ABSTRACT

Objectives Primary care is well positioned to identify and address loneliness and social isolation in older adults, given its gatekeeper function in many healthcare systems. We aimed to identify and characterise loneliness and social isolation interventions and detect factors influencing implementation in primary care.

Design Scoping review using the five-step Arksey and O’Malley Framework.

Data sources MEDLINE, CINAHL, EMBASE, COCHRANE databases and grey literature were searched from inception to June 2021.

Eligibility criteria Empirical studies in English and Spanish focusing on interventions addressing social isolation and loneliness in older adults involving primary care services or professionals.

Data extraction and synthesis We extracted data on loneliness and social isolation identification strategies and the professionals involved, networks and characteristics of the interventions and barriers to and facilitators of implementation. We conducted a thematic content analysis to integrate the information extracted.

Results 32 documents were included in the review. Only seven articles (22%) reported primary care professionals screening of older adults’ loneliness or social isolation, mainly through questionnaires. Several interventions showed networks between primary care, health and non-healthcare sectors, with a dominance of referral pathways (n=17). Two-thirds of reports did not provide clear theoretical frameworks, and one-third described lengths under 6 months. Workload, lack of interest and ageing-related barriers affected implementation outcomes. In contrast, well-defined pathways, collaborative designs, long-lasting and accessible interventions acted as facilitators.

Conclusions There is an apparent lack of consistency in strategies to identify lonely and socially isolated older adults. This might lead to conflicts between intervention content and participant needs. We also identified a predominance of schemes linking primary care and non-healthcare sectors. However, although professionals and participants reported the need for long-lasting interventions to create meaningful social networks, durable interventions were scarce. Sustainability should be a core outcome when implementing loneliness and social isolation interventions in primary care.

INTRODUCTION

Loneliness and social isolation are public health issues that gained global attention during the COVID-19 pandemic lockdowns.1 The two concepts are closely related yet reflect distinct psychosocial processes. Loneliness is defined as an unpleasant emotional state resulting from the perception of insufficient social relationships, either in quantity or quality.2 Loneliness implies a subjective and negative experience product of a mismatch between the existing and the desired social connections.3 In contrast, social isolation reflects an objective absence or a scant number of social relationships with other people. Thus, socially isolated individuals might not experience loneliness if the lack of relations aligns with their desires and expectations. Similarly, a person can feel lonely independently of the number of connections if this number is not quantitatively or qualitatively desirable.3 Despite being independent constructs, loneliness and social isolation are often studied simultaneously in health research, given their similar detrimental effects on health outcomes.4 5 Recent studies found that adults experiencing loneliness and social isolation have a likelihood of...
mortality increased by 29% and 26%, respectively, and are at higher risk of cardiovascular and mental diseases.7–9

Older adults are especially prone to loneliness and social isolation.6 Estimates of the prevalence vary depending on measurement methods and countries, ranging from >13% in the UK,13 and 18.6% in Canada,12 to 25% in the USA.13,14 Recent reviews indicated that ageing-related events such as the loss of a partner, friends or relatives, or health impairments, including hearing loss and functional limitations, are associated with a decrease in social relationships, leading to a higher risk of loneliness and social isolation.15–17 In addition, income and living conditions influence loneliness and social isolation. The prevalence of loneliness in older adults living in poor households is 10% higher than that of those living in higher-income households, according to a survey of 14 European countries.18 In contrast, living with ≥2 people has been shown to significantly reduce the risk of loneliness (OR: 0.39, 95% CI 0.32 to 0.47).18 Similar patterns have been reported for social isolation, living arrangements and income.19 Other studies linked social isolation with limited availability of social activities or transportation,19 less social support19 and living in less cohesive communities, defined as the extent of connectedness and solidarity among social groups.20 The presence of multiple typologies of risk factors suggests that loneliness and social isolation are social problems that may require comprehensive responses and synergic collaboration between health and non-health sectors. However, theoretical approaches guiding loneliness and social isolation interventions have been claimed to be heterogeneous, with the risk of conveying conceptual inconsistencies.21

