A realist evaluation of loneliness interventions for older people

Abstract

Introduction

The aim of this study was to develop a programme theory to inform the design of loneliness interventions, and guide any future evaluations.

Methods

We undertook a multi-method evaluation, informed by realist methodology, of different approaches to loneliness in one health and social care system in the East Midlands, UK. We used a combination of documentary analysis, interviews/focus groups with service providers and users, and quantitative analysis to develop an initial programme theory.

Results

Common aims of local interventions included enhancing social connectivity, providing emotional support and advice/information; recurring interventions included social activities, emotional support, advice and information, lunch clubs, learning new skills and practical support. None were robustly evaluated.

Fifty-six service user or providers were involved in interviews or focus groups, which highlighted the causes of loneliness, preferred services, access to services, thoughts about intervention configuration and desired outcomes from services.

The themes emerging from the interviews/focus groups from both service provider and service user perspectives, were combined with all of the previous emerging data to create an overarching

programme theory. Statements were constructed to allow service providers to think about which interventions might be useful to achieve specific outcomes in different contexts.

Conclusions

The causes and consequences of loneliness vary widely between individuals, so a personalised approach is required to identify the causes and potential solutions. This study provides some high level principles that can help commissioners and providers to tailor interventions to the individual needs of service users.

Introduction

Loneliness is an internal, unpleasant subjective experience that begins when an individual's social network undergoes a qualitative or quantitative loss [1]. Loneliness is different from being alone or living alone - an individual may live alone but not feel lonely [2]. Loneliness is a major public health issue, attracting significant policy interest [3], particularly in the context of COVID-19. Loneliness especially impacts upon the oldest old [4] and is associated with a range of adverse outcomes, including frailty, cardiovascular disorders, cancer, inactivity, mood disorders, sleep deprivation, substance abuse, anxiety, dementia, hospitalisation, institutionalisation and premature death [5-19].

Loneliness has multiple interacting underlying causes [20-24] – it is a complex phenomenon. Evaluations of complex phenomena typically use mixed methods to describe the context, mechanisms and outcomes that relate to an intervention, supported by a programme theory [27, 28]. Programme theory refers to a variety of ways of developing a causal model linking programme inputs and activities to a chain of intended or observed outcomes, and then using this model to guide the evaluation [29]. Logic models allow the data and all components to be assimilated into a coherent and evidence-based diagram, to build an initial programme theory [30].

The population of Leicester and Leicestershire is around 1.1 million, including over 165,000 people aged 65 or more; both local councils have been implementing loneliness interventions over the last five years, including schemes set up with Big Lottery funding [31].

Aims and objectives

The aim of the work was to understand the impact of loneliness and associated interventions for older people in Leicester and Leicestershire, and to create an initial programme theory to shape future developments and evaluation.

Methodology

In order to undertake a comprehensive review and develop an initial programme theory, we used multiple methods, informed by the realist approach [27]:

1. Examination of local and national policy documents
2. Cataloguing of available services
3. Interviews and focus groups with service commissioners and providers
4. Interviews and focus groups with older people and carers
5. Data synthesis and development of an initial programme theory

Local policy documents, service specifications, interviews and focus groups with professionals and services users involved local commissioners, service provider organisations and the voluntary sector organisations representing a range of ethnically diverse communities.

1. Examination of local and national policy documents

National and local policy documents were identified via internet searches and consultation with local commissioners and providers of services. The aims from policy and strategy documents were identified and mapped to identify their commonalties and differences.

2. Cataloguing of available services

Information on loneliness services in Leicester and Leicestershire was obtained directly from provider organisations or web searches. The objective was to catalogue existing interventions: their target population; geographical coverage; aims; outcomes; cost; type of service; method of delivery; and funding. Provider organisations were contacted to request service and evaluation information, including voluntary organisations and council services alongside some other providers identified using snowballing. The information obtained was recorded in an Access © database; queries were performed to ascertain the number of interventions, the main aims, types of service and delivery

method of the services identified. From this information, a diagram was created showing the delivery method and type of individual intervention by categories (Appendix 1).

3. Interviews and focus groups with service commissioners and providers

The aim of these interviews and focus groups with service providers was to identify existing interventions being used in Leicester and Leicestershire, focusing upon what works for whom, when and why. A list of potential community groups, voluntary organisations and local authority contacts from which to identify participants was created. Additional services identified in these interviews were added to the database created in step 2 above.

Participating organisations took part in discussions or interviews, some of which were recorded, but where this was not possible detailed field-notes were taken. These organisations also helped to identify groups using services who were willing to take part in group discussions or interviews about their experiences and needs. Not all of the provider organisations took part in interviews and focus groups, in particular services for Black and Minority Ethnic (BAME) groups were under-represented as many were participating in a related but separate project.

