

Supplementary material 2

Table 6. Key study characteristics

| Study | Focus | Aim | Sample and setting | Intervention description | Intervention primary care network schemes | Role of health care professionals | Facilitators ⁺ and barriers ⁻ |
|-----------------------|--|---|---|--|---|---|--|
| Bleijenberg 2016 (34) | 11 geriatric conditions and loneliness | Evaluate intervention effect on loneliness and other 10 geriatric conditions | 835 participants across 39 general practices in Netherlands | Assessment loneliness at home by primary care nurse, tailored care plan, or referral to other services if needed | Primary care-home care-referral to specialized services if required | Family physicians involved in detection, specially trained primary care nurses led intervention and referrals | -Time-consuming aspects such as building trust, training nurses -Short time of the trial and large caseload for nurses affected the delivery |
| Bolton 2020 (78) | Social isolation | Explore experiences of participants in social isolation intervention "Circles of Support" | 7 participants across 6 Integrated locality teams in UK | Assist discharged isolated patients to building social networks, navigate care system | Network of advocates hospitals, social care teams and agency AGE UK. Community health worker at social care teams act as nexus between hospital and home, refer to social care professional, befrienders, primary care centres or other | Community health worker in Integrated Locally Teams act as gatekeeper. Social care professional established support system. Volunteer navigators and befriender build network | +Receiving public funding to create an integrated care network -Lack befriending volunteers - Short-term involvement of professionals after generating attachment with the participants |
| Borji 2020 (67) | Loneliness | Assess effect religious intervention on subjective vitality and sense of loneliness | 110 participants unspecified number or community health centres in Iran | Address loneliness through group religious intervention | No network. Within community health centres | Community nurses detected patients and delivered the interventions | Not reported |

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| Carnes 2017 (73) | Social isolation + primary care frequent attenders | Evaluate implementation and outcomes of social prescribing intervention | 381 participants across 22 primary care practices in UK | Appoint social prescribing coordinators in primary care centres which referred patients to community | Social Prescribing (SP) scheme. Primary care- SP coordinator (link) refers to community organizations and services | Family physicians detected patients and referred them to social prescribing coordinator trained in social work which recommended tailored community organizations, services or volunteers. Trained volunteers assisted in the delivery of the service and provided additional support | + Link professionals dedicating time to explore participant needs leading to positive outcomes -Participant's lack of understanding and perceived need for the intervention, overwhelmed by other health needs and logistical problems |
| Coll-Planas 2017 (55) | Loneliness | Explore feasibility of intervention and short-long term effects on loneliness | 38 participants across three primary care centres in 2 urban areas in Spain | Map assets, create network, training primary care professionals and volunteers to deliver multifaceted group program | Social Prescribing scheme. Network between primary health care centres and community assets in the neighbour | Primary care nurses, physicians and social workers detected, referred patients and trained volunteers. Volunteers were older people from senior centres, which introduced lonely patients to community assets | +Professionals, volunteers, and community assets as key bonding elements for long-term social contacts -Limited time availability might lessen the participation of volunteers |
| Conwell 2020 (56) | Mental health conditions and loneliness | Evaluate companionship to older primary care patients effect on clinical outcomes | 369 participants from national network community-based social service agency in USA | Address loneliness through trained volunteer peer companionship including befriending and peer mentoring | No network. Primary care recruitment and Aging Services Network provide intervention | Peer companion volunteer provided by the ASN agency were linked to primary care patients by the agency | +Volunteers are perceived as closer to the participants. +Low intervention cost due to the involvement of volunteers, facilitating dissemination |

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| Daban 2021 (32) | Social isolation | Evaluate intervention impact on health outcomes | 147 older adults isolated due to movement restrictions or architectural barriers in 5 deprived neighbourhoods, Spain | Address social isolation by carrying out outdoors outings facilitated by volunteers | Primary care teams collaborate with public health community care teams | Primary care and social care clinicians plus community workers detected patients isolated and enrolled volunteers | Not reported |
| Diez 2014 (70) | Social isolation | Evaluate intervention "let's go down to the street" outcomes | 74 participants, setting no disclosed, Spain | Address social isolation through professionals and volunteers that facilitate assisted overcome architectural to attend community activities | Primary care teams collaborate with public health community care teams | Primary care and social care clinicians plus community workers detected patients isolated and enrolled volunteers | Not reported |
| Franse 2018 (65) | Frailty, falls, loneliness polypharmacy | Explore effects of a preventive health social care intervention | 1215 participants in intervention group, 1110 control group across primary care settings in 5 European cities (Greece, Croatia, Netherlands, Spain, UK) | Create coordinated pathway including first assessment, shared decision making with care coordinator and physician, referrals to activities or support group | Social Prescribing scheme. Primary care centres gatekeeper, referral to community assets | Family physician and care coordinator referred patients to care pathway to connect with community assets. Care coordinator monitored progress and physician follow up on patients if needed | +Professionals having previous trust relationship with participants -Parts of the intervention time consuming for the professionals -Health and mobility problems of participants can be barrier to engagement |