Primary care professionals (ie, family physicians, primary community and nurse practitioners and social workers) often provide first-level care and are well situated to reach out to lonely and socially isolated individuals.22–25 In countries with a national healthcare system including primary care, such as Spain or the UK, citizens are registered in primary care centres and have lifelong follow-up,26 allowing primary care professionals to identify social, physical and mental factors associated with loneliness and isolation in their assigned population during routine consultations.26 Moreover, long-lasting therapeutic relations with primary care professionals might motivate older adults to continue visiting primary care services despite being socially isolated or lonely, in some cases as a point of social contact.22 However, our preliminary search indicated that primary care professionals’ screening for loneliness and social isolation in older adults may be limited,27,28 partially due to uncertainty about how to proceed after lonely and isolated persons are identified.29

While identifying loneliness and social isolation in primary care settings is crucial, clinical and public health interventions must be available after detection.30 Strengthening primary care collaboration with other health and non-healthcare sectors has been widely proposed to address factors leading to social isolation and loneliness.22–25,30 For instance, a recent report from the US National Academies of Sciences, Engineering and Medicine recommended further implementation of evidence-based loneliness and social isolation assessment, prevention and interventions by healthcare professionals, enabled by more robust integration between primary care and community sectors.30 Establishing connections between primary care and other health (ie, specialised care) and non-healthcare sectors (ie, third sector organisations, volunteer groups) could allow primary care professionals to complement medical treatments with additional resources to strengthen older adults’ social network.31,32 or respond to underlying medical problems (ie, hearing loss limiting sociability).33,34 Despite rising interest in these new approaches, the National Academies report emphasised that researchers are at the onset of comprehending how loneliness and social isolation interventions work.30

Primary care interventions to identify and address loneliness and social isolation in older adults may vary between regions. In addition, collaboration configurations between primary care and other health and non-healthcare sectors vary depending on contextual aspects, such as the characteristics of the primary care system or the availability of resources.35 This translates into the use of multiple definitions to refer to these configurations, such as social prescribing pathways,36 or asset-based community projects in the UK or structured referral pathways in Canada.37 Understanding how primary care professionals identify these social problems and the characteristics of interventions integrating primary and other sectors when addressing loneliness and social isolation is crucial to inform current and future interventions. Previous research synthesis in this field focused on general descriptions of intervention activities and outcomes, with no focus on the role of primary care in addressing them.15–18 To fill this research gap, we propose a systematic scoping review of the current research base in primary care-based loneliness and social isolation interventions. In particular, we aim to understand the strategies used by primary care professionals to identify loneliness and social isolation, to describe the characteristics of primary care-based interventions, and to detect facilitators and barriers influencing their implementation. The following research questions guided our review: (1) What is the literature on strategies used to identify loneliness and social isolation among older community dwellers in interventions involving primary care services?; (2) what are the characteristics of existing interventions involving primary care services and other health/non-healthcare sectors to address social isolation and loneliness among older community dwellers? and (3) what facilitators and barriers affect the implementation of loneliness and social isolation interventions in primary care settings?

**METHODS**

We followed the five-step Arksey and O’Malley methodological framework:45 identifying the research questions, identifying relevant studies, study selection, charting the data and collating, summarising and reporting the results. In addition, we used the population, concept and context approach46 when developing the research questions and search strategy, whereby the population refers to older

Galvez-Hernandez P, et al. BMJ Open 2022;12:e057729. doi:10.1136/bmjopen-2021-057729
adults, concept to loneliness and social isolation, and context to primary care settings. A protocol containing the rationale, objectives, research questions, and detailed methods of the review was developed between June and August 2020, and prospectively registered in Open Science Framework.

Definitions
We defined primary care based on the UK or Spanish models as the frontline to healthcare, such as primary care, community centres, general practice, home care and community pharmacies.\(^{47-49}\) We adopted the generic term non-healthcare sectors to encompass all resources or organisations supporting loneliness and social isolation interventions outside primary care or healthcare systems. Older community-dwellers (hereafter older adults) were defined as non-institutionalised or hospitalised persons aged >60 years.\(^{50}\)

To understand how primary care professionals identify loneliness and social isolation in older adults, we focused on determining which primary care professionals are involved in identifying them and the methods used (ie, scales). To study the characteristics of the interventions, we focused on data describing the arrangement of elements within the intervention (hereafter networks), namely, the sectors involved and the pathways used by professionals (ie, referrals from primary care to community organisations). In addition, we studied how stakeholders generated these networks between sectors, and we captured crucial intervention evaluation elements recommended by the National Academies,\(^{30}\) such as the theoretical frameworks underpinning the interventions, sustainability and strategies for data sharing between sectors.

