home	to answer easy questions. <i>Characteristics:</i> Age: range 65- 98, mean 85.6, SD 7.1 Women: 84.8%. Lengths of stay in nursing home: mean 3.9 years, SD 3.7 (IG), mean 2.2 years, SD 2.9 (CG).	interests and hobbies, language, work experience and gender. The volunteers were able to determine what they wanted to do. The only conditions were that the visitor and the participant were alone and they could not watch TV.  <i>How long:</i> For ten weeks, visits once a week for 60 minutes.  <i>Who:</i> Trained volunteers.  <i>Theoretical background:</i> Not stated.	<b>SC</b>	with health.  <i>Physical health</i> Days being ill, falls, medication, health status, disability, appetite.  <i>Mental health</i> Caregivers: Suffering and stress
<b>ID 28</b> Oppikofer, 2010	Same as Oppikofer 2002	RCT n=46	Graz, Austria Urban area Geriatric hospital	<i>Eligibility criteria:</i> Same as oppikofer 2002  <i>Characteristics:</i> Age: range 65- 98, mean 85.6, SD 7.14. Women: 84.2%	<i>What and how:</i> Same as Oppikofer 2002  <i>How long:</i> Same as Oppikofer 2002  <i>Who:</i> Same as Oppikofer 2002  <i>Theoretical background:</i> Same as Oppikofer 2002	To increase well-being <b>Bridging SC, cognitive SC</b>	<i>General health</i> Quality of life  <i>Physical health</i> Number of medication  <i>Mental health</i> Perception of disability and suffer Stress during care
<b>ID 31</b> Reinke, 1981	To assess the effect of a friendly visitor program on elderly residents of nursing homes on morale and cognitive abilities	RCT Randomly assigned to three conditions: 1. a conversation treatment condition (IG1), 2. a conversation-	Lawrence, Kansas, USA Intermediate care nursing homes	<i>Eligibility criteria:</i> All residents who were capable of completing the pre-test battery and who expressed an interest in being visited were accepted for the Friendly Visitor program.  <i>Characteristics:</i> Age: mean 79.45, SD 10.47, range 59-97. Women: 69.2%	<i>What and how:</i> Friendly Visitor program. Each resident in a visitation condition was assigned two student visitors. IG1. Visitors were instructed to engage residents in normal conversational interaction. IG2. Each subject was urged to play at least one game each visit in addition to the conversational component. Games judged to require the use of	To improve cognitive functioning and morale Social interaction → <b>bridging SC, structural SC</b>	<i>General health</i> Morale (life satisfaction) self-perceived health  <i>Physical health</i> physical condition  <i>Mental health</i>

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
		plus-games treatment condition (IG2), and 3. a waiting-list no-treatment control condition n=49		Education: mean 9.8 years, SD 3.8, range 3-18. Length of stay in nursing home: 44.3 months, SD 36.1, range 2-169.	<p>cognitive abilities and strategies.</p> <p><i>How long:</i> Each visitor visited for 1 hour per week. In total, visits were twice a week for 8 weeks.</p> <p><i>Who:</i> Undergraduate student trained as volunteers.</p> <p><i>Theoretical background:</i> Cognitive stimulation provided by visitation might be expected to facilitate the cognitive functioning of elderly persons since poor cognitive functioning among elderly persons is associated with the disuse of cognitive skills. Certain cognitive skills in elderly persons can be improved with training in the use of those skills.</p>		<p>cognitive functioning: verbal intelligence, reasoning, strategic-semantic memory, read and recall immediately, problem-solving test.</p>
ID 32 Robinson, 2013	To explore how the psychosocial effects of Paro (a seal robot) could be compared with a control group.	RCT n=40	Hillsborough, Auckland, New Zealand  Residential care facility (the Selwyn Heights retirement home, in the hospital and rest home areas, which provide 24-hour support 7 days a week.)	<p><i>Eligibility criteria:</i> Residents of hospital and rest home areas.</p> <p><i>Characteristics:</i> Age: range 55-100 years Women: 67.5% 48% with cognitive impairment.</p>	<p><i>What and how:</i> Paro, a seal robot, was incorporated into group activities. During those sessions, discussion groups were held and all residents had a chance to interact with the robot.</p> <p><i>How long:</i> 2 weekday afternoons for 12 weeks</p> <p><i>Who:</i> A professional brings Paro (the seal robot)</p> <p><i>Theoretical background:</i> Animals help fulfill criteria aimed at promoting better quality of life by increasing social interactions, decreasing loneliness, countering</p>	<p>To decrease loneliness and depression, and increase quality of life</p> <p>Social interactions between residents triggered by the dog and the seal robot → <b>bonding SC, structural SC</b></p>	<p><i>General health</i> Quality of life</p> <p><i>Mental health</i> Loneliness Depression</p>

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
ID 34 Williams, 1991	To examine the relationship between social support and depressive mood, mortality and morbidity for older residents of a nursing facility who were involuntarily relocated to a newly constructed nursing facility.	RCT n=60	Kansas city, USA Urban area Nursing care facility as a part of a larger retirement community offering a continuum of care	<i>Eligibility criteria:</i> Residents of a nursing facility (i.e., 24 h nursing care required) interviewable (i.e., ability to be interviewed according to their mental and physical status)  <i>Characteristics:</i> Age: mean 88, range 72-99 (IG); mean 86, range: 71-98 (CG) Women: 56.7% (IG), 83.3% (CG) Widowed: 50% (IG), 53.3% (CG). Average length of residency: 69 months, range 1-204 (IG); 46 months, range 1-166 (CG). Education: mean level of education 12 year, range 8-18 (IG); mean level of education 13 years, range 4-20 (CG).	boredom, and helping foster a sense of purpose. Furthermore, almost anyone can interact with an animal regardless of physical and cognitive impairment, as any person can communicate nonverbally with an animal by touching and stroking. Interactions with pets or animals have 3 effects: (1) physiological effect (eg, improvement of vital signs), (2) psychological effect (eg, relaxation, reduction of distress, and improvements in mood and depression); and (3) social effect (eg, facilitate communication). Companion robots may offer the same benefits as live animals but require less care and are more hygienic.  <i>What and how:</i> A professional helps older person to identify the needed social support in type and frequency and by whom and contact the person from the social network to achieve the desired social support. Support persons were informed of the importance of continued support during this potentially stressful experience. The social support provided was that that normally and naturally occurred between the residents and their identified source of support.  <i>How long:</i> Participants the frequency of support they found to be beneficial. Support persons were then asked by the investigator to provide this support to participants for the month before and after the relocation process.	To buffer the stressful experience of relocation trauma  The social support from the existing network was enhanced → <b>bonding SC, cognitive SC</b>	<i>Physical health</i> morbidity- level of physical health  <i>Mental health</i> Depression  <i>Mortality</i>

AUTHOR(S)/ YEAR	STUDY AIM	STUDY DESIGN	CONTEXT	TARGET POPULATION	SOCIAL CAPITAL-BASED INTERVENTION CHARACTERISTICS	INTERVENTION AIM and SOCIAL CAPITAL COMPONENTS	HEALTH OUTCOMES
					<p><i>Who:</i> A professional helps older person to identify the needed social support.</p> <p><i>Theoretical background:</i> Social support buffers the stressful experience of relocation trauma.</p>		



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### Appendix 3: Tables with reported effects on the outcomes quality of life, well-being, self-perceived health, mood, loneliness and mortality

#### **NOTES of appendix tables 1 to 6:**

Table 4 to table 9 present the outcomes reported by five or more studies.

**AUTHOR:** Only the main paper of the study is cited with the first author surname and year of publication. **Table 2** (Descriptive table with detailed information at study level) provides all papers included from each study with their completed references at the end.

**STUDY DESIGN: n (analysed)** the number of cases analysed for the specific outcome at the given assessment time. When two results are available (i.e., post-intervention and the last follow-up), the two analyzed sample sizes are provided as T1 and T2, respectively.

#### **HEALTH OUTCOMES:**

- 1. Measurement** scale used to assess each outcome
- 2. Timing** of the outcome measurement: in case of several follow-up assessments, **for each outcome** the post-intervention assessment and the last follow-up were selected to be included in the table
- 3. Statistical significance:** Results are presented as reported according to being statistically significant in favour of the intervention [**+SIG**] statistically significant in favour of the control [**-SIG**] or not significant [**NS**]. When the study includes more than one intervention group based on social capital and only one of them is reported to achieve a significantly favorable impact, that group is referred as IG1, IG2, etc., according to the specifications from **Table 2** (Descriptive table with detailed information at study level).
- 4. Summary of risk of bias:** it is judged at study level.

SC: social capital

Table 1: Reported effects on quality of life

AUTHOR(S)/ YEAR	STUDY DESIGN n (Initial/analysed)		Timing of outcome assessment	OUTCOME			Summary risk of bias
				Mesures of quality of life	Reported effect		
ID 12 Haslam, 2010	73	73	Post-intervention (after 6 weeks)	Quality of Life in Alzheimer's Disease scale (QoL-AD)	[NS]		?
ID 13 Heisler, 2013	267	199	Post-intervention (after 6 months)	Heart Failure-quality of life - Minnesota Living with Heart Failure Questionnaire (MLHF)	[NS]		?
ID 27 Oppikofer, 2002	46	43	Post-intervention (after 10 weeks)	Zürcher Lebensqualitätsinventar (Quality of life)	[+SIG]		-
ID 28 Oppikofer, 2010	46	32	Post-intervention (after 10 weeks)	Zürcher Lebensqualitätsinventar (Quality of life)	[+SIG]		-
ID 29 Routasalo, 2008	235	208	After 9 months follow-up	Health related QoL (15D)	[+SIG]		+
ID 32 Robinson, 2013	40	34	Post-intervention (after 12 weeks).	Quality of Life for Alzheimer's Disease (QoLAD): self-rated quality of life	[NS]		-
				Staff-rated quality of life	[NS]		

Table 2: Reported effects on well-being (including morale and life satisfaction)

AUTHOR(S)/ YEAR	STUDY DESIGN n (initial/analysed)		Timing of outcome assessment	OUTCOME			Summary risk of bias
				Measures of well-being	Reported effect		
ID 4 Charlesworth, 2008	236	189	After 18 months follow-up	Carers' wellbeing	[NS]		⊖
ID 9 Gallagher, 1997	363	245	T1: Post intervention (after 1 year) T2: After 2 years follow-up	Health status- quality of well being scale	[+SIG] T1 [NS] T2		⊖
ID 10 Gleibs, 2011	66	42	Post-intervention (after 3 months)	Well-being (four items taken from Jetten)	[NS]		⊖
ID 12 Haslam, 2010	73	73	Post intervention (after 6 weeks)	Well-being (combined HADS- Hospital anxiety and depression scale-, life improvement and Quality of Life Change scale)	[+SIG] IG2		⊕
ID 14 Heller, 1991	291	283	After 10 weeks (post-intervention of the friendly staff telephone contact, before dyads are built)	Sense of well-being-Philadelphia Geriatric Center (PGC) Morale Scale	[NS]		⊖
ID 29 Routasalo, 2008	235	208	After 9 months follow-up	Psychological well-being	[+SIG]		⊕
ID 33 Saito, 2012	63	60	T1: Post-intervention (after 1 month) T2: After 6 months follow-up	Subjective well-being - (Life Satisfaction Index-A) LSI-A	[+SIG] T1 and T2:		⊖
ID 2 Boen, 2012	138	92	Post-intervention (after 12 months)	Life satisfaction- scores	[NS]		⊖
ID 30 Quayhagen, 2000	206	103 caregivers and 103 patients	Post-intervention (after 3 months)	Morale - nine-item Geriatric Center Morale Scale	[+SIG] IG1		⊕
ID 31 Reinke, 1981	49	39	Post intervention (after 8 weeks)	Life Satisfaction Index A	[NS]		⊖
				Philadelphia Geriatric Center Morale Scale	[NS]		



Table 3: Reported effects on self-perceived health

AUTHOR(S)/YEAR	STUDY DESIGN (initial/analysed n )		Timing	OUTCOME			Summary risk of bias
				Measures of self-perceived health	Reported effect		
ID 1 Andersson, 1985	108	57	Post-intervention (after 6 months)	Overall subjective health	[NS]		
ID 2 Boen, 2012	138	92	Post-intervention (after 12 months)	Self-rated health-scores	[NS]		
ID 4 Charlesworth, 2008	236	189	After 18 months follow-up	EuroQol VAS (Visual Analog Scale)	[NS]		
ID 5 De Souza, 2007	266	239	Post-intervention (after 4 months)	Perceived health status from the Brazilian Old Age Scale	[NS]		
ID 15 Hind, 2014	157	56	Post-intervention (after 6 months)	EuroQol VAS	[NS]		
ID 22 McNeil, 1995	30	30	Post-intervention (after 6 weeks)	Subjective health is a single-item measure	[+ SIG] IG1		
ID 23 Mittelman, 1993 (Mittelman, 2007)	406	T1: 396 T3: 396	T1: 4 months of intervention T3: 2 years follow-up	Self-rated health of the caregiver-questionnaire adapted from the Older Americans Resources and Services Multidimensional Assessment Questionnaire (OARS)	[+ SIG] T1 and T3		
ID 29 Rutasalo, 2008	235	235	After 1.5 years follow-up	Subjective health	[+ SIG]		
ID 31 Reinke, 1981	49	39	Post-intervention (after 8 weeks)	Self-perceived health	[+ SIG]		

Table 4: Reported effects on mood (depression and anxiety)

AUTHOR(S)/YEAR	STUDY DESIGN n (initial/analysed)	Timing	OUTCOME			Summary risk of bias
			Measures of depression and anxiety	Reported effect		
ID 2 Boen, 2012	138 92	Post-intervention (after 12 months)	Depression-Beck Depression Inventory (BDI)	[NS]	⊖	
ID 4 Charlesworth, 2008	236 T1: 216 T2: 189	T1: post-intervention (after 6 months) T2: after 18 months follow-up	Hospital anxiety and depression scale (HADS)	[NS] T2	⊖	
ID 7 Fried, 2004	128	Follow-up at 4–8 months	Geriatric Depression Scale (GDS)	[NS]	⊕	
ID 12 Haslam, 2010	73	Post intervention (after 6 weeks)	Hospital Anxiety and Depression Scale (HADS) (combined with life improvement and quality of life)	[+SIG] IG2	?	
ID 14 Heller, 1991	291	After 10 weeks (post-intervention of the friendly staff telephone contact, before dyads are built)	Depression- Center for Epidemiological Studies Depression Scale (CES-D)	[NS]	⊖	
ID 15 Hind, 2014	157	Post-intervention (after 6 months)	The Patient Health Questionnaire – (PHQ-9) (self-reported depression)	[NS]	⊖	
ID 16 Jolliffe, 2012	192	T1: post intervention (after 12 months) T2: after 4 months follow-up	Clinical depression, Mini International Neuropsychiatric Interview (MINI)	[NS] T1	⊕	
ID 19 Low, 2013	398	T2: after 13 weeks follow-up	Depressive symptoms - Center for Epidemiologic Studies Depression Scale (CES-D)	[NS] T1		
ID 20 Mantovani, 1996	74	T1: after 2.5 months (i.e., half-way through the intervention) T2: Post-intervention (after 5 months)	Anxiety symptoms - Hospital Anxiety and Depression Scale- Anxiety subscale (HADS-A)	[NS] T1		
ID 21 McCurren, 1999	85	T1: 12 weeks (half way through the intervention) T2: post-intervention (24 weeks after baseline)	Depression scores on the Cornell Scale for Depression in Dementia	[NS] T2	⊕	
ID 23 Mittelman, 1993 (Mittelman 1995) (Mittelman 2004)	406 T2: 181 (Mittelman 1995) T4: 223 (Mittelman 2004)	T2: 8 months of intervention (Mittelman 1995) T4: 5 years follow-up (Mittelman 2004)	STAI State-Trait Anxiety Inventory	[+SIG] IG1 and IG2	⊖	
ID 26 Orrust, 2008	216	T1: post-intervention (after 6 months) T2: after 6 months follow-up	Geriatric Depression Scale (GDS-30)	[+SIG] T1 and T2	⊖	
			Geriatric Depression Scale (GDS-30)	[+SIG] T4	⊕	
			Anxiety and somatization - subscales (subscales from the Symptom Checklist SCL-90 ANX)	[NS] T1 and T2	?	