Notes and transcripts from all the focus groups, discussions, meetings and interviews with service users and service providers were analysed in NVivo. The transcripts and notes were initially read by two researchers (AD, KP) to identify the main themes and subthemes within. These themes were slightly different for the service providers and for the service users, therefore two separate thematic nodes were created in the NVivo database for data to be coded. The data was coded by two researchers according to the initial themes and additional emerging themes and subthemes were added as coding took place. The thematic node structure was added to and developed as the coding progressed, as agreed by both researchers.

4. Interviews and focus groups with older people and carers

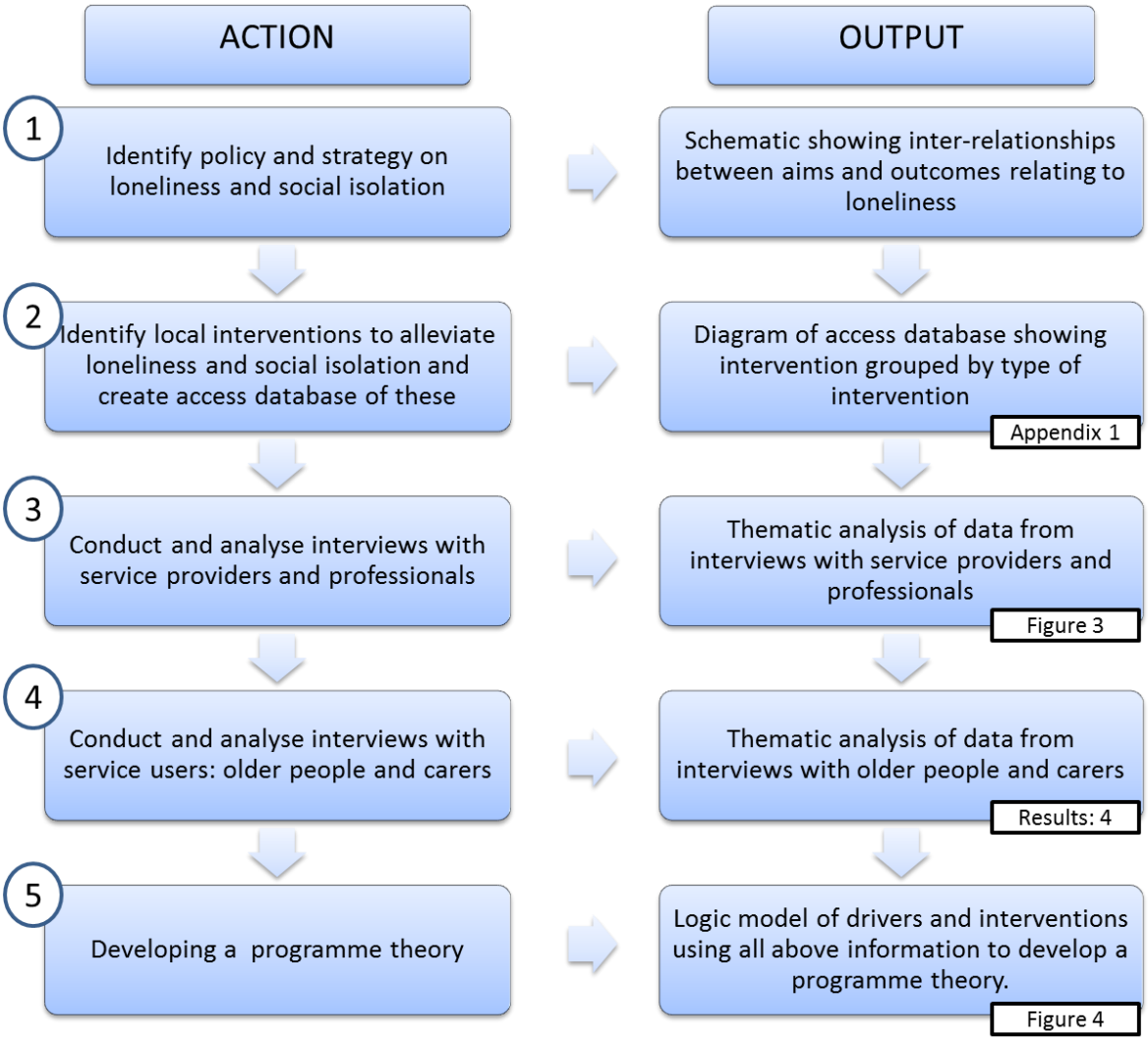
The aim of the interviews and focus groups with loneliness service users, carers' groups and older people who self-identified as lonely, was to determine the causes of loneliness and which services helped to alleviate loneliness. The methods and detailed results are reported separately [X-REF].