Identifying relevant studies
We searched four databases (MEDLINE, CINAHL, EMBASE, COCHRANE reviews) using MeSH terms and keywords related to the components of the research question. First, we detected key terms and synonyms by analysing relevant papers in Yale Mesh Term Analyzer\(^{51}\) to develop an initial search in MEDLINE. A research collaborator from the University of Toronto library verified the comprehensiveness of the search strategy. Next, we adapted the search strategy to the databases following an advanced literature search sheet.\(^{52}\) Finally, we conducted a hand search on Google using the key terms loneliness, social isolation and primary care to identify grey literature. To fully capture the extent of the literature, time restrictions were not applied. The literature search was initially conducted from June to August 2020, with an update in June 2021. The complete search strategy is included in online supplemental material 1.

Study selection
Titles and abstracts were assessed by two reviewers. We included empirical studies in English and Spanish focusing on interventions to address older adults social isolation and loneliness involving primary care services or professionals, exclusively or in coordination with other sectors and workers, such as specialised care, outpatient clinics or Non-Governmental Organizations (NGOs). We excluded interventions delivered outside these settings or not provided by primary care professionals (ie, solely offered by NGOs, social clubs, or academic researchers), involving institutionalised adults, or theoretical studies and commentaries. To ensure rigour during the screening phase, we screened titles and abstracts, followed by the full text, using COVIDENCE software,\(^{53}\) after carrying out a pilot test to detect potential inconsistencies when applying eligibility criteria. The pilot test comprised (1) an independent screening by two reviewers of a set of one hundred records yielded from the search, (2) an assessment of discrepancies on the number of records included and excluded, (3) a final meeting to discuss potential inconsistencies and doubts concerning eligibility criteria.

Charting the data, collating, summarising and reporting the results
Data extraction followed an iterative process as the charting table was updated if additional unforeseen data was found.\(^{54}\) The charting table included descriptive data including title/authors, year of publication, country of origin, study design/setting/aim, study population and sample size and key findings. The key findings section contained three columns related to (1) loneliness or social isolation identification strategies (ie, tools used and role of primary care professionals involved), (2) intervention characteristics (ie, type of health and non-healthcare sectors, strategies to create connections between sectors, pathways used by primary care professionals, data sharing between sectors, theoretical aspects and intervention duration) and (3) facilitators and barriers (factors promoting or hindering implementation outcomes). We used qualitative content analytical techniques,\(^{54}\) involving transferring the charted data into a database and assigning codes according to distinct units of meaning, grouping data with similar codes into categories, and integrating multiple categories into themes. For instance, data on the type of sectors involved in the interventions coded as ‘only primary care involved’, ‘connection between health and non-health sectors’, and ‘connection between healthcare sectors’, were grouped into a category named ‘sectors and pathways’. Finally, we integrated the categories into themes that addressed the proposed research questions.

Patient and public involvement
No patients or public were involved in the study. No ethical approval was needed because data were collected from previously published studies in which informed consent was obtained.

RESULTS
The search strategy yielded 12 397 papers, 34 reports and 8 articles from literature review references. After removing duplicates, 7848 document titles and abstracts
were screened, and 215 records were eligible for full-text screening. Finally, we included 32 articles for the reasons shown in figure 1. Twenty-eight per cent of the studies (n=9) were conducted in the UK (table 1). Eighty-eight per cent (n=28) were published between 2014 and 2021. All studies included primary data and mostly followed quantitative, non-Randomized Controlled Trials, and mixed-method methodologies. Twenty studies (63%) exclusively focused on social isolation or loneliness, while the rest addressed these issues in addition to other geriatric conditions (ie, risk of falls, sensory impairments, urinary incontinence). A chart with detailed data for each article is available in online supplemental material 2.