AUTHOR(S)/YEAR	STUDY DESIGN n (initial/analysed)	Timing	OUTCOME		Summary risk of bias
			Measures of depression and anxiety	Reported effect	
			Depressive symptoms - Center for Epidemiologic Studies Depression Scale (CES-D)	[NS] T1 and T2	
ID 29 Routasalo, 2008	235 214	T1: Post-intervention (after 3 months)	Montgomery Asberg Scale	[NS]	
ID 32 Robinson, 2013	40 34	Post-intervention (after 12 weeks).	Geriatric Depression Scale (GDS)	[NS]	
ID 33 Saito, 2012	63 60	T1: Post-intervention (after 1 month) T2: After 6 months follow-up	Geriatric Depression Scale (GDS)	[NS] T1 and T2	
ID 34 Williams, 1991	60 60	Post-intervention (2 months after baseline, i.e., one month post-relocation)	Depressive Adjective Check List	[+SIG]	
ID 36 Winter, 2007	103 94	Post-intervention (after 6 months)	Caregiver depression - 20-item Centers for Epidemiological Studies- Depression Scale (CES-D)	[NS]	

Table 5: Reported effects on loneliness:

AUTHOR(S)/YEAR	STUDY DESIGN (initial/analysed) n	Timing	OUTCOME			Summary risk of bias
			Measures of loneliness	Reported effect		
ID 1 Andersson, 1985	108 57	Post-intervention (after 6 months)	UCLA Loneliness Scale (short version)	[NS]		⊖
ID 4 Charlesworth, 2008	236 T1: 216 T2: 189	T1: post-intervention (after 6 months) T2: after 18 months follow-up	Loneliness (Stroebe et al., 1996)	[NS] T1 [NS] T2		⊖
ID 6 Dodge, 2014	83 T1: 83 T2: 83	T1: post-intervention (after 6 weeks) T2: after 12 weeks follow-up	3-item Loneliness scale developed by Hughes	[NS] T1 [NS] T2		?
ID 14 Heller, 1991	291	After 10 weeks (post-intervention of the friendly staff telephone contact, before dyads are built)	7-item loneliness scale from Paloutzian and Ellison	[NS]		⊖
ID 15 Hind, 2014	157	Post-intervention (after 6 months)	De Jong Gierveld Loneliness Scale	[NS]		⊖
ID 29 Routasalo, 2008	235 T1: 214 T2: 220	T1: Post-intervention (after 3 months) T2: After 3 months follow-up	UCLA Loneliness Scale	[NS] T1 [NS] T2		⊕
ID 32 Robinson, 2013	40	Post-intervention (after 12 weeks).	UCLA Loneliness Scale (Version 3)	⊕ SIG		⊖
ID 33 Saito, 2012	63 60	T1: Post-intervention (after 1 month) T2: After 6 months follow-up	Ando-Osada-Kodama (AOK) Loneliness scale (revised version of the UCLA Loneliness Scale)	⊕ SIG T1 ⊕ SIG T2		⊖

Table 6: Reported effects on mortality

AUTHOR(S)/ YEAR	STUDY DESIGN n (initial/analysed)	Timing	OUTCOME			
			Measures of Mortality	Reported effects	Risk of bias	
ID 4 Charlesworth, 2008	236 T1: 216 T2: 189	T2: after 18 months follow-up	Institutionalisation and death of the person with dementia	[NS] T2	⊖	
ID 9 Gallagher, 1997	363 245	T2: After 2 years follow-up	Mortality	[NS] T2	⊖	
ID 13 Heisler, 2013	267 199	T2: after 6 months follow-up	Time to death or first re-hospitalization regardless of cause (composite all-cause outcome)	[NS] T2	?	
ID 18 Laakkonen, 2014	136+136 (i.e., 136 caregivers +136 carerecipients with dementia)	T1: Post-intervention (after 3 months) T2: After 6 months follow-up	Death within 365 days of randomization	[NS] T2	⊕	
			Mortality of patients Mortality of caregivers	[NS] [NS]		
ID 29 Routasalo, 2008	235 75:235	T5: After 2.5 years follow-up	Survival	[+SIG] T5	⊕	
ID 34 Williams, 1991	60 60	Post-intervention (2 months after baseline, i.e., one month post-relocation)	Mortality	[NS]	?	

#### Appendix 4: Tables with reported effects on the categories psychological variables, physical health, cognition and use of health-related resources

##### **NOTES of appendix tables 7 to 11:**

Table 7 to table 11 present insufficiently reported outcomes (i.e., reported by 4 or less studies) grouped into wider health outcome categories. Table 10 and 11 show the use of health-related resources, i.e., use of health services and nursing home placement.

**AUTHOR:** Only the main paper of the study is cited with the first author surname and year of publication. **Table 2** (Descriptive table with detailed information at study level) provides all papers included from each study with their completed references at the end.

**STUDY DESIGN: n (analysed)** the number of cases analysed for the specific outcome at the given assessment time. When two results are available (i.e., post-intervention and the last follow-up), the two analyzed sample sizes are provided as T1 and T2, respectively.

##### **HEALTH OUTCOMES:**

1. **Measurement** scale used to assess each outcome
2. **Timing** of the outcome measurement: in case of several follow-up assessments, **for each outcome** the post-intervention assessment and the last follow-up were selected to be included in the table
3. **Statistical significance:** Results are presented as reported according to being statistically significant in favour of the intervention **[+SIG]**, statistically significant in favour of the control **[-SIG]** or not significant **[NS]**. When the study includes more than one intervention group based on social capital and only one of them is reported to achieve a significantly favorable impact, that group is referred as IG1, IG2, etc., according to the specifications from **Table 2** (Descriptive table with detailed information at study level).
4. **Summary of risk of bias:** it is judged at study level.

SC: social capital

**Table 7: Reported effects on the category psychological variables**

\*Positive outcomes are in *italics and negative in plain text*.

AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	OUTCOME			Summary risk of bias
			Measures of psycho measures*	Reported effect		
ID 1 Andersson, 1985	57	Post-intervention (after 6 months)	Alienation: meaninglessness scale from Gardell	<b>F-SIG</b>		
			Powerlessness-scale from Kluegel	<b>NS</b>		
			Self-esteem scale from Gardell	<b>F-SIG</b>		
			Inability to trust scale from Gardell	<b>NS</b>		
			Psychosomatic complaints scale (self validated)	<b>NS</b>		
ID 4 Charlesworth, 2008	T1: 216 T2: 189	T1: post-intervention (after 6 months) T2: after 18 months follow-up	Positive affectivity (positive and negative affectivity scale, PANAS)	<b>NS</b>		
			Active coping (COPE)	<b>NS</b>		
			Avoidance coping	<b>NS</b>		
			Psychosocial adjustment - 28-item scaled version of the General Health Questionnaire (GHQ)	<b>NS</b>		
ID 8 Friedland, 1992	78	T1: post-intervention (after 3 months) T2: after 3 months follow-up	Adjustment to disability - Sickness Impact Profile (SIP)	<b>NS</b>		
			Anxiety- Arthritis Helplessness Index (AHI)	<b>F-SIG</b> T1 and T2, IG2		
ID 9 Gallagher, 1997	245	T1: Post intervention (after 1 year) T2: After 2 years follow-up	Self-perceptions of generativity- Perceptions of generative desire and achievement (measure developed for the BECT)	<b>F-SIG</b> T1 and T2, Education control group		
			Personal identity strength	<b>NS</b>		
ID 11 Gruenewald, 2015	532	T1: During intervention (after 4 months) T2: 24-month follow-up	Social group homogeneity (social identification with their fellow residents)	<b>F-SIG</b> IG1, IG2		
			The General Perceived Self-Efficacy Scale (GSE)	<b>NS</b>		
ID 12 Haslam, 2010	73	Post intervention (after 6 weeks)	Caregiver burden - measured with the Caregiver Reaction Assessment (CRA)	<b>NS</b>		
ID 15 Hind, 2014	56	Post-intervention (after 6 months)	Insomnia Severity Index (ISI) (Sleep quality self-assessment questionnaire)	<b>F-SIG</b>		
ID 16 Jolliffe, 2012	192	Post intervention (after 12 months)				
ID 17 Kuck, 2014	85	Post intervention (after 8 weeks)				

OUTCOME					
AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	Measures of psycho measures*	Reported effect	Summary risk of bias
			Nurses' ratings of residents' sleep disturbances from the Minimum Data Set (MDS) of the Resident Assessment Instrument (RAI)	[NS]	
			Actigraphy-based sleep parameters: time in bed, sleep duration (total nocturnal sleep time), sleep efficiency (percentage of time in bed asleep) and sleep fragmentation outcome variables (wake after sleep onset, number of awakenings, mean awaking length, and mean sleep period duration).	[NS]	
ID 18 Laakkonen, 2014	136 dyads (i.e., 136 caregivers +136 carerecipients with dementia)	T1: Post-intervention (after 3 months) T2: After 6 months follow-up	Self-efficacy and coping with the Sense of Competence Questionnaire (SCQ)	[NS] T1 [NS] T2	
ID 19 Low, 2013	398	T1: post-intervention (after 13 weeks) T2: after 13 weeks follow-up	Caregiver personal coping resources by the Pearlin Mastery Scale	[NS] T1 [NS] T2	
ID 22 McNeil, 1995	30	Post-intervention (after 6 weeks)	Agitation scores on the Cohen-Mansfield Agitation Inventory	[F-SIG] T2	
ID 23 Mittelman, 1993 (Mittelman 2004)	T1: 105 (Mittelman 2004) T2: 385 (Gaugler, 2011)	T1: 4 years after enrollment (Mittelman 2004) T2: up to 16 years follow-up (Gaugler, 2011)	Behavioural disturbance scores on the Neuropsychiatric Inventory	[NS] T2	
ID 26 Onrust, 2008	185	T1: post-intervention (after 6 months) T2: after 6 months follow-up	Happiness-The Memorial University of Newfoundland Scale of Happiness (MUNSH)	[F-SIG] IG1, IG2	
ID 27 Oppikofer, 2002	43	Post-intervention (after 10 weeks)	Memory and Behavior Problems Checklist (MBPC) - Frequency of troublesome patient behaviors - Caregiver's reactions to these behaviors Caregiver burden- Burden Interview (Zarit)	[NS] T4 [F-SIG] T4 [F-SIG] T2 for subgroup of women, after nursing home placement of the husband with dementia	
			Complicated grief - revised Inventory of Complicated Grief- (ICG-R).	[NS]	
			SCL90 Somatization	[NS]	
			Stress during care	[NS]	



AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	OUTCOME			Summary risk of bias
			Measures of psycho measures*	Reported effect		
ID 28 Oppikofer, 2010	32	Post-intervention (after 10 weeks)	Quality of life Subscales: Perception of disability and suffer	<b>F+SIG</b>		
ID 29 Routasalo, 2008	208	After 9 months follow-up	Quality of life Subscales: Stress during care <i>Feeling needed (one of the dimensions of psychological wellbeing)</i>	<b>F+SIG</b> <b>F+SIG</b>		
ID 30 Quayhagen, 2000	103 caregivers and 103 patients	Post-intervention (after 3 months)	Caregivers: <i>Coping Strategies Inventory-Revised</i> Emotional status of the caregiver (depressive, hostile, and anxious symptoms) - Brief Symptom Inventory	<b>F+SIG</b> IG1 <b>F+SIG</b> IG2		
ID 36 Winter, 2007	94	Post-intervention (after 6 months)	Caregiver burden - 22-item Zarit burden scale <i>Gain Through Group Involvement Scale (6-item scale adapted from Kaye's10)</i>	<b>[NS]</b> <b>[NS]</b>		

**Additional text to Table 7 on psychological outcomes:**

19 studies analysed the impact on psychological outcomes and 11 (57.9%) achieved significantly positive results. All outcomes were self-reported.

Favourable results comprised: positive psychological outcomes (self-esteem[50], happiness[51], generativity[45], social identification[52], feeling needed[53]); negative psychological outcomes (meaninglessness[50], helplessness[54], insomnia[55], perception of suffering and disability, less stress during care by staff); caregiver specific outcomes (burden, reaction to troublesome behaviours from the dementia care recipients, coping strategies, feelings of hostility) and behavioural outcomes among dementia patients. Remarkably, four studies with positive results had a low risk of bias. One of them reduced agitation among residents with dementia with an effect size comparable to risperidone[56]. The other three studies decreased caregiver burden, improve coping strategies of caregivers and increased generativity. The rest had an unclear or high risk of bias.

**Table 8: Reported effects on the category physical health**

\*Objective outcomes are in *italics* and self-reported in plain text.

		OUTCOME			
AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	Objective and self-reported measures*	Reported effect	Summary risk of bias
ID 1 Andersson, 1985	57	Post-intervention (after 6 months)	<i>Number of drugs</i>	[NS]	
D 7 Fried, 2004 (Tan, 2006)	128	Follow-up at 4–8 months	Modified Minnesota Leisure Time Physical Activity Questionnaire (MLTPAQ) - Mean minutes expended per week in physical activities - Kilocalories expended/week - Kilocalories expended on household chores each week Questions from the Paffenbarger physical activity questionnaire - Mean blocks walked/week - Mean flights of stairs climbed/week Physical activity levels compared to last year	[NS] [NS] [+SIG]	
				[NS] [NS] [NS] [+SIG] subgroup initially inactive	
				[+SIG] [+SIG]	
				[NS]	
				[NS]	
				[NS]	
				[NS]	
				[NS]	
				[NS]	
ID 8 Friedland, 1992	78	T1: Post intervention (after 3 months) T2: After 3 months follow-up	Psychosocial adjustment - 28-item scaled version of the General Health Questionnaire (GHQ) Adjustment to disability - Sickness Impact Profile (SIP) Physical activity levels, Lifestyle Activity Questionnaire (LAQ)	[NS] [NS] [+SIG] T1 [NS] T2	
ID 11 Gruenewald, 2015 (Parisi, 2015)	532	T1: at 12 months after baseline T2: at 24 months after baseline		[NS] [NS]	
ID 20 Mantovani, 1996	72	T1: after 2,5 months (i.e., half-way through the intervention) T2: Post-intervention (after 5 months)	Karnofsky's Performance Status Scale (KPSS) Morrow Assessment of Nausea and Emesis (MANE) Scott-Huskisson's visual analogue for the subjective evaluation of pain Functional Living Index-Cancer (FLIC)	[NS] [NS] [+SIG] IG2 [+SIG] T1, IG1 and IG2	
ID 25 Neil Thomas, 2012	399	Post-intervention (after 12 months)	Subjective Chemotherapy Impact (SCI) questionnaire Changes in physical activity - the International Physical Activity Questionnaire (IPAQ) <i>Physical ability: get-up-and-go test</i>	[+SIG] IG1 [+SIG] IG1 and IG2 [+SIG] IG1	

			Submaximal Astrand cycle exercise test - aerobic fitness 30-s chair stand test - measures of lower body strength. A 30-s arm curl test (maximum number of arm curls in 30 s) - measure of arm strength, resistance provided in the males with an 8-lb dumbbell and in the females with a 5-lb dumbbell. Two maximal-effort isometric tests of lower body strength - including one of hip flexion and one of knee extension: the Nicholas Manual Muscle Test Body Mass Index (BMI) Waist circumference Percentage of body fat (foot-to-foot bioimpedance device, Tanita BF-350) Blood pressure (Seated blood pressure and heart rate with device HEM-705CP Omron, measured in triplicate after a 5- to 10-min rest, and the mean of three readings recorded) Number of drugs (Medication) Activity directors ratings on physical condition Health status - level of physical health: declined, improved or stayed the same compared to one month pre-relocation) Glycosylated hemoglobin (GHb) Weight (measured with a portable scale, calibrated with a standard weight)	[+SIG]  G1 [NS] [NS] [NS] [NS] [NS] [+SIG]  G1 [NS] [NS] [NS] [NS] [NS] [NS] [NS] [NS] [+SIG] [+SIG]		
ID 27	Oppikofer, 2002	43	Post-intervention (after 10 weeks)	[NS]		
ID 31	Reinke, 1981	39	Post intervention (after 8 weeks)	[NS]		
ID 34	Williams, 1991	60	Post-intervention (2 months after baseline, i.e., one month post-relocation)	[NS]		
ID 35	Wilson, 1987	79	Post intervention (after 8 weeks)	[+SIG] [+SIG]		?

### **Additional text to Table 8 on physical health**




Ten studies analysed the impact on physical health and five (50%) achieved significantly positive results, across objective and self-reported outcomes.

According to our logic model, outcomes comprised intermediate health outcomes (pathophysiological parameters and behaviour change) and long-term outcomes (morbidity, symptomatology, medication, disability and function). Successful impacts were reported in physical activity, glycosylated haemoglobin, weight and percentage of body fat as intermediate outcomes and in patient-reported long-term measures (pain, functional living with cancer, impact of chemotherapy, self-reported strength and physical ability) and objective outcomes (aerobic fitness and walking speed). Three trials with positive results had a low risk of bias; the rest were judged as unclear or high.