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| Hernandez-Ascanio 2020 (72) | Social isolation and loneliness | Study protocol ongoing intervention to evaluate intervention effect on health outcomes | 57 participants across 6 primary care centres in Spain | Assessment and creation of tailored plan, referring to different activities | Primary care clinicians detect, refer cases to supervised volunteers, that delivered intervention at home or over telephone | Family physicians detected, referred patients and supervised volunteers. Volunteers delivered intervention at home or telephone | Not reported |
| Honigh-de Vlaming 2013 (62) | Loneliness | Evaluate effect of an intervention to reduce loneliness in the high-risk groups, and create awareness | 1350 participants, setting no disclosed, Holland | Implement integrated intervention to create awareness and refer patients to psychosocial interventions, social activation by community based neighbours. | Community intervention formed by regional community health service, local elderly welfare organization and municipality. Includes general practitioner referral | Community care nurses, municipal advisors and volunteers were involved but role is unclear | Not reported |
| Howarth 2020 (71) | Social isolation, loneliness, anxiety, and well being | Evaluate intervention outcomes | 47 participants, setting no disclosed, UK | Create intervention to refer patients to co-created therapeutic garden | Social Prescribing scheme. community nurses refer patients to link worker that connect with therapeutically garden | Community nurses detected and referred patients to link worker, link worker connected them to the services provided follow up | +Co-creation of the therapeutic garden with the collaboration of multiple organizations -Interventions rely on donations, grants, and awards due to lack of funding |

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| Juang 2020 (74) | Loneliness | Explore feasibility, acceptance, and outcomes intervention RESOLV | 32 participants from 1 veteran affairs health care setting in USA | Community based telephone activity for patients and veterans, to engage in over hundred social group activities through phone | Veterans affairs facilities link patients with community organization that delivers program | Veteran facilities psychologist, social workers, nurses and physicians detected and referred patients to trained social worker facilitators or volunteers, who provided instructions to enroll in telephone program | +Existing community network based on partnerships made the intervention sustainable. -A perceived lack of fit with other group members or activities; poor phone connection; hearing difficulties; poor health and memory; affected participation -Considering living alone as loneliness hinder detection those in need |
| Kellezi 2019 (36) | Chronically ill patients experiencing loneliness | Assess degree social cure model captures experiences of healthcare staff and patients in social prescribing interventions | 2630 participants in 1 social prescribing pathway in UK | Address loneliness through clinicians' referral to link person who assess, check patient progress, accompanies him first meeting community groups | Social Prescribing scheme. Primary care clinicians refer patients to health coaches and link workers that connect them with third sector groups | Family physicians and practice nurses in primary care referred patients to health coaches or link workers that assessed needs and referred them to third sector groups | +Existing community network and pathways help GP address loneliness +Long visit with link workers favours participation + Having the link worker inside the GP practices facilitate pathway referrals, visibility and engagement -Short time visits with GP limits addressing social needs -Limited understanding of pathways by GP poor feedback of patients after referral -Isolated individuals can feel fear towards group participation -Lack of match between the group, participants, and the activities |

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| Khan 2020 (57) | Social isolation | Explore participant experiences in a group-walking intervention | 12 participants in 1 primary care centre in UK | Address social isolation through a single community walking intervention. | No network, within primary community care | Family physician resident detected patients and led the activity | -Not knowing anyone in the group and limitations to walk related to decreased physical condition affected engagement |
| Kruithof 2018 (69) | Mild intellectual disabilities, indirectly social isolation and loneliness | Explore experiences of participants involved in communal table intervention | 19 participants across undefined city districts in Netherlands | Creation of monthly dinners to enlarge social networks for socially isolated people with mild intellectual disabilities | No network, within primary community care | Social worker and three volunteers led the intervention | +Low fees ensured equity +Tailor interventions to pre-existing social networks and motivations -Large groups and lack of professional support facilitating socialization lowered attendance -Fear to meet new people |
| Lapena 2020 (61) | Social isolation and loneliness | Explore participants' and organisers' perceptions of the implementation 'School of Health' intervention | 26 participants across 2 neighbourhoods in Spain | Intervention to promote resources and encourage participation in community. Volunteer experts informed about community assets, conducted visits and provided tools to improve social network | Social Prescribing scheme. Primary care clinicians refer patients to nurse coordinators that connect patients with community assets | Primary care clinicians detected and referred patients to community nurses who coordinated volunteers, supervised sessions, and accompanied participants to avoid fear rejection. Key agent volunteers led interventions | +Program coordinators with high interpersonal skills accompanying patients to interventions lowered fear +Accessible location, adapted frequency, schedule and duration of intervention +Adapting to attendant impairments +Previous trust relation with coordinators +Low cost intervention using existing health assets and volunteers -Ageing decline hindered participation -Professionals work overload |