**Strategies used to identify loneliness and social isolation among older adults in primary care services**

Only seven articles (22%) reported strategies to identify loneliness or social isolation in older adults during the recruitment phases of the interventions. The strategies comprised the administration of questionnaires to potential participants with a single screening loneliness

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**Figure 1** Study inclusion flow chart, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA checklist).
item (n=4), asking individuals ‘do you feel lonely?’ during clinical encounters with primary care professionals (n=1), administering a loneliness scale (n=1), and searching for lonely and socially isolated adults in medical records using keywords (n=1). Most studies (n=26, 81%) did not report loneliness and social isolation assessments to identify potential participants. Instead, in 13 studies (41%), individuals were invited to participate in loneliness and social isolation interventions based on the presence of risk factors (ie, age >65 years, living alone, consultation gaps). Complementary strategies to recruit socially isolated and lonely patients included advertising posters and leaflets distributed within primary healthcare facilities.

In contrast, 44% of studies reported using loneliness and social isolation scales and questionnaires after older adults were enrolled for baseline and follow-up measurements. Five validated instruments were used to measure loneliness and two with social isolation as outcomes. The remaining 14 articles described various methods, including semistructured interviews and questionnaires. The detection method was not reported in seven studies because participants were recruited from existing interventions or for unknown reasons (table 2).

Family physicians, primary care nurses, and social workers, identified lonely and socially isolated adults in the recruiting phases of the interventions. The nonspecific term ‘primary care teams’ was used in two studies. Six studies reported that family physicians, nurse practitioners, social workers, pharmacists, and primary care teams referred participants from primary care to other settings without providing information about identification strategies.

**Characteristics of primary care-based interventions to address social isolation and loneliness among older community dwellers**

**Sectors and pathways**

Sixty-six per cent of the articles (n=21) reported interventions involving multiple health and non-healthcare sectors. The most prevalent pattern (n=17, 53%) consisted of referral pathways, including community referral pathways, social prescribing prescribing and care-pathways that linked primary care and non-healthcare interventions (table 3). A range of terms were used to define non-healthcare sectors, such as community resources or community organisations, local community assets and social groups. Through these pathways, caregivers, healthcare professionals, and community organisations worked together to address social isolation and loneliness among older adults.

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**Table 1** Characteristics of reports included (n=32)

| Characteristics        | n of studies included n (%) |
|------------------------|----------------------------|
| **Country**            |                            |
| UK                     | 9 (28)                     |
| Spain                  | 6 (19)                     |
| USA                    | 6 (19)                     |
| Netherlands            | 4 (13)                     |
| Finland                | 2 (6)                      |
| Croatia, Holland, Iran, Sweden, Canada* | 5 (15) |
| **Year of publication**|                            |
| 2018–2021              | 20 (63)                    |
| 2014–2017              | 8 (25)                     |
| 2009–2013              | 4 (13)                     |
| **study design**       |                            |
| Non-RCT quantitative designs (quasi-experimental, transversal) | 11 (34) |
| Mixed-method           | 11 (34)                    |
| Qualitative designs    | 5 (16)                     |
| RCT                    | 5 (16)                     |

*One study per country.
RCT, Randomized Controlled Trial.

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**Table 2** Strategies used to identify loneliness and social isolation among older adults in primary care services

| Detection strategies | Loneliness | Social isolation |
|----------------------|------------|------------------|
| **Scales**           |            |                  |
| UCLA                  | 31 36 59 68 79 71 | DUKE UNC31 72 |
| De Jong Gierveld65 77 |            | Lubben’s Social Network Scale69 |
| Tilburg Frailty indicator (loneliness sub item)65 68 |                  |
| Campaign to End Loneliness Tool56 |                  |
| INQ-Belong56          |                  |                  |
| **Item in a questionnaire** |            |                  |
| ‘Do you feel lonely nowadays?’ (yes very, yes rather, no I don’t)56 | Have problems related to social isolation64 |
| Feeling lack of companionship51 | Self-reported involvement in social activities community belonging78 |
| ‘I feel lonely (yes/no)’56 |                  |
| ‘Do you suffer from loneliness?’51 19 |                  |
| ‘Do you feel lonely?’55 |                  |                  |
| **Electronic medical records** |            |                  |
| Search lonely patients in EMR53 |                  |
| Search isolated patients in EMR57 |                  |
| **Indirect strategies** |            |                  |
| Inviting older adults age ≥6038 | Older adults with low mobility, architectural barriers32 70 |
| Considering at risk older adults living alone51 74 | Attending mental health services51 |
| Consultation gap >3 years54 | Physical limitations, low income, mild mental disabilities or recently widowed52 |