**Table 9: Reported effects on the category cognition**

\*Self-reported outcomes are in *italics* and objective in plain text.

OUTCOME					
AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	Measures of cognition*	Reported effect	Summary risk of bias
ID 6 Dodge, 2014	T1: 83 T2: 83	T1: post-intervention (after 6 weeks) T2: after 12 weeks follow-up	<p>Comprehensive neuropsychological test battery - cognitive test scores: attention, executive function verbal fluency and memory</p> <p>- Immediate Memory: the Consortium to Establish a Registry for Alzheimer's Disease (CERAD) Word List Learning</p> <p>- Delayed Memory: CERAD Word List Delayed Recall</p> <p>- Language: composite of verbal fluency for letters (F, A and S)</p> <p>- Psychomotor Speed: Trail Making A</p> <p>- Executive function: - Trail Making B - verbal fluency for category animals</p> <p>- Selective Attention/inhibition: Stroop test and Pre-morbid and general intelligence: Wide Range Achievement Test-Revised (WRAT-R)</p> <p>- Computerized cognitive test batteries; two domains from the CogState: - Psychomotor speed: Detection Test (DET) - Working memory: One Back (ONB) and Two Back (TWOB), and the full battery of the Computer Assessment of Mild Cognitive Impairment (CAMCI).</p>	<p>[NS]</p> <p>[NS]</p> <p>[NS] T1 [+SIG] T2 among cognitively intact</p> <p>[NS]</p> <p>[+SIG] T1 among cognitive intact [NS] T2</p> <p>[NS]</p> <p>[+SIG] T1, among MCI [NS]</p>	?

OUTCOME					
AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	Measures of cognition*	Reported effect	Summary risk of bias
ID 7 Fried, 2004 (Carlson, 2008)	128	Follow-up at 4–8 months	<p><i>Cognitive activity: standardized, self-administered Questionnaire including number of books and variety of materials read per month; number of high, moderate and low cognitive intensity activities engaged in outside the program over the prior month; the number of hours spent watching television per day and frequency of engagement in each role in the schools</i></p> <p>Executive function (EF)</p> <ul style="list-style-type: none"> <li>- TMT (Trail Making Test)</li> <li>- the Rey-Osterrieth Complex Figure Test CFT</li> </ul> <p>Memory:</p> <ul style="list-style-type: none"> <li>- verbal and visuospatial memory</li> <li>- psychomotor speed.</li> <li>- delayed recall of the CFT following a 15-min filled interval</li> <li>- Verbal learning and memory (list of 20 common words from the Iowa Established Populations for Epidemiologic Studies of the Elderly Project (Word list memory))</li> </ul>	<p><b>[+SIG]</b></p> <p>Subgroup of less impaired in EF at the baseline benefit</p> <p><b>[+SIG]</b></p> <p><b>[NS]</b></p> <p><b>[NS]</b></p> <p><b>[NS]</b></p> <p><b>[+SIG]</b></p> <p>Subgroup of less impaired in EF at the baseline benefit</p>	
ID 11 Gruenewald, 2015 (Carlson, 2015, Brain Health Study -BHS-)	532 111 (BHS)	T1: 12 months after baseline T2: 24 months after baseline	<p><i>Intellectual activity based on Lifestyle Activity Questionnaire (LAQ) (seven items: frequency of discussing local/national issues, reading a book, reading a newspaper, balancing a checkbook, using a computer, crossword puzzles, taking courses/classes)</i></p> <p>BHS: Magnetic resonance imaging (MRI) scans to measure cortical and hippocampal volumes</p>	<p><b>[+SIG]</b> T1 <b>[NS]</b> T2</p> <p><b>[NS]</b> T1 and T2 <b>[+SIG]</b> T2 Subgroup of men</p> <p><b>[+SIG]</b> IG1</p>	
ID 12 Haslam, 2010	73	Post intervention (after 6 weeks)	<p>Memory performance- Cognitive Ability Measure- Addenbrooke's Cognitive Examination—Revised (ACE-R). - subtest scores from each of five domains: - Attention/orientation</p>	<p><b>[+SIG]</b> IG1</p>	

OUTCOME					
AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	Mesures of cognition*	Reported effect	Summary risk of bias
			<ul style="list-style-type: none"> <li>- Memory</li> <li>- Verbal fluency</li> <li>- Language</li> <li>- Visuospatial ability</li> </ul>		
ID 18 Laakkonen, 2014	136 dyads (i.e., 136 caregivers +136 careerecipients with dementia)	T1: Post-intervention (after 3 months)	Clinical Dementia Rating (CDR) Scale	[NS] T2	
		T2: After 6 months follow-up	Clock Drawing Test (CDT)	[NS] T1 [+SIG] T2	
			Verbal Fluency (VF)	[NS] T1 [+SIG] T2	
ID 24 Mortimer, 2012	60	Post-intervention (after 40 weeks)	Changes in brain volumes (MRI parameters) Whole brain volume (% of total intracranial volume. MRIs were acquired with a 1.5T GE scanner. White and gray matter volumes were summed and divided by total intracranial volume to obtain normalized whole brain volume	[+SIG] IG1 [+SIG] Tai Chi control group	
			Neuropsychological battery: - WAIS-R Digit Span	[NS]	
			- Bell Cancellation Test	[NS]	
			- Rey-Osterrieth Complex Figure (copying and recall)	[NS]	
			- Stroop Test	[NS]	
			- Chinese Auditory Verbal Learning Test	[+SIG] IG1 [+SIG] Tai Chi control group	
			- Category Verbal Fluency Test	[+SIG] IG1 [+SIG] Tai Chi control group	
			- WAIS-R Similarities Test	[NS]	
			- Trail-Making Test A and B	[+SIG] IG1 [+SIG] Tai Chi control group	
			- Clock-Drawing Test	[NS]	
			- Boston Naming Test	[NS]	

AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing of outcome assessment	OUTCOME			Summary risk of bias
			Measures of cognition*	Reported effect		
ID 30 Quayhagen, 2000	103 caregivers and 103 patients	Post-intervention (after 3 months)	<ul style="list-style-type: none"> <li>- Mattis Dementia Rating Scale</li> </ul>	<ul style="list-style-type: none"> <li><b>[+SIG]</b> Tai Chi control group</li> </ul>		
			<ul style="list-style-type: none"> <li>Neuropsychologic measures on patients:               <ul style="list-style-type: none"> <li>- Immediate memory score: composite score combining 25-point Logical Memory I and Visual Reproduction I subscales of the Wechsler Memory Scale-Revised (WMS-R) and the 25-point memory factor from the Dementia Rating Scale</li> <li>- Delayed memory score: WMS-R subscales of Logical Memory II and Visual Reproduction II verbal fluency</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>[+SIG]</b> Cognitive stimulation control group</li> </ul>		
ID 31 Reinke, 1981	39	Post intervention (after 8 weeks)	<ul style="list-style-type: none"> <li>Cognitive functioning:               <ul style="list-style-type: none"> <li>- Vocabulary subtest from the WAIS (verbal intelligence)</li> <li>- Raven's Colored Progressive Matrices test (reasoning task)</li> <li>- strategic-semantic memory test (read and recall immediately)</li> <li>- the Twenty-Questions problem-solving test</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>[NS]</b></li> <li><b>[+SIG]</b> IG2</li> <li><b>[NS]</b></li> <li><b>[NS]</b></li> </ul>		

### **Additional text to Table 9 on cognition**

Eight studies analysed the impact on cognition and seven (87.5%) achieved at least one significantly positive result on a cognitive outcome.

Overall, trials applied neuropsychological batteries and assessed objective effects on brain volume, measured through MRI parameters, and on the amount of self-reported cognitive activity. [57] Positive effects were observed for all types of cognitive measures including neuropsychological parameters (overall memory performance, verbal fluency, psychomotor speed, executive function, verbal learning and reasoning) and self-reported cognitive activity[58] but inconsistently across studies. Regarding MRI parameters, one study found a significant increase in brain volume in the social intervention group, but also in the tai chi

intervention group without any social component;[57] whereas a second study found cortical and hippocampal volume changes but only in the subgroup of men.[59] Remarkably, two studies assessing cognition were conducted in a nursing home setting and both achieved favourable results. Three trials with positive results on neuropsychological parameters had a low risk of bias; the rest were judged as unclear or high.



**Table 10: Reported effects on the category health services use**

AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	Timing	OUTCOME			Summary risk of bias
			Measures of health services use	Reported effects		
ID 3 Carroll, 2007	201	T1: post-intervention (after 3 months) T2: after 9 months follow-up	Cardiovascular rehospitalization	[INS] T1 and T2	-	
			Participation in cardiac rehabilitation programs	[F-SIG] T1 and T2		
ID 9 Gallagher, 1997	245	T1: Post intervention (after 1 year) T2: After 2 years follow-up	Number of health care contacts according to medical records); physician (primary or urgent care);	[INS] T2	-	
			Phone contact;	[INS] T2		
			Nurse, nurse practitioner or physician's assistant;	[INS] T2		
			Hospital visit;	[INS] T2		
			Days in hospital	[F-SIG] T2		
			Emergency room;	[INS] T2		
			Home visits;	[F-SIG] T2		
			Total contacts	[INS] T2		
ID 10 Gleibs, 2011	42	Post-intervention (after 3 months)	Number of General Practitioner calls	[F-SIG] IG1 and IG2	-	
ID 13 Heisler, 2013	199	T1: post-intervention (after 6 months) T2: after 6 months follow-up	Time to death or first re-hospitalization regardless of cause (composite all-cause outcome)	[INS] T2	?	
			Number of hospitalizations for those surviving 365 days	[INS] T2		
ID 29 Rutasalo, 2008	235	After 1.5 years follow-up	All visits to the doctor's office and days spent in various hospitals	[F-SIG]	+	

**Additional text to Table 10 on use of health services**

Five studies analysed the impact on the use of health services and four (80%) achieved significantly positive results in at least one outcome. One of them was judged to be low risk of bias; the rest were judged as unclear or high risk of bias. Methodologically, a high variety of indicators was used including interviewer-administered questionnaires and data from medical records; standardized questionnaires were seldom used and some outcomes were in composite scores together with mortality.

Interestingly, one study focused on improving health care access and effectively increased participation in cardiac rehabilitation services.[60] The remaining studies aimed at lowering the use of health services. Furthermore, studies assessed the impact on visits with a wide range of health professionals and on the use of a diversity of health services. Two further studies assessed use but reported only the effects on costs.<sup>59 60</sup>

**Table 11: Reported effects on nursing home placement**

AUTHOR(S)/ YEAR	STUDY DESIGN n (analysed)	OUTCOME				Summary risk of bias
		Timing	Measures of nursing home placement	Reported effects		
ID 4 Charlesworth, 2008	189	After 18 months follow-up	Institutionalisation and death of the person with dementia	[NS]		
ID 16 Jollig, 2012	192	After 4 months follow-up	Time until institutionalization of the patients with dementia	[NS]		
ID 23 Mittelman, 1993 (Mittelman 2006)	406	9.5 years follow-up	Nursing home placement	[+SIG]		

**Additional text to Table 11 on nursing home placement**

Nursing home placement was an insufficiently reported outcome and assessed with an objective measure. Three studies analysed the impact on nursing home placement and one (33.3%) achieved significantly positive results. This single trial had a big sample size, showed positive long-term effects and was judged as low risk of bias.[63] All trials that assessed nursing home placement targeted caregivers of dementia patients to delay the institutionalization of the care recipient.

### 9.2.2. Annexes of article 3

#### **ANNEXES OF ARTICLE 3:**

##### **PROMOTING SOCIAL CAPITAL TO ALLEVIATE LONELINESS AND IMPROVE HEALTH AMONG OLDER PEOPLE IN SPAIN.**

- Intervention guide of the Programme “Camins: de la solitud a la participació” (“Pathways: from loneliness to participation”)
- Video of the programme “Camins: de la solitud a la participació” (“Pathways: from loneliness to participation”):

# Caminos: de la soledad a la Participación



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## Indice

Presentación de la guía	pág. 4
Marco conceptual	pág. 5
Objetivos de la intervención grupal	pág. 6
Procedimientos generales	pág. 7
Conducción del grupo	pág. 8
Observación de la intervención grupal	pág. 8
Procedimientos específicos	pág. 9
Estructura de la intervención: 15 sesiones en 3 fases	pág. 9
Las sesiones una a una: temas, objetivos y actividades	pág. 10
Sesiones 1-3: fase de inicio, conocimiento y formación del grupo	pág. 11
Sesión 1: Las soledades	pág. 12
Sesión 2: La participación	pág. 15
Sesión 3: El mapa de recursos y las personas voluntarias	pág. 18
Sesiones 4-13: fase de descubrimiento de las posibilidades locales de participación en actividades	pág. 20
Sesión 4: Primera salida	pág. 21
Sesión 5: Reflexión	pág. 23
Sesión 6: Segunda salida	pág. 26
Sesión 7: Reflexión	pág. 26
Sesión 8: Tercera salida	pág. 26
Sesión 9: Reflexión	pág. 26
Sesión 10: Cuarta salida	pág. 26
Sesión 11: Reflexión	pág. 26
Sesión 12: Quinta salida	pág. 26
Sesión 13: Reflexión	pág. 26
Sesiones 14-15 (n. 2): fase de cierre, evaluación y decisión del futuro del grupo	pág. 27
Sesión 14: Los caminos recorridos y los caminos por recorrer	pág. 28
Sesión 15: Evaluación y despedida del grupo	pág. 30
Bibliografía	pág. 31

## Presentación de la guía

La guía de la intervención grupal del proyecto “*Caminos de la soledad a la participación*” se ha diseñado con la finalidad de difundir la intervención novedosa que hemos llevado a cabo con éxito en 3 centros, el EAP (Equipo de Atención Primaria de Salud) de Sant Martí de Provençals, el EAP Sardenya y en Serveis Socials de Cardedeu en colaboración con el EAP de Cardedeu. Además, la guía tiene como propósito animar a otros centros, especialmente a otros centros de salud y de Servicios Sociales, a iniciar esta intervención implicando a los recursos de participación de su entorno. Así, queremos que esta guía sirva como una herramienta a los profesionales del ámbito social y sanitario para que puedan promover la participación social como una forma de aliviar la soledad de las personas mayores.

Esta guía, por su limitación en extensión, no pretende dar exhaustivamente toda la información de cómo llevar a cabo la intervención. Pero sí que presenta sus elementos identificados como clave.

El diseño, implementación y revisión de la guía se han efectuado en el marco de un proyecto de intervención social que recibió el apoyo de la Obra Social CatalunyaCaixa mediante la convocatoria de Impuls Social del 2011.



## Marco conceptual

En la actualidad, la soledad es una condición muy frecuente entre los pacientes mayores atendidos en los centros de atención primaria (CAP), sin embargo, los profesionales no siempre disponen de recursos suficientes para abordarla. Afrontar la soledad desde estos centros podría permitir aliviar el malestar y las repercusiones en el estado de salud entre las personas mayores, así como limitar algunas de las consecuencias que tiene en los recursos sanitarios, como por ejemplo, la hiperfrecuentación en atención primaria. La soledad es una condición subjetiva que conlleva malestar. Situaciones como la viudedad y vivir solo se asocian frecuentemente a la soledad de las personas mayores. La literatura científica actual muestra una relación entre la soledad y el empeoramiento de la salud física y mental (Hawkley, 2010). Asimismo, se ha demostrado que la participación social, el apoyo social y las relaciones con personas de la misma edad tienen un efecto protector en la salud (Litwin, 2000; Sundquist, 2004; Unger, 1997; Everard, 2000). Diversos estudios indican también que las situaciones de soledad repercuten a su vez en el uso de recursos sociales y sanitarios como son las visitas frecuentes a los servicios de urgencias hospitalarias y a los centros de atención primaria (Geller, 1999; Ellaway, 1999).

Una revisión sistemática sobre intervenciones para promover la salud previniendo el aislamiento social y la soledad muestra como efectivas sobretudo las intervenciones grupales basadas en actividades formativas y sociales (Cattan, 2005). Un ensayo clínico en Finlandia basado en una intervención psicosocial en personas mayores que se sienten solas llevando a cabo actividades grupales autoorganizadas ha mostrado eficacia aumentando la salud autopercebida, reduciendo el uso de servicios de salud y los costes sanitarios, así como reduciendo la mortalidad del grupo intervención al compararlo con el grupo control. A su vez, mostraba mejoras en el bienestar psicológico y en el sentimiento de utilidad (Pitkala, 2009; Routasalo, 2009).

Por estos motivos, se diseñó una intervención grupal para abordar la soledad y promover la participación social de las personas mayores desde los centros de atención primaria. Se trata de una intervención que llevan a la práctica profesionales de trabajo social y de enfermería en los centros de salud y en servicios sociales básicos. En esta guía pretendemos presentar el diseño detallado de la guía de la intervención.