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| Mays 2020 (31) | Social isolation and loneliness | Evaluate intervention's effect on outcomes | 464 participants age 50 years or older. USA | Intervention to refer individuals to Evidence-Based-Practice activities (Arthritis exercise program, Enhance Fitness, Tai Chi for arthritis, Chronic Disease Self-Management) | Primary care providers referred individuals to Area Agencies on Aging, which provided Evidence-Based-Practice activities | Different primary care professionals (i.e. Primary care physicians, nurse practitioners, pharmacist, social workers and case managers placed referrals. | +Direct referrals to program through shared EMR +Program coordinator embedded in the health care system to enroll participants associated with decreased loneliness and social isolation |
| Moffat 2017 (64) | Long term condition. Social isolation loneliness no primary focus | Explore feasibility and experiences patients referred to link worker | 30 participants across 12 primary care centres in UK | Referrals from primary care to link worker that connected patients with community voluntary groups | Social prescribing scheme. Primary care clinicians refer to link worker that connects patient with voluntary sector organizations | General practice clinicians referred patients to link worker that visited patients, built trust, provided health education, and referred patients to voluntary sector organizations. Link worker accompanied participant to activities | +Length of the program facilitate engagement +Interpersonal skills facilitate building trust with link workers +Link workers accompanying participants to the activities eases entrance to new groups |

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| Mulligan 2020 (38) | Depression, anxiety, loneliness and social isolation | Evaluation social prescribing intervention | 1101 clients across 11 community health centres in Ontario, Canada | Enabling a system of referrals from primary care to community assets either directly or through a navigator | Social Prescribing scheme. Primary care clinicians refer participants to community organizations | Family physicians, nurse practitioners, and interprofessional team members (i.e. Nurses, dietitians, social workers, community support workers and occupational therapists referred participants | +Internally run and cost-free groups had fewer barriers to participation +Health care professionals accompanying participants to the first session +Involving Health Champions and navigators with strong communication skills +Asset mapping useful in small and rural centres +Shared electronic medical record facilitated evaluation +Standardizing documents across participating centers -Lack of dedicated navigator and follow up after referral. Not reported |
| Ozic 2020 (68) | Frailty, prevention falls and loneliness | Evaluate effect of intervention on health outcomes | 410 participants, setting no disclosed, Croatia | Preventive integrated health and social care public health intervention that provided education and workshops for older population | No network. Within home care service | Community nurses detected patients, helped university research team to create interventions, provided follow ups and participated in interventions | |

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| Rodriguez-Romero 2020 (60) | Loneliness | Evaluated intervention effect on social support and quality of life | 55 participants in an urban area in Spain | Involve patients in health, well being and networking group activities such as health promotion and prevention, third sector, private entities, social workers | Social prescribing scheme. Primary care clinicians refer patients to health coaches and link workers that connect them community assets and activities | Nurse practitioner and physician detected and recruited, NP led the intervention which involved PHC nurses, family physicians, social workers, neighbourhood community agents, private entities and third sector | +Network between civil, social, religious organizations, and volunteering for elderly at the local level +Personalized follow up by nurse facilitated engagement +Longer length intervention facilitated socialization and positive outcomes |
| Routasalo 2009 (59) | Loneliness | Evaluate effect of intervention on health outcomes | 235 participants across 7 community centres and 6 communities in Finland | Psychosocial group intervention for older adults experiencing loneliness | No network, within primary community care | Registered nurse, occupational therapist and physiotherapist led detection and delivery of the intervention | Not reported |
| Sadarangani 2019 (79) | Chronic conditions, loneliness as outcome measure | Evaluate health intervention effect on health outcomes and explore stakeholders experiences | 126 participants across 12 adult day centres in USA | Inclusion of registered nurse navigator that increases assessment social needs through home visits and facilitate care transitions | Primary care clinicians + community based health at-home service supports adult day health centres | Registered nurse navigator performed at-home assessments of high-risk individuals, facilitated care transitions. Worked with registered nurses, physical therapists, occupational and social workers, speech pathologist, dietitian, in coordination with physician | Not reported |