*Assessment of loneliness and social isolation as outcome measure of the study during the interventions.
†Identification strategies to recruit older adults for loneliness and social isolation interventions.
EMR, Electronic Medical Record; INQ, Interpersonal Needs Questionnaire; UCLA, University of California Los Angeles Loneliness Scale.
Table 3: Primary care-based loneliness and social isolation intervention pathways

| Referral pathways | Non-referral pathways |
|-------------------|----------------------|
| Primary care professionals refer older adults to a proxy worker, which connect them to non-healthcare sectors. | External agency recruited older adults from primary care settings, and paired them with volunteers. |
| Primary care professionals refer older adults directly to non-healthcare sectors. | Teams of community health and social care professionals connect hospital discharged adults to volunteers. |
| Primary care professionals refer older adults to an external organisation which connect them to non-healthcare sectors. | External researchers identify lonely older adults and connect them with primary care services that lead the interventions. |
| Primary care professionals refer older adults to other healthcare services. | No-network interventions, where primary care professionals identified lonely, isolated older adults and delivered the intervention in the same setting. |

primary care professionals identified and referred older adults experiencing loneliness, social isolation or related risk factors to non-healthcare sectors such as community resources or volunteering (table 4). In five studies (16%), the referral pathways included a proxy, that is, link workers, social prescribing coordinators, and navigators who had in-depth knowledge of community resources and connected participants with tailored resources based on their needs, provided follow-up, or delivered health education. In other instances (n=4, 12%), the studies described alternative non-referral pathways whereby external research or social organisations identified and enrolled lonely and isolated older adults from primary care settings.

Primary care professionals linked older adults with other health resources in five studies (16%) after assessing high-risk individuals for multiple age-related chronic conditions, including loneliness. In the study by Bleijenberg et al primary care nurses conducted holistic geriatric assessments at home and referred lonely or isolated older adults to specialist services to address underlying medical factors (ie, hearing loss, lack of mobility). Five studies reported no-network interventions, where primary care professionals identified lonely, isolated older adults and delivered the intervention in the same setting.

Theoretical approaches, network generation, sustainability and data sharing

Of the 32 interventions, 66% (n=21) did not provide clear theoretical underpinnings to justify the design of the intervention and the potential effects on lonely and socially isolated individuals. Eight studies (26%) used concepts related to loneliness and social isolation (ie, increase social cohesion or social support) to support their rationale, and only five provided theories (table 5).

Nine studies (28%) explained how the stakeholders generated the intervention networks to address social isolation and loneliness in older adults. These articles reported varied approaches, ranging from collaborations between primary care professionals and older adults to intersectoral partnerships between regional health services, municipalities, and welfare organisations (table 4).

The duration of the interventions ranged from 2 weeks to permanent interventions integrated in clinical practice for >2 years. The span of interventions in 12 studies (37%) was <6 months, with 9 (28%) lasting <3 months. The interventions were mainly pilot studies. In contrast the duration was >2 years in nine interventions (28%), which commonly reported follow-up evaluations. Financial and human resource shortages hindered the continuity of the intervention and their implementation in five studies, and one intervention was cancelled due to lack of funding. Eight studies (25%) reported shared electronic medical records or in-person communication information as data-sharing strategies between primary care professionals and non-healthcare sectors (table 5).

Factors affecting the implementation of loneliness and social isolation interventions in primary care services

Barriers

Primary care professionals’ workload was a barrier in four studies. Social isolation and loneliness interventions were perceived as time-consuming, given the time required to build trust with participants, design and...
Two studies reported challenges faced by professionals while taking on new interventions and existing workload amidst fast-paced clinical environments. In addition, family physicians experienced uncertainty about how to proceed after identifying loneliness if referral resources were unavailable. Similarly, workload-related barriers affected link workers in one study, where a high volume of referrals decreased the quality of social prescribing services. Centralising interventions around overburdened professionals endangered continuity due to potential turnover. In two studies, primary care professionals reported struggling to incorporate volunteers for social prescribing interventions due to a lack of interest.