## Objetivos de la intervención grupal

La intervención grupal está dirigida a promover el conocimiento mutuo de las personas mayores, el apoyo entre ellas, la integración y la participación social como caminos para aliviar la soledad. Asimismo, la idea fundamental es conectar el Centro de Atención Primaria de Salud o de Servicios Sociales con las entidades del territorio y generar su implicación en un trabajo en red.

La intervención grupal tiene como **objetivos principales**:

- *Aliviar la soledad.*
- *Promover la participación social como estilo de vida saludable, dando a conocer recursos del entorno de una manera amigable (próxima).*

Los **objetivos secundarios** son:

- *Mejorar el estado de salud percibido.*
- *Facilitar que los participantes se conozcan, favoreciendo el conocimiento mutuo.*
- *Facilitar que aprendan y se ayuden unos de otros, favoreciendo el apoyo mutuo.*
- *Facilitar que perciban la universalidad de los problemas que tienen al conocer a otras personas en la misma situación.*

## Procedimientos generales<sup>1</sup>

La implementación consiste en el desarrollo de 15 sesiones grupales de 90 minutos cada una. 10 sesiones se efectúan en el Centro de Atención Primaria de Salud o en Servicios Sociales y son dinamizadas por profesionales del centro. Las 5 sesiones restantes son salidas que están facilitadas por las personas voluntarias.

El grupo funciona como grupo de apoyo y como tal, es un espacio en el que se proporciona información y soporte emocional entre sus miembros. Se recomienda que esté formado por unas 12-15 personas inicialmente.

El perfil de las personas que participen en el grupo está determinado en primer lugar por su carácter de usuarias del servicio de atención primaria en el que se efectúe la intervención, y que manifiestan una sensación de soledad, experimentada como malestar. A su vez, se priorizará a las personas que no tengan una vinculación continua en equipamientos socioculturales o en actividades de participación social. Por último, se recomienda tener en cuenta que ésta intervención está diseñada y aplicada con personas sin deterioro cognitivo.

Las sesiones grupales son dinamizadas de manera participativa, generando las condiciones para que las personas expresen sus opiniones, preferencias y sentimientos.

A continuación apuntamos **indicaciones para fomentar la responsabilidad personal de los/las participantes**:

- *Respetar el proceso de participación de cada persona, sin hacer juicios de valor delante del grupo.*
- *Proporcionar ayuda con los medios que tienen los participantes del grupo, evitando los mensajes de “consejo”, al contrario, cada persona se tiene que responsabilizar de su propio proceso de cambio.*
- *Fomentar que las personas participantes compartan su historia o circunstancia desde la experiencia actual. En el caso de que las personas hagan referencia a hechos vividos en el pasado, se procurará relacionarlos con la situación actual de soledad.*
- *Vincular las frases utilizadas con las personas que las han pronunciado, procurando la relación entre las personas que hablan, sus actos y sus emociones.*
- *En el diálogo, profundizar en las situaciones personales que rodean la soledad atendiendo a las expresiones que utilizan. El conductor propone evitar las posiciones estáticas “yo soy así”, “es mi destino” (profecía autocumplida), cambiando las expresiones de manera que posibiliten el cambio “yo estoy así”.*

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1: El procedimiento sigue las pautas de CÁ Y WAINER (1994) y de MOYA, J. I COSTA, S. (2007).

## *Conducción del grupo*

El/la profesional que conduce el grupo es un facilitador del proceso de la intervención, para efectuar esta tarea requiere el soporte de la dirección del centro y de los demás profesionales con quienes comparte su trabajo.

El/la profesional que conduce el grupo, preferentemente será una persona titulada en enfermería o trabajo social, al tener mayor afinidad de práctica profesional cotidiana con los objetivos del grupo. No obstante, en cada centro se evaluarán los recursos humanos existentes, adaptándose a dichas posibilidades.

**Las personas profesionales que conducen el grupo necesitan tener conocimiento sobre:**

- las temáticas: envejecimiento, soledad y participación
- la conducción de grupos en el ámbito de la salud y/o de servicios sociales
- la observación de grupos para poder hacer el seguimiento
- el conocimiento de los recursos del entorno que ofrecen la participación en actividades.

## *Observación de la intervención grupal*

En los centros donde sea viable, se recomienda que la intervención grupal sea observada por un segundo/a profesional que tendrá principalmente la función de observador, aunque también podrá dar soporte al conductor del grupo e intervenir en la dinámica según sea necesario.

**El objetivo de la observación es poder hacer un seguimiento del proceso que permita introducir cambios para mejorar la dinámica.**

Se recomienda que la información se recoja en una ficha con algunas categorías predefinidas que faciliten las observaciones. La ficha debe ser clara y sencilla de rellenar.

## Procedimientos específicos

### Estructura de la intervención: 15 sesiones en 3 fases

**FASE 1: Sesiones 1-3 (n.3): fase de inicio, conocimiento y formación del grupo.**

**Objetivos:**

- Facilitar que se hable abiertamente de la soledad, expresando sentimientos, opiniones, inquietudes y dudas entorno a distintas maneras de vivir la soledad.
- Facilitar que se hable sobre las distintas formas de ver la participación. Sensibilizar sobre la importancia de participar.
- Detectar los intereses de los participantes.
- Presentar los recursos de participación del entorno y elegir los 5 que serán visitados.
- Promover el conocimiento mutuo entre los participantes del grupo y empezar a crear compromiso con el grupo y cohesión grupal.
- Reflexionar sobre la relación entre salud, soledad y participación.

**Actividades:**

- **Primera sesión:**

Profesional del Centro de Atención Primaria o Servicios Sociales: presentación del proyecto, objetivos del grupo y procedimientos de las sesiones.

Análisis y reflexión participativa sobre la soledad.

- **Segunda sesión:**

Análisis y reflexión participativa sobre la participación. Detección inicial de intereses de los participantes.

- **Tercera sesión:**

1. Presentación participativa del mapa de recursos de la zona (¿conocen estas entidades/actividades? ¿Conocen personas vinculadas en estos centros, entidades o actividades?).

2. Detección de intereses de los participantes en función de los recursos del entorno.

3. Decisión sobre qué 5 recursos del entorno visitar.

**FASE 2: Sesiones 4-13 (n. 10): fase de descubrimiento de las posibilidades locales de participación en actividades.**

**Objetivos:**

- Conocer recursos del entorno que ofrecen la participación en actividades y reflexionar sobre estos.

**Actividades:**

- Visitas acompañadas por las personas voluntarias a 5 recursos del entorno, alternadas con 5 sesiones de reflexión y valoración de las mismas.

**FASE 3: Sesiones 14-15 (n.2): fase de cierre, evaluación y decisión del futuro del grupo.**

**Objetivos:**

- Preparar el cierre del proceso, decidir el futuro del grupo y evaluar el proceso a nivel grupal e individual.

**Actividades:**

- Acabar el mapa vivido.
- Contestar la Encuesta de satisfacción de la intervención grupal a nivel individual.
- Hacer la valoración grupal verbal.

### *Las sesiones una a una: temas, objetivos y actividades*

A continuación se presenta cada sesión según el esquema siguiente:

1. Temas
2. Objetivos
3. Actividad (*roles, dinámica, recursos*)



*Sesiones 1-3:*

*fase de inicio, conocimiento y formación del grupo*

- ① **Temas:**
- Presentación de los/las participantes y del plan de la intervención.
  - Introducción al tema de la soledad. Narración de experiencias personales sobre la soledad.
  - Reconocimiento de formas de afrontamiento practicadas.
  - Construcción de definiciones grupales sobre los posibles tipos de soledad.

- ② **Objetivos:**
1. *Identificar diferentes situaciones vivenciales que rodean la soledad.*
  2. *Reconocer los caminos de salida conocidos.*
  3. *Promover el conocimiento mutuo entre los participantes del grupo y empezar a crear compromiso y cohesión grupal.*
  4. *Reflexionar sobre la relación entre la salud y la soledad.*

③ **La actividad: Las soledades**

Ⓐ **Roles:**

**Profesional del centro:** los/las profesionales se presentan como las personas referentes del grupo. Aclaran que durante el tiempo en que se realice la sesión tendrán funciones diferentes, en un caso la conductora del grupo y en el otro la observación de la sesión.

Las principales funciones del conductor/a serán las de facilitar la comunicación al interior del grupo; ayudar en la organización de las tareas que se planifiquen; fomentar la cooperación en la dinámica del grupo, el respeto y la escucha activa de los participantes.

Las principales funciones del observador/a será la de tomar nota de las cosas importantes que ocurran y la de ayudar activamente en el desarrollo del grupo en general.

Ⓑ **Dinámica:**

• **Parte 1: Acogida y presentación**

Título: conociéndonos...

**Profesionales del centro:** acogida, presentaciones y expectativas del grupo.

*Acogida:* Preparar el espacio para que resulte acogedor, por ejemplo: cuidando que la intensidad de la luz sea mediana, con una música suave de fondo, poniendo un ambientador con esencias y un mesita con galletas, agua/zumo (en adelante éste punto se sintetizará como ambientación del espacio).

- !! **Mientras se efectúa la acogida de las personas se pide a los/las participantes que traigan objetos, música, dibujos, etc., para decorar y contribuir a que el espacio sea acogedor y personalizado por el grupo.**

*Presentación inicial:* Las/los profesionales se presentan. Las personas del grupo se presentan. Se describe la intervención (temas, cantidad de sesiones, dinámicas de trabajo y compromisos necesarios).



Las expectativas iniciales del grupo: Se pregunta qué expectativas tienen los/las participantes a través de una pregunta, por ejemplo:

"¿Qué esperáis de este grupo?" o bien "¿Qué pensáis que os puede aportar este grupo?"

La observadora del grupo anotará las expectativas respecto al grupo que se manifiesten. La dinamizadora reconducirá expectativas que no se ajusten al grupo. Al finalizar la intervención se compararán las expectativas con los resultados.

- **Parte 2: Reflexiones sobre la soledad como malestar:**

Título: Uf!, a veces, la soledad pesa...

Se ponen diferentes fotos/postales sobre la mesa de la soledad vivida como malestar.

Los/las participantes explican sus opiniones sobre el tema. ¿Qué puede pasarle a la persona de la foto? ¿Cómo se siente? ¿Qué podría hacer?

- **Parte 3: Reflexiones sobre la soledad deseada y vivida positivamente.**

Título: Ah!, pero eso también es soledad...

Se ponen fotos/postales de situaciones de soledad positiva sobre la mesa y cada persona elige una para hablar: ¿Qué opinan? ¿Cómo lo ven? ¿Qué se imaginan?

- **Parte 4: Reflexiones sobre la soledad vivida**

Título: Esta es mi soledad...

Reconocimiento de los sentimientos personales de la soledad: ¿Cómo es la soledad que viven? ¿Qué sentimientos predominan? ¿Qué tipo de situaciones creen que fomentan estas sensaciones? ¿Es posible hacer algo al respecto?

Algunas preguntas facilitadoras: ¿se sienten solas o solos? ¿Cómo llegaron a este estado? ¿Intentaron algo para sentirse mejor? ¿Creen que es un estado temporal o permanente? ¿Piensan que la soledad puede tener consecuencias para la salud?

## Recurso 1

### Las fotos y las postales sobre las soledades

Se trabaja con fotografías y postales que muestran diferentes facetas de la soledad.



Licencia Atribución-No comercial-Obras no derivadas.  
<http://www.flickr.com/photos/guervos/1408673065/>



<http://espanol.istockphoto.com/stock-photo-8838689-senior-man-at-window.php>

- **Parte 5: Síntesis**

Recuperamos los pensamientos de ésta hora y proyectamos para el próximo encuentro. (15 minutos)

Título: Durante esta semana nos hemos comenzado a conocer...

*Destacamos las diferentes maneras de sentirse solo/a, las diferencias semánticas que rodean la soledad, las diferentes estrategias para afrontarla, el bienestar/malestar que produce.*

Título: La próxima semana continuaremos este conocimiento mutuo

- !! Se pregunta si alguien tiene inconveniente en que se reparta una hoja con los números de teléfono de todas/os los/las participantes, para facilitar que estén en contacto y puedan quedar para ir a las salidas.

.....

### La participación

- ① **Temas:**
- La participación como un recurso de afrontamiento de la soledad.
  - La participación como un recurso para el bienestar.
  - Los intereses y aficiones personales que pueden movilizar la participación en espacios de actividades del barrio o pueblo.
- ② **Objetivos:**
1. *Promover el conocimiento mutuo entre los participantes del grupo y la cohesión grupal.*
  2. *Reflexionar sobre la relación entre la salud, la participación y la soledad.*
  3. *Fomentar la realización de actividades vinculadas al placer como forma de vivir el tiempo libre.*
  4. *Identificar/descubrir los intereses y las aficiones personales que puedan realizarse fuera del hogar.*
  5. *Valorar las posibilidades de realización de las actividades de participación en el entorno de proximidad (el barrio).*

### ③ La actividad: La participación

#### a Roles:

**Conductor:** Facilitar que se hable abiertamente sobre las posibilidades de participación como un recurso para aliviar la soledad expresando sentimientos, opiniones, dudas e inquietudes.

#### b Dinámica

- **Parte 1: Acogida, nueva presentación y breve resumen de la sesión anterior.**

Acogida: *ambientación del espacio y recibimiento de los/las participantes.*

Nueva presentación

Título: "Así soy yo..."

Los participantes presentan los objetos, frases, música, etc. que han traído de casa y que los representan. Intercambian opiniones sobre los objetos. A las personas que no traen ningún objeto se les puede preguntar porque no han traído nada y que habrían querido traer.

Algunas de las presentaciones de los objetos pueden tener conexiones con los intereses y aficiones que se identificarán más adelante.

Breve resumen de la sesión anterior: *se recuerda brevemente los temas de la sesión anterior sobre los diferentes tipos de soledad, las vivencias que la rodean y la capacidad de acción de las personas en estas circunstancias.*

- **Parte 2: Reflexiones sobre la participación**

Título: ¿Qué quiere decir participar?

Se ponen diferentes fotos/postales sobre la mesa de escenas de participación (personas realizando actividades en grupo, solos, intergeneracionales, culturales, lúdicas...).

Los participantes explican sus opiniones sobre el tema.

## Recurso 2

### Las fotos y las postales sobre participación

Se trabaja con fotografías y postales que muestran diferentes facetas de la participación.



- **Parte 3: Reflexiones sobre la relación entre soledad, participación y salud**

Título: Las decisiones que pueden ayudar a sentirse bien...

Se distribuyen fotos/postales sobre la mesa de situaciones de participación que muestran bienestar y cada persona elige una para hablar: ¿Qué opinan? ¿Cómo lo ven? ¿Qué se imaginan?

- **Parte 4: Reflexiones sobre la relación entre soledad, participación y salud**

Título: Título: A mí me gusta hacer/ a mí me gustaría hacer/ siempre hubiera querido hacer...