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| Savikko 2010 (58) | Loneliness | Evaluate processes and mediating factors of a group rehabilitation intervention | 117 participants across community regions rehabilitation and therapy centres in Finland | Psychosocial group rehabilitation intervention through groups activities such as exercise or therapeutic writing | Researchers and rehabilitation centres clinicians connect patient with community assets like cultural events or art | Registered nurses, occupational therapists and physiotherapist led the detected patients and led intervention groups | +Participants free to choose the group in which to participate, based on shared interests +Improved results +Provide transportation for the participants |
| Taube 2018 (63) | Loneliness, symptoms of depression and life satisfaction | Evaluate effects of a case management intervention | 153 participants across 3 university hospital clinics and 3 primary care centres in Sweden | Case management intervention with Registered Nurse case managers and physiotherapist to detect and address frail adults focusing also on loneliness | No network, detection and referral from clinical settings primary care, hospital and home care, and intervention from same clinicians | Primary care clinicians recruited patients. Case managers registered nurses and physiotherapists delivered intervention | -Lack of standardized or explicitly strategy when intervening against loneliness led to lack of effectiveness |
| Theeke 2015 (75) | Loneliness | Explore initial feasibility and acceptability of the LISTEN intervention | 27 participants in a university based family medicine centre in USA | Psychosocial group intervention delivered in sessions, including topics as perceived belonging or establishing meaning in loneliness | No network, recruitment in primary care by searchers and delivery in primary care settings | Not disclosed | +Facilitate access by parking accommodation, adaptation of spaces for people with disabilities +Right length of activities +Accompany the participants to the first activities +Social skills of the professionals (i.e., good listener, nonjudgmental) +Weekly reminders to participants -Long distance to activities |

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| Thomson 2020 (77) | Mental health users, social isolation as outcome | Assess a combined arts- and nature-based museum intervention effect on health outcomes. | 46 participants from unspecified mental and social services in UK | Intervention to refer patients by community health nurses from mental health social services to horticulture and arts-based activities with volunteers | Social Prescribing scheme. Detection in local mental health and social services and referral patients to community activities horticulture and arts based | Community mental health nurse detected at risk patients and referred them to the activity | Not reported |
| Van Der Heide 2012 (76) | Loneliness | Investigate CareTV intervention effectivity | 120 participants in 1 home care organization in Netherlands | Implementation of a technological system that allows the patient to connect via video voice with carers, family and friends from their home | No network, home care organization- homes technological intervention | Private home care agency installed technology. Nurse practitioner was connected with patient through technological system | -Difficulties using the technology by older adults |
| Vogelpoel 2014 (66) | Impaired sensory older people experiencing social isolation | Describe the benefits of a social prescribing service | 12 participants across 1 general practice and voluntary organization in UK | Integrated services, arts based activities and voluntary sector support, homogenous group experience similar challenges to promote cohesiveness and indirect support from peers | Social Prescribing scheme. Detection and referral by physicians connecting patients to community organization | Family physician identified and referred participants with sensory impairment to a volunteering third sector organization | +Regular contact between coordinator and participants +Reminders of transport arrangements and upcoming events. +Providing transportation (i.e., community transport, taxis, buses) +Centre adapted to disabilities and sensorial impairments +Staff and volunteers accompany participants help overcome the initial fear of being outside home |

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| Walters 2017 (26) | Social conditions in older people, including social isolation and loneliness | Test feasibility and costs of using technological tools HRA-O and SWISH risk appraisal system | 454 participants across 5 general practices in UK | A comprehensive report is generated and shared with primary care practitioners. Include ageing advice, signposting to national and local resources | No network, technological intervention | Family physician detected and invited participants, external agency installed technology to assess social risk, uploading evaluation and care plan into medical records. Patients were then followed by physicians and nurse practitioners | Not reported |
| Weiskittle 2021 (33) | Social isolation | Evaluate feasibility and acceptability of an intervention to address social isolation among older Veterans | 21 Clinicians across 3 Veteran primary care integrated care settings, USA | Telehealth based intervention to address social isolation in the context of chronic underlying mental health needs of older Veterans during COVID-19 pandemic | No network, technological intervention | Clinical psychologists, social worker, psychology trainees delivered telehealth psychological support (i.e., Acceptance and Commitment Therapy, Problem-Solving Therapy, Cognitive Behavioural Therapy (CBT)) | -Technology use complicated and challenging, specially among functionally impaired individuals -Brief recruitment period |