Barriers affecting patient participation were reported in nine studies (28%). First, misinformation about the referral process and the role of linking professionals confused patients affecting their engagement. Similarly, one study reported worse feedback from participants when primary care professionals lacked a proper understanding of the referral pathways. In three studies, socially isolated and lonely older adults expressed reluctance to engage in group activities based on discomfort when joining a group while not knowing anyone. Participating in large groups without facilitating staff hindered socialisation and deterred attendance. Age-related factors such as physical and mental health limitations affected participant engagement in five interventions.

### Table 5 Relevant aspects of primary care-based loneliness and social isolation interventions

| #DOC | Intervention theoretical approaches | Loneliness-social isolation related constructs. |
|------|-------------------------------------|-----------------------------------------------|
| 78   | Enhance social network development.  |                                               |
| 73   | Promote social integration and social reactivation. |                     |
| 55   | Increase social cohesion.           |                                               |
| 33 65 56 | Increase social connectedness. |                              |
| 61   | Encourage participation in the community. |                                        |
| 60   | Increase social support.            |                                               |

### Theories

- Social capital theory.
- Van Tilburg network development theory.
- The social cure framework.
- Story theory and cognitive restructuring.
- Model of health and well-being.

### Creation of the networks

- Researchers, GPs, RNs, experts, and older persons designed intervention and network.
- Coordinated action to strengthen network between primary care centres, senior centres and other community assets.
- Community centres created or updated an asset map to compile community resources for social prescriptions.
- A group including regional mental health service, regional community health service, local elderly welfare organisation, municipality developed intervention, informed by interviews with older adults, professionals, and policymakers.
- Social prescribing space created via consultation with 20 organisations (ie, health, social care and charities working with the target population).
- Network generated by consultation with patients and healthcare professionals over an 8 year period.
- Networks between primary care and other settings already existent.

### Reported intervention duration

Continued

| #DOC | Continued |
|------|-----------|
| 57   | <1 month  |
| 31 58 59 71 74 75 78 79 | 1–3 months |
| 60 61 66 | 3–6 months |
| 63 68 76 | 6 months –1 year |
| 34 38 64 72 73 | 1–2 years |
| 26 32 36 55 56 62 65 69 70 | >2 years |
| 33 67 77 | Unknown |

### Data sharing between sectors

- In person meetings to coordinate plans between RN, GP and other health professionals.
- Delivering physical referral forms with patient information link workers or to the coordinator of third sector organisations.
- Healthcare professionals place data/referrals/consultations in shared electronic medical records.
- RN Navigators introduce assessment and screening tools data into cloud database.
Organisational barriers affected intervention implementation in several studies. Two studies described a lack of fit between participant interests, session content and participants, leading to loss of interest and discontinuity in attendance.\(^{36,74}\) In another intervention, the authors acknowledged a lack of standardised or explicit strategies for addressing loneliness, which decreased effectiveness.\(^{33}\) Primary care professionals’ short time of involvement in one intervention hindered the generation of trust with participants, affecting participation rates and outcomes.\(^{28}\) Lack of transportation, intervention prices and lack of interconnected IT resources between sectors were described as barriers for older adults’ participation in one study.\(^{38}\) Two studies reported difficulties in delivering technology-based interventions, either due to user challenges or technology errors, affecting attendance.

**Facilitators**

Three studies reported that having existing pathways to connect patients with community assets facilitated the intervention’s success and increased early adoption as they gave primary care professionals the tools to address social isolation and loneliness once detected.\(^{36,60,67}\) In addition, interventions relying on existing networks consisting of primary care services, community resources and volunteers lowered costs and favoured sustainability.\(^{56,61,74}\) Other studies based on referral pathways highlighted that having closer access to link workers or programme coordinators (ie, working within primary care) increased their visibility among healthcare professionals and influenced the adoption of the intervention.\(^{31,34,36}\)

In four studies, healthcare professionals and patients expressed the need for prolonged programmes to have more time to build social connections and trust relationships with other participants.\(^{33,60,64,66}\) For instance, Voegepoeel and Jarrold extended the intervention for longer than the pre-established 12 weeks to promote the effect on social relations.\(^{66}\) Older adults reported benefits and increased participation due to extended sessions with the link workers because they could share their needs and be heard.\(^{36}\) Three studies reported that delivering affordable activities was crucial to ensure equal access to those activities.\(^{38,59,69}\) For example, in the communal table project, the €1 three-course dinner allowed equitable participation independently of socioeconomic position.\(^{69}\)