### Reconocimiento de los intereses personales.

*Preguntas guía:*

*¿Cuándo aparecieron éstos intereses? ¿Pueden hacer aquello que les interesa?*

*¿Cómo? ¿Dónde?*

*¿Qué les gustaría hacer fuera del hogar?*

*¿Por qué son importantes estos intereses?*

### Los obstáculos para realizar actividades:

*Identificar los intereses y relacionarlos con las limitaciones adquiridas que padecen en la actualidad y que supone un obstáculo para la realización ("siempre me ha gustado leer pero desde hace mucho tiempo no puedo").*

*¿Estos intereses, se pueden reconducir de alguna manera? (por ejemplo: las personas que no pueden leer por sí misma pueden ir al banco del tiempo o a la biblioteca y encontrar lectores que puedan leerles los textos preferidos).*

*Prestar atención especial a las posibles situaciones ocultas, como podría ser la dificultad de reconocer y aceptar las limitaciones o el sentimiento de vergüenza de pedir ayuda para hacer cosas. Un aspecto de interés especial es detectar la influencia de las tareas de cuidado y como pueden obstaculizar la participación.*

### Los recursos como oportunidad:

*Es posible que algunos de los recursos de participación sean conocidos por parte de los/las participantes, pero no necesariamente hayan sido construidos como una oportunidad.*

#### • Parte 5: Síntesis

Título: Recuperamos los pensamientos de esta hora y proyectamos para la próxima sesión

*Destacamos las diferentes maneras de participar, la relación entre soledad, salud y participación, recordamos las cosas que nos gustaría hacer dentro y fuera de casa.*

Tareas para hacer en casa: *La próxima sesión traeremos un cuaderno para hacer un "diario de viaje", que será nuestro compañero íntimo en los caminos que haremos juntos. Cada persona puede traer o comprar su propia libreta para poder hacer suyo el "diario de viaje", o bien ofrecerlo desde la coordinación de la intervención.*

*Entre esta sesión y la siguiente se invita a comenzar el diario escribiendo palabras/frases cortas, dibujando, pintando o recortando y pegando para expresar los pensamientos y las emociones que han aflorado en estas dos sesiones.*

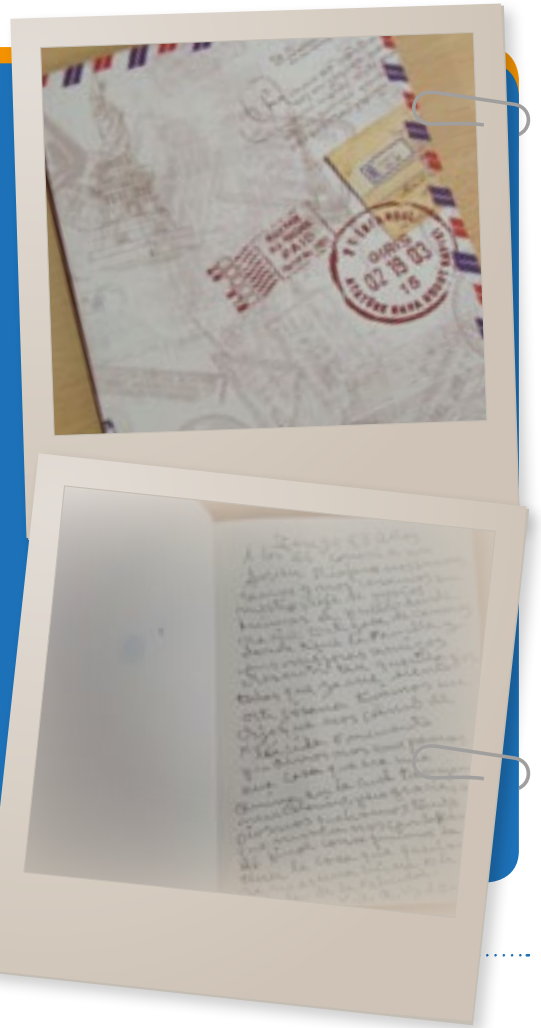
### Recurso 3

#### Diario de viaje

El diario será personal, para plasmar el camino de cada cual y tenerlo como recuerdo.

Puede hacerse de múltiples maneras (escribir, dibujar, recortar y pegar...) para dar espacio a personas con diferentes habilidades, preferencias y limitaciones, animando a utilizar formatos variados, especialmente a las personas que no sepan/puedan/quieran escribir.

Se trata de un procedimiento de trabajo individual para facilitar el autoconocimiento, el redescubrimiento de uno mismo, y así, fomentar un mejor manejo de la soledad. Es un diario personal a realizar en casa y del que se pueden compartir las partes que se deseen durante las sesiones grupales. También se pueden extraer partes para construir el mapa vivido (ver segunda fase). Es pues un espacio de trabajo personal, un recuerdo personal del camino hecho, y a la vez un entrenamiento de la soledad como espacio creativo y de integración para poder estar mejor con uno mismo.



### *El mapa de recursos y las personas voluntarias*

- ① **Temas:**
- La participación como un recurso de afrontamiento de la soledad.
  - Las posibilidades de participación que ofrece el entorno.
  - Los intereses del grupo para conocer recursos del barrio en el que se realicen actividades.
  - La programación de las salidas.

- ② **Objetivos:**
1. *Promover el conocimiento mutuo entre los participantes del grupo y la cohesión grupal.*
  2. *Fomentar la interacción con las personas voluntarias del proyecto.*
  3. *Conocer la oferta de recursos de participación del entorno.*
  4. *Identificar los espacios/actividades que se quieren conocer grupalmente.*
  5. *Organizar las próximas salidas.*

③ **La actividad: La oportunidad de participar en el barrio**

ⓐ **Roles:**

**Profesional del Centro:** Facilitar la presentación del mapa de recursos y la elección de espacios del barrio donde se hacen actividades para ir a visitarlos en función de los intereses de los/las participantes.

**Voluntarios/as:** Ofrecer acompañamiento y apoyo en la coordinación para realizar las salidas por el barrio. Presentar el mapa de recursos explicando las actividades que se ofertan y por qué les beneficiaría participar. Facilitar la decisión de elegir las actividades. Facilitar la organización de las salidas.

ⓑ **Dinámica**

- **Parte 1: Acogida, presentación de los voluntarios/as y breve resumen de la sesión anterior.**

Acogida: *Ambientación del espacio y recibimiento.*

Título: "¡Son guías de descubrimiento!"

Presentación de las personas voluntarias

*Los/las voluntarios y las personas del grupo se presentan.*

Breve resumen de la sesión anterior: *Se recuerda brevemente los temas de la sesión anterior sobre la participación y los intereses que se habían detectado.*

- **Parte 2: El mapa de recursos**

Título: Un mapa sobre los espacios de participación de nuestro entorno.

*Presentación del mapa de recursos. Explicación de la oferta existente por parte de las personas voluntarias con el apoyo de los/las profesionales. Se muestran fotos de los equipamientos, trípticos, etc.*

Las personas participantes explican sus intereses al respecto, cuáles son los espacios que conocen personalmente o a través de otras personas que asisten o habían asistido.

#### Recurso 4

##### El mapa de recursos

El mapa de recursos es un documento construido entre los profesionales del centro y las personas voluntarias; su finalidad es orientar sobre los equipamientos locales y las actividades socioculturales que ofrecen y que pueden resultar de interés para las personas mayores.

- **Parte 3: Decisión de los 5 equipamientos socioculturales que se visitarán.**

Título: Iremos a...

*A partir del mapa se deciden los 5 espacios que se visitarán.*

*¿Qué opinan? ¿Cómo lo ven? ¿Qué se imaginan?*

- **Parte 4: Organización de las salidas.**

Título: ¿Cómo, cuándo y con quien haremos las salidas?

*Las personas voluntarias guían la organización de las salidas.*

EL PRÓXIMO DÍA SALDREMOS A: .....

NOS ENCONTRAREMOS CON: .....

EN EL LUGAR: .....

SI NOS PASA ALGUNA COSA HEMOS DE AVISAR A: .....

*Recordamos que la sesión siguiente a la salida será en el Centro de Atención Primaria o Servicios Sociales, explicaremos la experiencia y prepararemos la siguiente salida.*

*Despedida de las personas voluntarias.*

- **Parte 5: Síntesis.**

Título: Recuperamos los pensamientos de la sesión y proyectamos para el próximo encuentro.

*Recordamos los lugares que se visitarán y por qué se han elegido. Conversamos sobre el diario de viaje, si quiere compartirse.*

Tareas para hacer en casa: *el diario de viaje, escribimos palabras /frases cortas, para expresar los pensamientos y las emociones que han emergido durante la sesión. Para hablar de la próxima salida, traeremos una imagen de la visita (foto), una publicidad/tríptico, capturaremos una imagen en la memoria, haremos un dibujo...*



*Sesiones 4-13:*

*fase de descubrimiento de las posibilidades locales de participación en actividades*



### Primera salida.

- 1 **Temas:**
- La participación como un recurso de afrontamiento de la soledad.
  - El conocimiento de espacios de participación del entorno próximo.
  - El descubrimiento de intereses e inquietudes personales.
  - La interrelación social entre los miembros del grupo y con las personas voluntarias.
- 2 **Objetivos:**
1. *Promover el conocimiento mutuo entre los participantes del grupo y la cohesión grupal*
  2. *Desarrollar una actitud favorable a la interrelación con otras personas y valorarla como un recurso de ocio.*
  3. *Incentivar una actitud de curiosidad de apertura a nuevos temas y actividades.*
  4. *Conocer la oferta de recursos de participación del entorno.*
  5. *Descubrir los intereses e inquietudes personales movilizados a partir de la salida realizada.*
  6. *Desarrollar una responsabilidad personal en relación al ocio y a la toma de decisión sobre el ocio futuro, sobre los obstáculos y los facilitadores, asociando objetivamente los recursos que se conocen con el tipo de actividades que se realizan, las exigencias y el tiempo que requieren.*
- 3 **La actividad:** *Primera salida para descubrir los espacios de participación del entorno.*

La primera salida sería conveniente que esté previamente preparada por motivos logísticos y se hace para visitar el principal espacio de participación de las personas mayores en el barrio.

#### a **Roles:**

**Voluntarios/as:** Guiar la salida para conocer las actividades del espacio de participación seleccionado por el grupo. Realizar la acogida en el espacio y facilitar el recorrido del grupo: presentar a la persona del equipamiento que recibe al grupo, acompañar la visita, aclarar las dudas sobre las actividades que se pueden efectuar. Facilitar la interacción entre las personas del grupo. Valorar la salida. Se recomienda que los voluntarios hagan una valoración de la salida por escrito para facilitar el seguimiento de la intervención por parte de los profesionales del centro.

**Profesionales:** Para acotar el tiempo de dedicación de y facilitar la autonomía del grupo, se recomienda que los profesionales no asistan a la salida aunque colaboren con los/las voluntarias en la organización. A su vez, se debe valorar la disponibilidad e interés de los profesionales en acompañar al grupo en las visitas, sobretodo en caso de no conocer personalmente los recursos.

#### b **Dinámica**

- **Parte 1: El encuentro y el inicio del primer camino.**

*Acogida:* *El grupo se encuentra en un punto común (encontrarse en el mismo centro donde se realizan las sesiones facilita que asistan) y empieza a recorrer el primer camino de la soledad a la participación.*

El camino: Se inicia el camino, andando, o en bus, escuchando las reacciones de las personas. Los/las voluntarios, acompañan el trayecto, amenizándolo, pero sin protagonizar la conversación.

- **Parte 2: El espacio de conocimiento.**

Título: El primer espacio.

La acogida en el equipamiento: Una/algunas personas del espacio de participación recibe al grupo y explica las actividades que se realizan.

Recorrido por el lugar: El grupo visita el espacio, pregunta, observa, recoge información (fotos, folletín, apuntes, etc.)

Involucrarse en el centro: Cada salida debería permitir que los participantes se involucren en el centro de alguna manera, según sea posible. Por ejemplo: observando o haciendo una actividad, participando en una conferencia o tertulia o haciendo una pausa en el caso de que haya un bar, una salita de café, un recibidor, un patio o galería, en donde se hará una pequeña parada para descansar y observar el entorno. La pausa facilitará la relación entre los/las participantes, y una participación subjetiva en el espacio (imaginación de qué harían allí, adecuación a sus intereses...).

Despedida: El grupo agradece la acogida y se despide.

- ❗ Los voluntarios animan a los participantes a traer su cámara de fotos y hacer fotos durante la salida. La fotos son reveladas para ser mostradas en la sesión siguiente de reflexión.



- 1 **Temas:**
- El conocimiento de espacios de participación del entorno cercano.
  - El descubrimiento de intereses e inquietudes personales.
  - La participación como un recurso de afrontamiento de la soledad.
  - La programación de las próximas salidas.
- 2 **Objetivos:**
1. *Promover el conocimiento mutuo entre los participantes del grupo y la cohesión grupal.*
  2. *Desarrollar una actitud favorable a la interrelación con otras personas y valorarla como un recurso de ocio.*
  3. *Incentivar una actitud de curiosidad y apertura sobre nuevos temas y actividades.*
  4. *Reflexionar sobre la oferta de recursos de participación del entorno.*
  5. *Descubrir los intereses e inquietudes personales movilizados a partir de la salida realizada.*
  6. *Desarrollar el sentido de responsabilidad personal en relación al ocio y a la toma de decisión sobre el ocio futuro, sobre los obstáculos y los facilitadores, asociando los espacios que se conocen con el tipo de actividades que se realizan, las exigencias y el tiempo de realización que éstas requieren, etc.*
- 3 **La actividad:** *Reflexionar sobre los espacios de participación del barrio y el autoconocimiento de los intereses y las motivaciones.*

a **Roles:**

**Profesional del Centro:** Facilitar que se dialogue sobre las impresiones de la salida efectuada, en relación a tres aspectos: la adaptación de la oferta a los intereses personales; el descubrimiento de los intereses personales y la valoración de la salida desde el punto de vista organizativo.

**Voluntarios/as:** Apoyar/coordinar la realización de las salidas por el barrio. Facilitar la decisión de elegir las actividades. Participar en la valoración de la salida realizada.

b **Dinámica**

- **Parte 1: Acogida y breve resumen de la sesión anterior.**

Acogida: Ambientación del espacio y recibimiento.

Breve resumen de la sesión anterior: Se recuerda brevemente los temas de la sesión anterior sobre la participación, los intereses que se habían detectado y se señala el primer espacio visitado sobre el que se hablará en la sesión.

- **Parte 2: Las experiencias de la primera salida.**

Título: Los primeros pasos en compañía descubriendo espacios de participación en el barrio.

Explicación y valoración de la primera salida: *¿Cómo ha sido la experiencia? ¿Qué nos gustó más? ¿Qué cambiaríamos del aspecto organizativo?*

• **Parte 3: Espacio de conocimiento.**

Título: *¿Qué hemos conocido?*

*¿Qué pensamos de las actividades que se realizan? ¿Tienen relación con nuestros intereses personales? ¿Por qué? ¿Son fáciles o difíciles de realizar? ¿Nos ha despertado intereses/motivaciones nuevas?*

*Hablamos de la salida a partir de los objetos: se muestran las fotos que se han realizado en la salida, folletines, ideas/imágenes mentales que hemos recogido...*

Hacemos el mapa vivido: *sobre una lámina expresamos nuestras percepciones, escribiendo frases, pegando las fotos de las salidas que más nos gusten, agregando objetos que hayan traído los participantes de su casa para decorar el mapa como puntillas de punto...*

**Recurso 5**

**El mapa vivido**

El mapa es un recurso plástico que plasma visualmente sobre papel las experiencias vividas por el grupo en las salidas donde se ha ido a conocer actividades del mapa de recursos. Este mapa contiene información de los 5 centros visitados, incluye fotos de las salidas, frases de los/las participantes sobre la soledad y la participación, extractos de sus cuadernos de viaje, dibujos, objetos de decoración que hayan traído de casa los participantes... El "mapa vivido" podrá ser colgado en el Centro una vez finalizada la intervención grupal y, además de explicar el camino hecho, puede ser útil para dar información sobre actividades y animar a la participación a otras personas mayores que se sientan solas.



• **Parte 4: Organización de la próxima salida.**

EL PRÓXIMO DÍA SALDREMOS A: .....

NOS ENCONTRAREMOS CON: .....

EN EL LUGAR: .....

SI NOS PASA ALGUNA COSA HEMOS DE AVISAR A: .....

Título: *¿Cómo, cuándo y con quien haremos las salidas?*

*Los/las voluntarias guían la organización de las salidas.*

*Recordamos que la sesión siguiente a la salida será en el Centro de Atención Primaria o de Servicios Sociales, explicaremos la experiencia y prepararemos la siguiente salida.*

*Despedida de las personas voluntarias.*

- **Parte 5: Síntesis.**

Título: Recuperamos los pensamientos de esta hora y proyectamos por el próximo encuentro.

*Recordamos los lugares que se visitarán y por qué se han seleccionado. Hablamos del diario de viaje.*

Tareas para hacer en casa: el "diario de viaje".

### **El mapa vivido**

#### **¿Qué es el mapa vivido?**

*Es un diario de viaje compartido por el grupo, donde se plasmarán las vivencias, imágenes, ideas del grupo mientras dura la intervención (incluye episodios de las salidas y de las sesiones).*

#### **¿Qué objetivos tiene el mapa?**

El mapa tiene un doble objetivo:

*El proceso en sí de integración de las vivencias de la salida por parte de los/las participantes del grupo*

*El resultado de poder mostrar a otras personas mayores la experiencia vivida de manera que les anime a participar y a conocer los lugares que allí se exponen. Para esta finalidad, el mapa ha de permitir conectar rápidamente con el espectador que lo mira.*

#### **¿Cuándo se hace?**

*Se hace durante las sesiones de reflexión. Comienza a hacerse en la sesión 5 y se acaba en la sesión 14.*

#### **¿Cómo se hace?**

*Se plasma sobre una cartulina grande (tamaño de cartel grande, a decidir)*

*El mapa tiene una decoración general que se puede ir haciendo desde el primer día que se comienza a trabajar.*

*El mapa se configura a partir de la selección de fotos, folletos, frases... recogidas durante las 5 salidas hechas: fotografías; escritos de los diarios de viaje; frases o palabras que se expresan durante la sesión grupal.*

*También se pueden plasmar algunos aspectos de las dos primeras sesiones. Por ejemplo, si quisieran algunas fotos con las que se trabajó durante éstas sesiones, frases utilizadas...*

*Los escritos elegidos se transcriben en cartulinas de colores.*

*Las personas mayores del grupo son quienes deciden el diseño del mapa y se les anima a que traigan materiales que tengan en sus casas para hacer mapa, por ejemplo cordeles, telas, etc.*

*En cada sesión de reflexión se seleccionan las frases de la salida y se transcriben en las cartulinas, se seleccionan las fotografías a enganchar, se avanza en la decoración general de la cartulina.*

*En estas sesiones se puede combinar la conversación informal con el trabajo del mapa vivido, sobre todo en caso de no poder implicar a todas las personas del grupo en las tareas a realizar.*

*En la última sesión en que se hace el mapa vivido (sesión 14), se cierra el mapa enganchando a la cartulina grande todos los elementos que se han ido preparando por separado.*

*Del mapa finalizado se pueden hacer copias en color para poder colgarlo en diferentes equipamientos si así lo desean (por ejemplo, Centro de Atención Primaria, Centros de Mayores, Servicios Sociales, vivienda con servicios...)*

*El último día del grupo (sesión 15) se reparten entre los/las participantes, como recuerdo, copias de las fotos de las salidas que quieran y una copia del mapa en color, si así lo desean.*

#### **Materiales:**

*Cartulina grande tamaño de cartel, cartulinas pequeñas para poner las frases, pegamento.*

*Animar a que traigan materiales que tengan en sus casas para hacer el mapa.*

**!! ¡Atención!** Es importante revelar las fotos de las salidas cada semana y traerlas al grupo.



- !! Las sesiones de la 6 a la 13 siguen la misma estructura que las sesiones 4 (Primera salida) y 5 (Reflexión). Por este motivo no serán específicamente detalladas.

*Sesión 6*

*Segunda salida.*

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*Sesión 7*

*Reflexión.*

---

*Sesión 8*

*Tercera salida.*

---

*Sesión 9*

*Reflexión.*

---

*Sesión 10*

*Cuarta salida.*

---

*Sesión 11*

*Reflexión.*

---

*Sesión 12*

*Quinta salida.*

---

*Sesión 13*

*Reflexión.*

---

- !! Esta sesión no va seguida de una salida. Al finalizar la valoración, se introducen los objetivos de las siguientes sesiones que constituyen la tercera y última fase de la intervención.







*Sesiones 14-15*

*fase de cierre, evaluación y decisión del futuro del grupo*

## Los caminos recorridos y los caminos por recorrer

- 1 **Temas:**
- Retrospectiva del camino realizado. Reconstrucción de los significados de la soledad.
  - Reconocimiento de oportunidades de afrontamiento.
  - Construcción de definiciones grupales sobre los posibles tipos de soledad existentes.
  - El grupo como mecanismo de participación.
  - Reflexión sobre la relación entre soledad, salud y participación, de acuerdo a la experiencia de éste tiempo.
  - Continuidad del grupo una vez finalizada la intervención.

- 2 **Objetivos:**
1. *Promover el conocimiento mutuo entre los participantes del grupo y la cohesión grupal.*
  2. *Reflexionar sobre la relación entre la salud, la soledad y la participación.*
  3. *Identificar los caminos conocidos y las nuevas posibilidades de afrontamiento de la soledad.*
  4. *Reconocer el grupo como un espacio de participación.*
  5. *Remarcar el valor de las relaciones personales en la construcción cotidiana del proyecto vital.*
  6. *Decidir sobre el futuro del grupo.*

3 **La actividad:**

a **Roles:**

**Profesionales de Centro:** Facilitar que se hable abiertamente sobre la experiencia de los/las participantes sobre la soledad, la participación y la salud durante la intervención. Facilitar que los/las participantes compartan sus intereses en dar continuidad al grupo y qué elementos identifican como necesarios.

b **Dinámica:**

• **Parte 1: Acogida y presentación**

Acogida: Preparar el espacio, creando un ambiente agradable.

• **Parte 2: Reflexiones sobre los diferentes tipos de soledad, la participación y la salud, desde las nuevas experiencias vividas.**

Título: El papel de las relaciones sociales en nuestro proyecto vital.

Diálogo.

• **Parte 3: Reflexiones sobre el grupo como un espacio de participación.**

Diálogo.

• **Parte 4: Final del camino.**

*Se termina el mapa vivido y se habla del diario personal por última vez.*



- **Parte 5: El futuro del grupo.**

Título: ¿y ahora qué haremos?

*Se dialoga sobre las posibilidades de continuidad. ¿Qué facilitaría los encuentros una vez finalizada la intervención? Tener un espacio físico donde reunirse, establecer una nueva rutina (día y hora), identificación de un líder que promueva los encuentros (entre los participantes, entre los voluntarios)...*

- **Parte 6: El mapa vivido.**

*En esta sesión se finaliza el mapa vivido y se decide donde se colgará (donde del Centro, en uno de los recursos de participación...).*

- **Parte 7: Síntesis .**

Título: Recuperemos los pensamientos de esta hora y proyectemos para el próximo encuentro.

*Destacamos las diferentes maneras de sentirse sol/a y los descubrimientos recientes al respecto. Describimos las diferentes estrategias para afrontar el bienestar/malestar que produce.*

Preparación de la última sesión: se anuncia que estará destinada a la valoración de la intervención.

Tareas para hacer en casa: reflexionar sobre los beneficios o desventajas de haber participado en el grupo, y sobre los aspectos que cambiarían.

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## Evaluación y despedida del grupo

**1 Temas:** • Valoración de la intervención. Evaluación del efecto de la participación sobre la soledad y la salud.

**2 Objetivos:** 1. *Evaluar los efectos de la intervención.*  
2. *Reflexionar sobre la relación entre la salud, la soledad y la participación.*  
3. *Cierre de la actividad.*

**3 La actividad:**

**a Roles:**

**Profesionales de Centro:** Evalúan la intervención en dos fases: mediante una encuesta de satisfacción y por una valoración cualitativa realizada en el marco de un grupo focal.

**b Dinámica:**

• **Parte 1: Acogida y presentación**

Acogida: Preparar el espacio, generando un ambiente agradable.

• **Parte 2: La encuesta de satisfacción individual.**

Título: Evaluamos individualmente que nos ha parecido este proyecto. La encuesta de satisfacción.

Completamos una encuesta.

• **Parte 3: La evaluación grupal.**

Título: Intercambiamos ideas sobre lo que ha pasado éstos meses (qué les ha gustado, qué no, qué beneficios han percibido, en qué les ha ayudado...).

Hacemos un grupo focal.

• **Parte 4: Síntesis.**

Título: Recuperamos los pensamientos de ésta hora y nos despedimos.

*Puede organizarse una pequeña ceremonia de despedida con las personas voluntarias.*

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Video of the programme “Camins: de la solitud a la participació” (“Patways: from loneliness to participation”):



<https://vimeo.com/48867942>

### 9.2.3. Annexes of article 5

## **ANNEXES OF ARTICLE 5:**

### **DEVELOPING EVIDENCE FOR FOOTBALL (SOCCER) REMINISCENCE INTERVENTIONS WITHIN LONG- TERM CARE: A CO-OPERATIVE APPROACH APPLIED IN SCOTLAND AND SPAIN**

- Appendix 1: Principles and Practice Guide for Developing Football-Focused Reminiscence with People with Dementia
- Topic guide of the semi-structured interview
- Table 1: Qualitative findings of the Spanish project
- Figure of the FEAFV-FSIE Spanish model
- Video: New of the programme football-based reminiscence on the news of Tv3 (national channel):

## Appendix 1 Principles and Practice Guide for Developing Football-Focused Reminiscence with People with Dementia.

*Reproduced and adapted content is from the Scientific Report (Tolson et al. 2011) with permission from the Arts and Humanities Research Council UK.*

<b>Principles and Practice Guide to Delivery of Football-Focused Reminiscence for People with Dementia</b>
<p>The aim of football reminiscence is to provide meaningful activity and social stimulation for people with dementia. Reminiscence can be delivered on an individual or group basis. A benefit of group-based football reminiscence is that it offers companionship, mutual support and a sense of belonging to football enthusiasts. The following guidance is aimed at groups or organizations considering establishing a football reminiscence program for people with dementia. As a starting point it should be recognized that enthusiasm must be coupled with the necessary structures and resources to implement the appropriate supporting policies and procedures referred to in this guide.</p>
<p><b>Model of Delivery: Facilitator</b></p> <p>Reminiscence facilitation may be undertaken by health and social care practitioners and/or volunteers with appropriate dementia care skills, training and supervision. The therapeutic intention of the session will determine the required mix of practitioners and volunteers, and balance between dementia expertise and understanding of football.</p> <p><i>The Alzheimer Scotland community delivery approach to football reminiscence, which has been informed through experience, research and knowledge exchange, is based on a volunteer-delivery model. Volunteers are matched on a one-to-one basis with a person with dementia, who is living in their own home or a care home. Alternatively volunteers can work with a Reminiscence Facilitator to deliver group-based sessions within a care home or a dementia-friendly community venue.</i></p> <p><i>The volunteer who is working with an individual will do so in an imaginative way to create something which is a unique expression of each individual's football-related memories. Volunteers may also accompany the person to visit places that are meaningful to them, such as football grounds and football museums.</i></p>
<p><b>The Reminiscence Venue (Community Group-Based Interventions)</b></p> <p>The community venue chosen for the group must possess the following attributes:</p> <ul style="list-style-type: none"> <li>• The aesthetics and physical design of the facility should be dementia friendly.</li> <li>• Football-related artefacts should be displayed to provide visual cues.</li> <li>• Football displays should be easily set up before use and taken down after use.</li> <li>• The facility should be large enough to accommodate between 6 and 12 people including wheelchair users, with appropriate furniture to engage in table-top activities.</li> <li>• The same venue should be available at the same time each week for the duration of the program (for example at least 12 weeks).</li> <li>• Transportation plans should be agreed and rehearsed to ensure that all participants arrive in time to attend to personal needs (e.g. toilet, rest) prior to the start of the reminiscence sessions.</li> </ul>
<p><b>Facilitator Induction and Training</b></p> <p>There should be an initial introductory session to explain to new facilitators and helpers the ethos, structure and purpose of the program and provide a basic understanding of the nature of dementia. Training should aim to develop:</p> <ul style="list-style-type: none"> <li>• An understanding of the purpose and benefit of reminiscence activity</li> </ul>

- An understanding of dementia
- Appreciation of person-centered approaches
- Understanding of the intervention approach and protocol
- Selection and effective use of archive materials
- Planning enjoyable activities appropriate to the person’s abilities and interests.

**Structured Reminiscence Intervention (Group-Based)**

The following principles are based on findings from previous work and are recommended as they appear to enable people with dementia to engage in football reminiscence:

1. Group membership should be consistent and comprise between 4 and 12 people with dementia.
2. The same facilitator and helpers should manage the sessions.
3. An evaluation plan and methods should be agreed and appropriate consents obtained.
4. Twelve-week programs with weekly sessions allow for evaluation of individual benefit.
5. Sessions should be structured with a predictable format of activities to open and close the session. The structure should be agreed in advanced, informed through evidence and experience-based knowledge.
6. Activities should be varied at a pace appropriate to the group and individual responses and might include songs, photograph and visual image elicited reminiscence, artefact tactile or sensory stimulation of memories such as through smells and sounds. Creative arts and personal memorabilia can also be used.

**Eligibility Criteria**

Careful consideration needs to be given to the different challenges that individuals will face as their condition progresses. Published studies have focused on reminiscence interventions with people with mild to moderate dementia. A few papers suggest benefits for people with advanced dementia but no studies have included individuals at the terminal end of life stage. For community-based interventions thought needs to be given to the complexity of delivering interventions safely to a mixed group at different stages of dementia (see below). It is advisable to develop clear admission criteria and to factor this into decision making about staff-to-participant ratios and to the planning of appropriate activities.

**Keeping people with dementia safe**

All potential volunteers must be subject to a disclosure check before they are matched with a person with dementia in the case of individual sessions, or before they are in charge of a group. A code of practice should be followed that includes confidentiality about the individual’s and family members’ circumstances and respect for the security of property and belongings. For volunteers who work within care-home environments the privacy and safety of other residents must also be highlighted. People with dementia are vulnerable adults and there should be a mechanism through which the volunteer might seek guidance should they have a particular concern for a person’s welfare.

**Monitoring and evaluation**

The benefit of football reminiscence will vary and may be difficult to quantify. Individual experience is central; feedback from the person with dementia and their caregiver is a key source of identifying the impact of participating in football reminiscence. The behavior and mood of the person with dementia are also important factors in understanding the impact; facial expression, engagement and body language are key factors.



## Evaluación cualitativa del Taller de reminiscencia basada en el fútbol (entrevista semi-estructurada)

### PREGUNTAS PARA LOS PARTICIPANTES

#### EVALUACIÓN DE LA NECESIDAD, DISEÑO, IMPLEMENTACIÓN

- Antes de este taller, ¿había participado en actividades o cursos parecidos? ¿Qué destacaría de este taller que ha hecho?
- ¿Qué le parece que se base en el fútbol?
- ¿Cree que es necesario hacer grupos como éste? ¿Es una oferta que necesita la gente mayor para ayudar a recordar cosas de su vida y del fútbol? (necesidad)
- ¿Cree que el grupo estaba bien pensado? ¿Cambiaría alguna cosa? (diseño)
- ¿Cómo han ido estas semanas? ¿Está satisfecho de haber participado en el grupo? ¿Qué le ha gustado más? ¿Se le ha hecho corto / largo? (implementación)

#### Respecto a los diferentes elementos del taller:

- Material: fotografías, videos, canciones
- Libro Historia de vida y el fútbol
- Actividades fuera del centro / salidas
- Presencia del voluntario

#### Preguntar por cada elemento:

- ¿Le ha gustado? ¿Cree que estaba bien escogido? ¿Lo continuaría usando?

#### EVALUACIÓN DEL IMPACTO (durante el grupo, entre sesiones y una vez acabado el grupo)

- ¿Ha notado algún beneficio por el hecho de haber participado en el grupo?
- ¿Le ha perjudicado o ido mal venir al grupo por algún motivo?

#### Salud (salud en general, salud percibida, salud mental –cognitiva y emocional):

- ¿Cree que ha tenido un impacto sobre su salud? ¿En cómo se encuentra? ¿En cómo se siente? ¿En su memoria?
- ¿Ha notado otros beneficios?

#### Relaciones sociales:

- ¿El taller le ha servido para conocer (mejor) a algunos de sus compañeros/as?
- ¿El taller ha cambiado algún aspecto de la relación con sus familiares / cuidadores?

## **CONTINUIDAD**

- Una vez acaben las sesiones del taller, ¿cómo cree que se podría continuar la intervención?

## **PREGUNTAS PARA LOS CUIDADORES PRINCIPALES / FAMILIARES**

### **EVALUACIÓN DE LA NECESIDAD, DISEÑO, IMPLEMENTACIÓN**

- Antes de este taller, ¿sabe si su familiar o persona cuidada había participado en actividades o cursos parecidos? ¿Qué destacaría de este taller que ha hecho?
- ¿Qué le parece que se base en el fútbol?
- ¿Cree que es necesario hacer grupos como éste? ¿Es una oferta que necesita la gente mayor con deterioro cognitivo / demencia para ayudarle a recordar cosas de su vida y del fútbol? (necesidad)
- ¿Cree que el grupo estaba bien pensado? ¿Cambiaría alguna cosa? (Diseño)
- ¿La persona ha hecho algún comentario o ha expresado su opinión sobre el curso?
- ¿Cómo han ido estas semanas? ¿Está satisfecho con que haya participado en el curso? (implementación)
- Durante el taller se ha trabajado con diferentes elementos: a) fotografías, vídeos, canciones; b) libro Historia de vida; c) Salida al museo del club; d) Presencia del voluntario ¿Cómo valora estos elementos?
- ¿Qué papel ha tenido en la intervención? ¿Se ha podido usted implicar en la misma? (ex: motivar a la participación, ayudar a buscar material para el libro “Historia de vida”...) (implementación)
- Como familiares / cuidadores, ¿qué papel cree que podría tener? (diseño)

### **EVALUACIÓN DEL IMPACTO (durante el grupo, entre sesiones y una vez acabado el grupo)**

- ¿Ha notado algún beneficio en su familiar por el hecho de haber participado en el grupo?
- ¿Le ha perjudicado o ido mal venir al grupo por algún motivo?