A perceived fit with the activity content and group participants was crucial for older adults’ continuity in two studies. Engagement and outcomes improved when patients’ motivations and interests informed the design of the content.\(^{58,69}\) For instance, Howarth et al reported that collaborative approaches—involving organisation, healthcare professionals and patients—when creating the intervention network led to positive effects because it acknowledged lonely and socially isolated patients’ needs.\(^{71}\) Six studies also reported adapting the intervention to the participants’ physical and mental health conditions to ease access by arranging a place adapted to disabilities and sensory impairment,\(^{61,66,29}\) planning the activities with a proper frequency and duration,\(^{61,79}\) offering transportation or parking accommodation,\(^{38,58,59,66,79}\) and sending periodic reminders before the intervention.\(^{66,79}\)

In two studies, lonely and isolated older adults’ engagement in interventions increased when primary care nurses, link workers and volunteer neighbours participated, due to pre-established trust relationships.\(^{36,61}\) In addition, programme coordinators, link workers, and primary care professionals accompanied new participants to the groups to facilitate engagement and lessen fear when not knowing anyone.\(^{61,64,66}\) In four studies, participants highlighted how health professionals’ specific attributes, such as being warm, friendly or good listeners, helped build trust and favoured their adaptation to the intervention.\(^{38,61,64,79}\)

**DISCUSSION**

We provide an overview of aspects of primary care-based interventions to address social isolation and loneliness in older people. Loneliness and social isolation interventions with primary care participation have risen over the past 6 years. This may be due to the medicalisation of these social problems, motivated by recent studies linking loneliness and social isolation with higher mortality, worse health outcomes,\(^{6}\) and international calls for responses from healthcare systems since 2015.\(^{23,30}\) We found that primary care professionals did not screen older adults’ loneliness and social isolation before enrolling them in most interventions. Instead, there was a significant reliance on risk factors (ie, older age, living alone) as inclusion criteria. We identified a predominant intervention configuration in which primary care networked with one or more health or non-healthcare sectors to deliver the interventions. The interventions reviewed presented heterogeneous configurations, theoretical approaches and duration across studies, partially reflecting a lack of well-established models to address loneliness and social isolation.\(^{30}\)

While only seven interventions reported screening older adults’ social isolation and loneliness before joining an intervention, fourteen studies described the use of validated instruments to measure intervention outcomes. These results align with studies highlighting underscreening of these social problems,\(^{27,56}\) and a tendency to enrol easy-to-reach adults to ease complications in recruiting isolated and lonely individuals.\(^{30}\) Referring older adults to loneliness intervention groups without an appropriate assessment might lead to confusion and negative experiences, such as a lack of fit with the activities or a clash with preferences to deal with loneliness and social isolation privately.\(^{80}\)

We found that primary care professionals might perceive loneliness or social isolation assessments as a secondary duty. Similarly, in a recent qualitative study, family physicians acknowledged prioritising biomedical aspects over loneliness assessments due to work overload and limited time during clinical visits.\(^{29}\) Thus, underscreening of
these social problems is seemingly motivated by structural barriers in primary care settings rather than a lack of measurement tools. In addition, previous qualitative studies found that older adults using primary care services might be reluctant to label themselves as lonely or isolated due to the associated stigma. Thus, there is a need to develop efficient identification strategies that do not interfere with clinical practice. Efforts should focus not only on screening, but also on ensuring continued follow-up for lonely and socially isolated older adults. Future strategies might involve identifying individuals at risk using machine-learning natural language processing algorithms that autonomously explore social isolation or loneliness keywords in electronic health records or through maps to detect areas with a higher risk of loneliness. However, these methods will require further consideration of ethical issues concerning autonomy or privacy before being broadly implemented in clinical practice.

Two-thirds of the studies reported networks of primary care and one or more health or non-healthcare sectors to deliver the interventions, with referral pathways linking older adults from primary care to community resources, activities, or volunteering as the most common. This model is predominant given the high proportion of UK studies, where social prescribing schemes have been publicly funded since 2017. The high number of records adopting this approach aligns with international calls by the WHO and other international organisations to strengthen intersectoral collaborations by primary healthcare and non-health sectors to address population health and social needs. Despite this promising finding, we found that most interventions failed to provide theoretical justifications grounding the interventions. When reported, concepts and theories underpinning loneliness and social isolation varied across interventions. This heterogeneity hinders the interpretation of the results across studies, given the differences in assumptions and mechanisms of action when addressing loneliness and social isolation. Although some theories have been developed, loneliness and social isolation research in older age has no clear consensual theoretical framework. Further research might address the gap between theoretical models, clinical practice and public health programmes.