#### **Salud (salud en general, salud percibida, salud mental –cognitiva y emocional):**

- ¿Cree que ha tenido un impacto en su salud? ¿En cómo se encuentra? ¿En cómo se siente? ¿En su memoria?
- ¿Ha notado otros beneficios?

#### **Relaciones sociales:**

- El taller, ¿le ha servido para conocer (mejor) a algunos de sus compañeros?
- El taller ha cambiado algún aspecto de la relación que tiene con usted? ¿Cómo cuidador ha percibido algún beneficio o ha resultado perjudicado?

### **CONTINUIDAD**

- Una vez acabadas las sesiones del taller, ¿cómo cree que se podría dar continuidad a la intervención? ¿qué papel podrían tener los familiares o cuidadores?

## **PREGUNTAS PARA LOS PROFESIONALES, DINAMIZADORES Y OBSERVADORES**

### **EVALUACIÓN DE LA NECESIDAD, DISEÑO, IMPLEMENTACIÓN**

- Antes de este taller, ¿había dinamizado actividades o cursos similares? ¿Qué destacaría de este taller?
- ¿Qué le parece que se base en el fútbol?
- ¿Cree que es necesario hacer grupos como este? ¿Es una oferta necesaria para la gente mayor con deterioro cognitivo o demencia? (necesidad)
- ¿Cree que el grupo estaba bien pensado? ¿Cambiaría alguna cosa? (diseño)
- ¿Cómo han ido las sesiones? ¿Está satisfecho de cómo ha ido el grupo? ¿Qué le ha gustado más? (implementación)
- ¿Cómo ha funcionado la implicación de los cuidadores / familiares? ¿Se podría pedir más implicación?

#### **Respecto a los diferentes elementos del taller:**

- Material: fotografías, videos, canciones.
- Libro Historia de vida
- Salida al museo
- Presencia del voluntario

#### *Preguntar por cada elemento:*

- ¿Le ha gustado? ¿Cree que estaba bien escogido? ¿De qué ha servido (qué ha permitido)?  
¿Lo continuaría usando?

### **EVALUACIÓN DEL IMPACTO (durante el grupo, entre sesiones y una vez acabado el grupo)**

- ¿Ha notado (observado o que le hayan comentado) algún beneficio en los participantes del grupo?
  - ¿Les ha perjudicado o ido mal venir al grupo por algún motivo?
  - ¿Los cuidadores / familiares han detectado y os han comentado algún beneficio? ¿Y algún perjuicio?
- Salud (salud en general, salud percibida, salud mental –cognitiva y emocional):**
- ¿Cree que ha tenido un impacto en su salud? ¿En cómo se encuentran? ¿En cómo se sienten? ¿En su memoria?
  - ¿Ha observado otros beneficios?

#### **Relaciones sociales:**

- ¿El taller les ha servido para conocer (mejor) a los otros compañeros?
- El taller ha cambiado en algún aspecto la relación con sus familiares / cuidadores?

#### **CONTINUIDAD**

- Una vez acabadas las sesiones del taller, ¿cómo cree que se podría dar continuidad a la intervención? ¿Qué papel podría tener el hospital de día? ¿Qué papel podrían tener los familiares / cuidadores?

## **PREGUNTAS PARA EL VOLUNTARIO**

### **EVALUACIÓN DE LA NECESIDAD, DISEÑO, IMPLEMENTACIÓN**

- *Antes de este taller, ¿había participado en actividades o cursos parecidos? ¿Qué destacaría de haber participado en este taller?*
- *¿Qué os parece que se base en el fútbol?*
- *¿Cree que es necesario hacer grupos como este? ¿Es una oferta que necesita la gente mayor con deterioro cognitivo / demencia para ayudarles a recordar cosas de su vida y del fútbol? (necesidad)*
- *¿Cree que el grupo estaba bien pensado? ¿Cambiaría alguna cosa? (diseño)*
- *¿Qué le parece la participación de ex futbolistas como voluntarios? ¿Cómo se podría mejorar? ¿Antes, durante o después de la intervención? (diseño)*
- *¿Cómo ha ido la intervención? ¿Está satisfecho de la participación en el grupo? (implementación)*
- *Durante el taller se ha trabajado con diferentes elementos a) fotografías, vídeos, canciones; b) libro Historia de vida; c) Salida al campo ; d) Presencia del voluntario ¿Cómo valora estos elementos?*

- *¿Qué papel ha tenido en la intervención? ¿Se ha podido implicar en la intervención? (p. ej.: motivar a la participación) (implementación)*
- *Como voluntario ex futbolista, ¿qué papel cree que podría tener? ¿Y en la preparación de un nuevo taller? (diseño)*
- *¿Cree que se podría implicar a otros voluntarios no ex futbolistas? ¿Por ejemplo familiares de personas con demencia? ¿Tendrían un rol diferente al suyo?*

***EVALUACIÓN DEL IMPACTO (durante el grupo, entre sesiones y una vez acabado el grupo)***

- *¿Ha notado algún beneficio por el hecho de haber participado en el grupo?*
- *¿Le ha perjudicado o ido mal venir al grupo por algún motivo?*

***Salud (salud en general, salud percibida, salud mental –cognitiva y emocional):***

- *¿Cree que ha tenido un impacto en su salud? ¿En cómo se encuentra? ¿En su memoria?*
- *¿Ha notado otros beneficios?*

***Relaciones sociales:***

- *¿El taller le ha servido para conocer (mejor) a algunos de las personas participantes?*

***CONTINUIDAD***

- *Una vez acabadas las sesiones del taller, ¿cómo cree que se podría dar continuidad a la intervención? ¿Qué papel podrían tener los voluntarios?*

Table 1. Qualitative findings of the Spanish project

Dimensions	Verbatims
<p><b>Effects among participants:</b></p> <ul style="list-style-type: none"> <li>❖ Participants, staff, family members, and volunteers reported a <b>positive impact on mood</b>, and they expressed positive feelings of joy and psychological well-being.</li> </ul>	<p><i>“Anything involving doing things is very interesting. You change your mentality, you stop always thinking about the same thing, it takes you out of your routine. (...) It makes me more... I’m not as withdrawn, I’m more open.”</i></p> <p>Participant with dementia, woman, 86 years old, Barcelona</p> <p><i>“After one of those kinds of therapies, your mood improves and your relationships improve”.</i></p> <p>Professional carer, Barcelona</p> <p><i>“During the sessions, he’d open his eyes like a little boy, full of wonder”.</i></p> <p>Relative, wife, Bilbao</p> <p><i>“Beforehand he was more timid, and now he is much happier”.</i></p> <p>Relative, daughter, Bilbao</p> <p><i>“It feels really good to be free, and to do things outside the centre”.</i></p> <p>Participant with dementia, woman, 92 years old, Bilbao</p> <p><i>“On the outings, they’d go crazy, it was simply marvellous”.</i></p> <p>Relative, wife, Bilbao</p>
<ul style="list-style-type: none"> <li>❖ Staff and family members reported an increase in <b>self-esteem</b> of participants; they felt <b>valued and useful</b> sharing their knowledge and experience.</li> </ul>	<p><i>“At the beginning of the project he was embarrassed because he didn’t know what to say, he had a complex, he was always looking for an excuse to leave the workshop. After speaking to him and telling him that there were no exams, we looked at what was most important and we worked a bit differently with him. There was a change, and he lost his complex. From that</i></p>

<p>❖ Staff and family members observed and reported that participants increased their <b>communicative</b> (more talkative) and <b>cognitive abilities</b> (memory and attention) during the sessions.</p>	<p><i>point on he started to enjoy it".</i></p> <p><i>"I've learned to think well about what I want to explain before saying it; getting nervous doesn't help".</i></p> <p>Participant with dementia, man, 75 years old, Barcelona</p> <p><i>"I've remembered certain things from years back; things that I had forgotten and that I no longer worried about".</i></p> <p>Participant with dementia, man, 85 years old, Valencia</p> <p><i>"We've seen that football works like a magnet of memories".</i></p> <p>Director of the centre, Bilbao</p>
<p>❖ Decrease in social isolation through improvements in <b>socialization</b> was reported and observed by all involved agents, consisting of an increase in quantity and quality of social interactions between participants during and between sessions. Participants living in the same nursing home got to know each other through the program.</p>	<p><i>"For this man (...), who hadn't been coming to the day hospital for long, the workshop opened him up, it made him improve his relationships, helped him to socialise; just by turning up every day, talking about things with them every day, what they had done at the weekend, how they were, how they were feeling (...). Now, when he comes to do cognitive stimulation, he always goes to the table where his former companions are".</i></p> <p>Health professional, Barcelona</p> <p><i>"I've met a few great companions, people I get on well with, it has helped me to meet people".</i></p> <p>Participant with dementia, man, 84 years old, Bilbao</p>

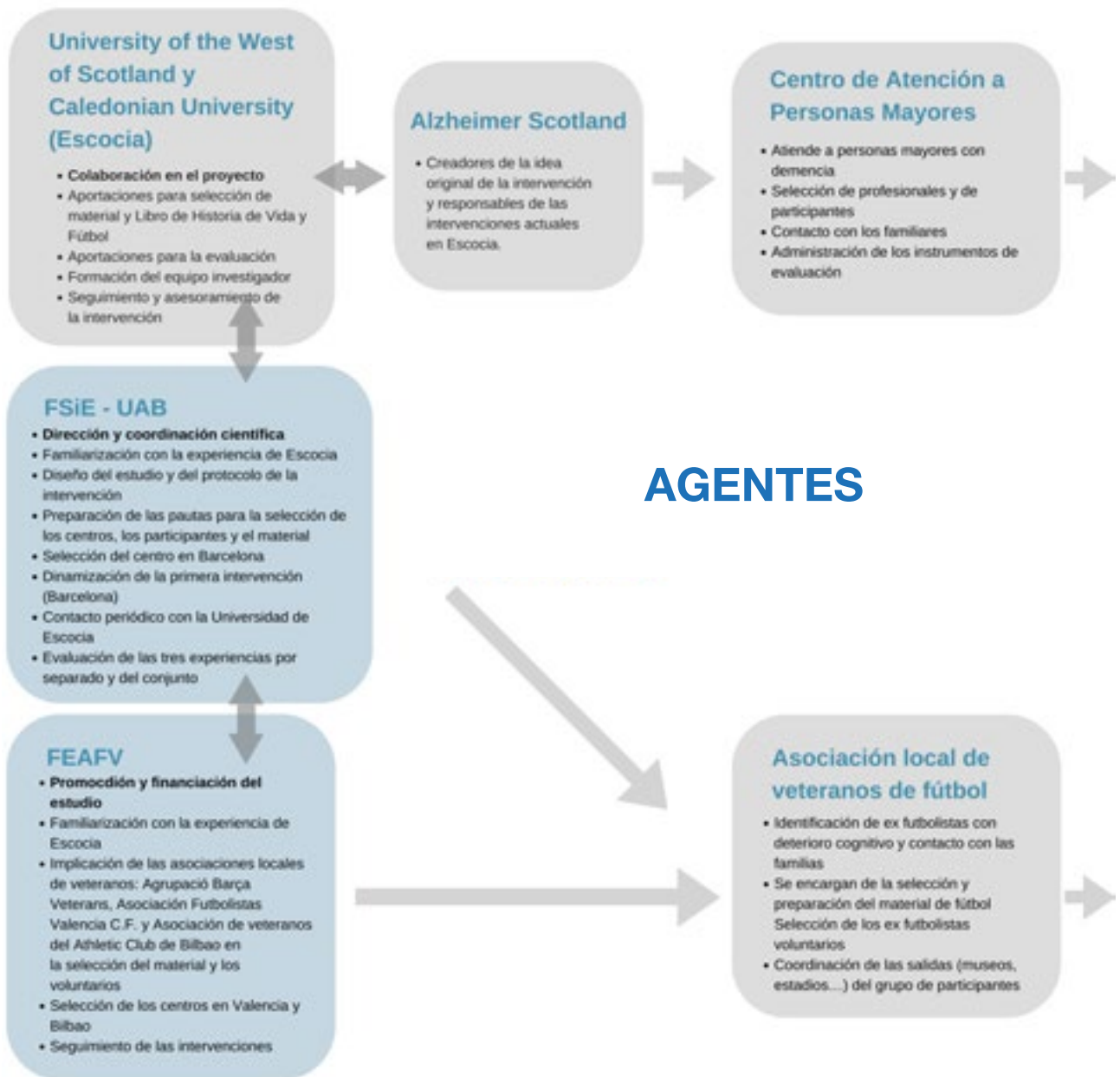
<p>❖ Positive <b>displays of anticipation</b> were observed by staff and family members, consisting of participants waiting for weekly sessions with enthusiasm.</p>	<p><i>"When I'd tell them that we were going to the group, their faces would change".</i></p> <p>Health professional, Barcelona</p> <p><i>"People who had no enthusiasm (...) Here life is monotonous for elderly people, (...) I haven't met anyone who says 'I wonder when we'll do crafts', but they cling onto this and they'd say to me 'I want to go, I want to do that activity'. It has brought meaning; that is very important in elderly people, to open up sources of motivation for them".</i></p> <p>Director of the centre, Bilbao</p>
<p>❖ Participants increasingly showed <b>engagement</b> in the group dynamics, developing a <b>strong sense of belonging</b>.</p>	<p><i>"They'd be waiting for you as if... they were excited to continue with these sessions"</i></p> <p>Volunteer (former football player) - coordinator, Bilbao</p> <p><i>"We had to say that it had finished so that they'd realise (...) In the end they felt like a small family".</i></p> <p>Volunteer (former football player) – coordinator, Bilbao</p>
<p><b>Effects among the rest of agents involved</b></p> <p>❖ <b>Former football</b> players with dementia additionally felt needed and useful and able to contribute and help others.</p>	<p><i>"He contributes a lot, because first of all he devotes himself; he was a football player, he has lived life, he is very open and very happy. We couldn't have given him a better present. It's a prototype that we need to keep in mind, because they contribute a lot, they bring affection towards everything that is football. The first day he began to talk about how he used to be called; his mother had 8 children...He's a prototype who for me is at a perfect stage, he has a mild deterioration, he can maintain any sort of conversation, he forgets things of course, but what he brings, he brings so emphatically that it is really important. For me those are the true volunteers".</i></p> <p>Volunteer (former football player) – coordinator, Bilbao</p> <p><i>"The deterioration that he has means he is great in the group, because he tells stories. What he tells the first day, he tells again the second day, and he tells it with the same passion, because he doesn't realise he's already told it...nor does he</i></p>



	<p>realise it is a bit tedious”.</p> <p>Volunteer (former football player) – coordinator, Bilbao</p> <p>“His daughter, every time she sees you, and he’s the same, she just says thank you, tells you what a great time he had... I think they see him as really happy”.</p> <p>Volunteer (former football player)– coordinator, Bilbao</p> <p>“We gave him an album with the photos, and he brought in others. For him it was, he said it himself: ‘it was really nice’. He saw himself in the photos and remembered the day they paid a tribute to him in Sabadell”.</p> <p>Volunteer (former football player) – coordinator, Bilbao</p>
<p>❖ <b>Family members</b> reported an improvement in the relationships with their relatives with dementia.</p>	<p>“It was another topic of conversation, she spent time on it, she was interested in how the team was doing...”</p> <p>Professional carer, Barcelona</p> <p>“At home he always has the book he made in the workshop”.</p> <p>Relative, son, Bilbao</p> <p>“Not only between those who took part, but it also brought families closer”.</p> <p>Relative, wife, Bilbao</p> <p>“He used to always be stuck to me, saying ‘wait for me, wait for me’, but when the workshop was on he’d say ‘see you later”.</p> <p>Relative, wife, Bilbao</p>
<p>❖ <b>Former players who were enrolled as volunteers</b> expressed satisfaction in being able to help with their knowledge and experience and were grateful to feel connected with other people and other</p>	<p>“They gradually begin to grow fond of you, and I’ve grown fond of them (...) You bring them happiness, they laugh, I joke with them (...) and mutual trust develops.”</p> <p>Volunteer (former football player), Valencia</p> <p>“It has been very rewarding on a personal level... to see people with serious cognitive problems, to such an extent that they might not know their own name,</p>

<p>realities.</p>	<p><i>and see that through football they manage to recover some of that; you give them a photo of "Zarra" and they recognise him".</i>  Volunteer (former football player) – coordinator, Bilbao</p> <p><i>"In emotional and affectionate terms, I think we have given them something, haven't we? That is what I most liked about the workshop".</i>  Volunteer (former football player)– coordinator, Bilbao</p> <p><i>"I have very little to add... but you see the evolution, and especially a relationship that develops between people, that is really important".</i>  Volunteer (former football player)– coordinator, Bilbao</p> <p><i>"You do it for their good, there's nothing else behind it...I don't mind not getting anything from the workshop; we put a lot of effort into it and I've seen 8 - 10 people delighted with life, and that's it, for me that's it".</i>  Volunteer (former football player) – coordinator, Bilbao</p>
<p>❖ <b>Professionals</b> involved felt that they had acquired a new intervention tool that allowed them to gain a deeper knowledge of the participants, working with their strengths and helping to implement a more person-centered care.</p>	<p><i>"Especially the life's story book. This tool also helped them to deepen their relationships with the participants, something that they can't do in their everyday life because of a lack of opportunities and time. They think that this knowledge will help them in their relationship with people from the group".</i>  Director of the centre, Bilbao</p> <p><i>"I have got to know a part of them that I didn't know beforehand...it has helped me a lot... in the end it also helps you, despite the 8 years of experience that I have. I more or less know how to manage them, but knowing that Maria worked in her father's mill, that she was with her family, that that's where her love for newspapers came from; knowing where each person's passion comes from, it helps you to get to know them.</i>  Psychologist, Bilbao</p>

Figure of the FEAFFV-FSIE Spanish model



(This figure continues in the following page)

## INTERVENCIÓN GRUPAL

### Participantes del centro

- Demencia leve o moderada
- Interés por el fútbol
- Usuarios del mismo centro de atención de personas mayores
- Aceptan participar con el apoyo de su familia

### Exfutbolistas como participantes

- Con deterioro cognitivo leve o moderado
- El participante mismo acepta participar con el apoyo de su familia

- Están vinculados al equipo local (donde se realiza el grupo)
- Aportan su conocimiento y su experiencia en fútbol (testimonios del fútbol vivido) durante las sesiones

### Exfutbolistas voluntarios

### Elementos clave

- **Material variado de fútbol** (fotografías, vídeos, objetos, himnos...)
- **Clima del grupo**
- **Libro de historia de vida y fútbol**
- **Dinámicas de reminiscencia**
- **Salidas:**
  - contacto con lugares del fútbol (museo, campo...)
  - contacto con objetos del fútbol
  - contacto con futbolistas y exfutbolistas
  - implicación de los familiares

### Profesionales

- Experiencia en dinamización grupal
- Formación y experiencia en el ámbito de las demencias
- Conocimiento de los participantes y del centro
- Respaldo de la dirección del centro

### Familiares

- Aportan material de la vida personal del participante para el libro de historia de vida y fútbol (fotos, anécdotas...)
- Participan en las salidas

La terapia de reminiscencia basada en el fútbol es una actividad significativa para los participantes.

## FACTORES MEDIADORES



## IMPACTOS PERCIBIDOS

### En los participantes:

- Socialización y pertinencia al grupo
- Estado de ánimo
- Memoria y atención

### En los exfutbolistas con demencia

- Beneficios como participantes
- Sentimiento de utilidad, de poder aportar

### En los familiares

- Mejora de la relación con los participantes

### En los voluntarios:

- Gratificación al poder ayudar desde sus conocimientos y experiencias, conexión con otras personas y realidades

### En los profesionales:

- Nuevas herramientas de intervención
- Conocimiento más personalizado de los participantes (atención centrada en la persona)

**New of the programme football-based reminiscence on the news of Tv3 (national channel):**



<http://www.ccma.cat/tv3/alacarta/programa/futbol-contra-lalzheimer/video/5537299/>

Editorial

# Promoting social capital in an ageing society: a win-win proposition?



## Promoviendo capital social en una sociedad que envejece: ¿una propuesta *win-win*?

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In health care and public health, benefits should have enough weight to make costs and adverse effects bearable. Whereas, a win-win proposition guarantees a favourable outcome for everyone involved. In this editorial, I argue whether promoting social capital in an ageing society could be a paradigmatic win-win proposition from a public health perspective, while considering the Spanish context. Therefore, I discuss the state of the art of social capital interventions targeting older people on health outcomes, adverse effects, costs, beneficiaries and practices.

### Ageing as opportunity

Ageing is commonly seen as a problem and a deficit perspective sustains ageism thus hiding older people's potential at a social, economic and political level. On the contrary, the Active Ageing paradigm states ageing to be a success, stresses the relevance of the social environment on resilience throughout life and pushes the policy response towards a healthy, inclusive and resilient ageing process in a supportive environment.<sup>1,2</sup>

Likewise, public health has increased its attention on ageing reinforcing a shift towards a strengths-based and salutogenic approach.

### Social capital as a health resource?

Several definitions of social capital exist. Putnam's definition<sup>3</sup>, the most common in health research, was adapted to ageing emphasizing the interaction between individuals at the micro level.<sup>4</sup> Thus, social capital was operationalized as an umbrella concept, comprising individual (family and friends) and collective social resources (neighbourhoods), as well as structural (social networks, social contacts and participation) and subjective aspects (social support and sense of belonging).

Growing evidence from observational studies suggests that social capital is associated with better mental and physical health, a lower risk for dementia, disability and mortality. These effects are comparable to well-established factors like tobacco cessation and physical activity.<sup>5,6</sup> However, little information exists from intervention studies on the modifiability of these social aspects and their health impact. Isolated studies have achieved significant effects on physical and emotional health, cognition, and use of health resources,<sup>7,8</sup> while others have not.<sup>9</sup> Even the evidence on social support groups for dementia caregivers is not yet clear.<sup>10</sup> Therefore,

the effectiveness of social capital interventions on health outcomes is limited but promising.

### The risk of adverse effects

Involvement in social networks also produces adverse effects. Responding to the needs of network members can be stressful, especially for women with low socioeconomic resources.<sup>11,12</sup> Highly unequal mutual support in dyadic relationships may trigger demoralization and depression, especially among women who give more support than they receive.<sup>11</sup> Moreover, getting social support from the extended family may produce a sense of indebtedness and obligation to conform and follow advice.<sup>13</sup> In older age friendships, the disruption of expectations about how friends should be (e.g., balanced relationship) causes strain.<sup>14</sup>

However, the harmful effects of social interventions are understudied and underestimated and specially here a gender perspective is needed.

From a global perspective, social capital interventions tackle one of the determinants of health inequalities and thus they could reduce them. However, selection bias may work against specific subgroups and potentially reinforce inequalities.

### Costs

Regarding cost-effectiveness, the most promising evidence comes from a Finnish trial aimed at alleviating loneliness by creating "circles of friends". Besides lowering mortality and improving other health outcomes, it significantly lowered health care costs during the 2-year follow-up.<sup>7</sup> In another trial based on peer support among widows, the experimental group slightly improved against slightly higher costs.<sup>15</sup> Therefore, the service would be acceptable depending on the willingness to pay per QALY gained. Further research should help to distinguish which specific subgroups could benefit the most considering the diversity of interventions and contexts.

### Who wins?

Interestingly, Linda Fried, author of the most used definition of frailty,<sup>16</sup> conducted the Experience Corps trial on promoting older people's volunteering in public schools applying a generativity perspective.<sup>17–19</sup> It aims to prevent disability by increasing cognitive, physical and social activity through meaningful roles. In this win-win intervention teachers also receive support, and children from socio-economically disadvantaged areas are reinforced in academic achievement and classroom behaviour, with a view to encouraging success throughout life.

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A similar intervention, specifically an intergenerational programme based on reminiscence, was conducted also in schools from a socio-economically deprived city but in Brazil.<sup>20</sup> Positive effects were found among adolescents and older adults but compliance was very low among the oldest group.

Caregivers are some of the main beneficiaries of peer support groups. Moreover, peer support programmes also target patients with chronic diseases to achieve better self-management and healthier lifestyles. Regarding mental health, people suffering from loneliness and depression benefit from increasing their participation in groups or from receiving one-to-one support.<sup>21</sup> Interventions based on social interaction have been successful at promoting cognition among people with and without mild cognitive impairment and at reducing agitation among nursing home residents with dementia with an effect size comparable to risperidone.<sup>22</sup>

In short, social capital interventions may benefit a wide range of older people, family members, carers and people from other generations. Indirectly, health and social care professionals would also benefit from them.

But who is missing? Selection bias is a big challenge to be considered: social capital interventions (e.g., group-based or involving information and communication technologies) do not appeal to everybody. Moreover, they require time availability, thus they may exclude people with caring responsibilities within the family, especially women. Likewise, older people, especially women and those who are frail and impaired, are often excluded from participation mechanisms.

### Social capital, ageing and health in practice

Context is highly relevant in social capital. Therefore, context-specific research and evaluation are required. In familistic countries like Spain, more social support is provided but loneliness is also more prevalent than in individualistic countries from Northern Europe. In the Spanish social and health care system, social capital practices are present, although mostly are not theoretically based, systematically applied, or rigorously evaluated. Support groups are widespread, especially those targeting caregivers to reduce their stressful experience. Some Spanish experiences on social support have been published, e.g., groups for older people,<sup>23</sup> a loneliness study based on primary health care<sup>24</sup> and one in a nursing home.<sup>25</sup> In Italy, another familistic context, a social support intervention provided by volunteers to older cancer patients receiving chemotherapy successfully increased their quality of life.<sup>26</sup>

As recommended by the Task Force on Community Preventive Services,<sup>27</sup> social support health behaviour interventions, especially peer support, are increasingly implemented to promote healthier lifestyles and better self-management of chronic illnesses. In our context, there is the Programa Pacient Expert Catalunya<sup>®</sup> and a published experience in social interaction and physical exercise targeting women referred by general practitioners.<sup>28</sup>

Social participation practices are mainly considered as leisure, cultural and political activities not linked to health. However, in recent years, social prescribing has gained attention as a referral scheme that links patients from primary health care with non-medical sources of support like mutual support, befriending and participation opportunities in the community (e.g., arts and creativity, volunteering...<sup>29</sup>). In Catalonia, it is promoted by the Health Department through the PINSAP and the Programme COMSalut and, in Asturias, by the Observatorio de Salud.

Currently, the on-going randomized clinical trial AEQUALIS<sup>30</sup> aims to reduce health inequalities through promoting social capital, health literacy and self-care in socio-economically deprived urban areas around Catalonia. Furthermore, the municipality of

Barcelona is implementing the programme “Escoles de Salut per a gent gran” focused on reducing social isolation in the elderly in the most deprived neighborhoods of the city and it is currently building VINCLES BCN, a service aimed at reducing loneliness by promoting social capital.

Finally, 39 Spanish cities have joined the WHO Global Network of Age-friendly Cities and Communities. This initiative guides the definition and implementation of action plans to engage governments and the overall society in creating inclusive and accessible urban environments, while considering the diversity of cultural and socio-economic contexts for a better ageing from a lifecycle perspective.

### What is next?

There is a lack of high quality research in social capital promotion, especially in familistic countries. Therefore, more research but also more evaluation of current practices, from global policy to local programmes, should be conducted to drive a shift towards multilevel interventions and intersectorial health policies.

Research should focus on the effectiveness of social capital interventions on positive and negative health outcomes, including the avoidance or lowering of medication (e.g., in cases of minor depressive symptoms) and their usefulness in changing behaviour.

Efforts should be put into understanding and improving processes. Regarding implementation, fidelity, adherence and tailoring to the personal, cultural and socio-economic context are major issues. Besides, intervention designs require logic models, which integrate theoretical background and assumptions made to achieve changes.<sup>31</sup> Social capital components are often combined with health education, physical activity, self-management skills, etc. Hence, there is a need to analyse mechanisms of impact and the influences of context.<sup>31</sup>

Flexible designs with individual and group-based components, and remote and face-to-face delivery modes might be better to meet specific needs and reduce selection bias. Moreover, health professionals need to become more aware and be provided with useful resources to act in their daily practice. In this vein, social prescription could become a promising mechanism. However, social prescription is a concept seldom found in the health literature. Therefore, research is needed to understand whether different models would work first on changing professionals' and patients' behaviours embedded in social prescription and, secondly, achieving health outcomes.

Finally, a debate about social capital promotion needs to be opened to understand shared responsibilities and define new roles, since they include but go beyond public health and health care.

### Concluding...

Apart from the costs and adverse effects, achieving the potential benefits of social capital faces a major challenge: understanding and managing the complexity of effectively improving existing networks and successfully creating new ones; especially given that the most ambitious goal of social capital-based intervention is to promote a more meaningful life, a more meaningful ageing.

Lastly, social capital research and practice is needed to finally build the third pillar of the biopsychosocial health model, which should reinforce the biological and psychological perspective fulfilling the complexity of health from ill health to salutogenesis.

### Authorship contributions

LCP has drafted the final manuscript, read and approved the final version.

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## Conflicts of interest

LCP declares no conflicts of interest.

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## Atención Primaria

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## CARTA AL EDITOR

## ¿Qué se está haciendo ya desde los equipos de atención primaria contra la soledad?

### What are primary health care teams doing about loneliness?

Sr. Editor:

Hemos leído con gran interés el artículo «Aislamiento social y soledad: ¿qué podemos hacer los equipos de atención primaria?»<sup>1</sup>. Ante todo, celebramos que se publique sobre la soledad desde atención primaria de nuestro país, y es que en España se sufre más soledad que en el Norte de Europa, precisamente por la gran importancia que han tenido tradicionalmente las redes de soporte familiares y sociales.

## ¿Qué están haciendo ya los equipos de atención primaria?

En Catalunya, varios equipos de atención primaria (EAP) están implicados en la detección, derivación y algunos en la intervención de la soledad y el aislamiento social. Son claros ejemplos su implicación en las iniciativas comunitarias «Escoles de salut» y «Baixem al Carrer» promovidas por la Agència de Salut Pública de Barcelona y «Radars» del Ayuntamiento de Barcelona. Desde el campo de la investigación, el proyecto «CAMINS: de la solitud a la participació» ha implementado y evaluado una intervención grupal en 3 EAP, llevada a cabo por trabajo social y enfermería con implicación comunitaria para conectar entre ellas a personas solas de un mismo barrio promoviendo el apoyo entre iguales y la participación social<sup>2</sup>. Entre otras cosas se favorece que los participantes compartan sus propias y diversas vivencias relacionadas con la soledad, por ejemplo trabajando con imágenes. Para conectar a las personas mayores con los recursos del barrio, profesionales y personas voluntarias elaboran un mapa de activos en salud que sirve de punto de partida para que las personas participantes decidan qué 5 recursos del barrio quieren ir a conocer junto a las personas voluntarias.

Actualmente, la intervención de CAMINS forma parte, junto a otras temáticas, del ensayo clínico AEQUALIS

que se está aplicando en 16 centros de primaria de Catalunya<sup>3</sup>.

## Cómo (no) abordar la soledad

Mientras que las intervenciones mencionadas tienen como eje central el empoderamiento de las personas mayores y su conexión con oportunidades que tienen a su alcance, los autores se refieren al metaanálisis de Masi et al. que «concluye que las intervenciones que actúan sobre los pensamientos sociales maladaptativos son las que mejor reducen la soledad»<sup>4</sup>. Sin embargo, los resultados favorables a las intervenciones cognitivo-conductuales se fundamentan en 4 estudios eficaces, 3 de los cuales están dirigidos a jóvenes y solo uno a personas mayores institucionalizadas, basado en terapia de reminiscencia. El resto de ensayos clínicos eficaces en personas mayores que incluye el metaanálisis se basan en la estrategia de aumentar el apoyo social. Así, la propuesta de abordar la soledad como trastorno maladaptativo mediante una terapia cognitivo-conductual para efectuar «una reestructuración cognitiva de estos sentimientos distorsionadores» nos parece poco fundamentada en la evidencia científica.

Existe un ensayo clínico finlandés de alta calidad metodológica que ha demostrado que una intervención grupal dirigida a promover el apoyo entre iguales, la participación y el empoderamiento era coste-efectiva, reducía la mortalidad y el uso de recursos, y mejoraba la cognición y la calidad de vida de aquellas personas mayores que se sentían solas<sup>5</sup>.

Por último, queremos destacar que el hecho de que la soledad tenga un impacto patofisiológico no significa que la solución sea redireccionar los mecanismos alterados, como por ejemplo mediante un medicamento. En realidad, sabemos que el apoyo social afecta la salud mediante procesos macrosociales dinámicamente conectados con procesos psicobiológicos<sup>6</sup>.

Concluyendo, los problemas complejos requieren soluciones complejas. El ser humano es multidimensional, con sus dimensiones física, psíquica y social estrechamente interrelacionadas. Así, como en parte también apunta el artículo, abordar la soledad desde la atención primaria debería fortalecer la implementación del modelo biopsicosocial, la perspectiva de salutogénesis y la intervención comunitaria, y no la biologización de lo social, es decir, la medicalización de la soledad.

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Anna Mas i Talens

Com el pa amb oli  
en companyia, la solitud  
passa millor

**Like bread and butter; loneliness is easier  
to digest when in company.**