We also found high variability in intervention duration, ranging from 2 weeks to more than 2 years. This conflicts with the need for long-term interventions reported by older adults and professionals. Four studies indicated that longer interventions are required to effectively enhance older adults’ social networks, since building social connections and trusting relationships may be slow. Thus, achieving sustainability should be a core outcome of implementation efforts. Our findings align with reports showing that over-reliance on external funds, such as temporary grants, may limit the continuity of the interventions. In contrast, intersectoral networks connecting pre-existing resources, such as primary care services, existing community resources, and volunteers, are promising configurations to achieve permanent interventions embedded in clinical practice. Recent calls amidst the COVID-19 pandemic sought to strengthen intersectoral collaborations between health and non-health sectors to address complex social problems and ensure health equity, which indicates a window of opportunity to foster these approaches by influencing health agendas globally. Future evaluations informed by realist epistemologies are required to understand the mechanisms enabling the sustainable implementation of loneliness and social isolation interventions in health and non-healthcare settings.

We identified several facilitators influencing intervention outcomes and implementation. Well-defined referral pathways, collaborative approaches to design interventions, accessible and long-lasting interventions, and the involvement of professionals with strong interpersonal skills promoted successful intervention implementation. Studies have highlighted the positive effects of involving professionals with solid listening and communication skills to build trust relations with participants and help lessen fears when enrolling in new activities. In addition, we found that facilitating access to interventions in the form of transportation or affordability is a crucial component, as found by other reports. We also found that participants’ and professionals’ poor understanding of referral pathways, lack of fit between intervention components and participant interest, age-related limitations and the fear of joining new groups, were barriers that affected overall intervention uptake and acceptability. Interventions should be adapted to participants’ age-related physical and mental health conditions and social needs. Thus, adopting participatory or bottom-up approaches engaging the target population is paramount to design interventions tailored to the characteristics and needs of lonely and isolated older adults.

Limitations
This scoping review provides a broad overview of an unexplored topic and opens new research opportunities on how to involve primary care to tackle social isolation and loneliness in older adults. However, the study had some limitations. First, it only includes peer-reviewed empirical studies in Spanish and English, and despite efforts to incorporate grey literature, we only identified one report which fulfilled the inclusion criteria, limiting the comprehensiveness of the review. Second, we conceptualised the search strategy using terms and synonyms of primary care. Thus, the review does not represent interventions conducted without primary care participation in other sectors such as research institutions, volunteering or NGOs. In addition, we did not capture healthcare sectors not labelled as primary care or their synonyms included in the search strategy, under-representing regions without primary care or with first-level care defined differently. We limited the review to primary care as we were interested in exploring the characteristics of interventions in...
this healthcare sector to answer the research questions. Finally, we encountered vague definitions relating to primary care, loneliness and social isolation in several articles, which posed a challenge during the eligibility phase of the review. We addressed this limitation by searching for widely used synonyms and excluding reports with a high degree of lack of clarity. A quality appraisal of the articles was not conducted as the scoping review aimed to map the existing literature instead of detecting the best available evidence to answer the proposed exploratory questions.45 46

CONCLUSION

Older adults are commonly enrolled in interventions to address loneliness and social isolation in primary care based on broad risk factors such as age or living arrangements without an assessment of these social problems. This might lead to undesired outcomes resulting from a lack of fit between older adults' needs and the content of the intervention. There appears to be an increase in interventions consisting of intersectoral collaborations between primary care and non-healthcare sectors. Although this is a promising approach, widely supported by international organisations, improvement is required in reporting the theoretical underpinnings of the interventions. Long-lasting interventions are necessary to achieve meaningful social networks that can benefit lonely and socially isolated older adults. However, a significant number of interventions reported a duration of <6 months. Achieving sustainability should be a central outcome when designing and implementing loneliness and social isolation interventions in primary care.

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