5. Data synthesis and development of the initial programme theory

The emerging findings were reviewed iteratively by a diverse group of researchers and stakeholders: – social scientists, historians, physicists interested in complexity theory, economists, computer scientists, media studies experts and clinicians; and lay representatives including Age UK and members of the county council. These discussions helped formulate an initial programme theory which drew upon all of the available information. Figure 1 summarises the process of data collection and analysis. Results from stages 1-4 described above were synthesised into themes as follows:

- Causes of loneliness and isolation
- Policy and service aims to do with loneliness and isolation
- Services to alleviate loneliness and isolation
- Barriers to accessing services

Figure 1 Flow diagram of methods and outputs describing the development of the programme theory



Funding and ethical approval was obtained from the University of Leicester; reporting was informed by the RAMESES II reporting standards for realist evaluations [32].

Results

1. Examination of local and national policy documents

The local and national strategy or policy documents on loneliness and social isolation had nine dominant aims. The intended outcomes of the policies on loneliness were aimed at the micro level (person-based outcomes), meso level (community-based outcomes) or macro level (system level outcomes). However, aims were complex and had multiple intended outcomes at each level. For

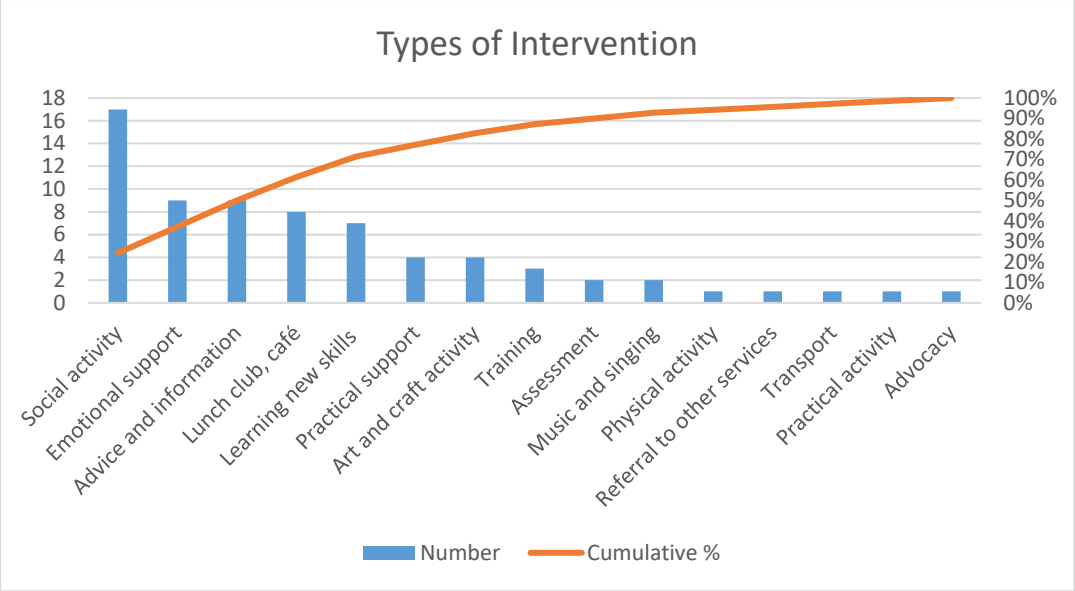
example the aim of enabling people to stay healthy and independent by developing skills and confidence to look after themselves was linked to the following outcomes:

- Person based outcomes: reduce loneliness; reduce social isolation; improve quality of life; increase physical activity
- Community based outcomes: change in morale of staff in general practice and other referral agencies; increased resilience of community groups
- System based outcomes: reduce burden on health and social care; reduction in ED attendances; reduction in GP consultations; reduction in hospital bed days.

2. Identification of available services, and document analysis on their aims and target users

In Leicester City, Leicestershire and Rutland, there were 71 services forming 15 categories. The most common type of intervention was 'social activity' (n=17) followed by 'emotional support' (n=9) and 'advice and information' (n=9). A frequency chart and Pareto analysis were used to identify the most frequent interventions (**Error! Reference source not found.**2), which included: social activities, emotional support, advice and information, lunch clubs or cafés, learning new skills, practical support and art and craft activities.

Figure 2 Pareto analysis of interventions to address loneliness in LLR



Though several of the services had produced reports on their activity and outcomes, only two had been formally evaluated: Voluntary Action South Leicester (VASL) and one overarching evaluation of interventions funded by Leicester Ageing Together (LAT). The report from LAT focused on health and social care service usage before and after using a service funded by LAT, showing an increase in wellbeing. Service users reported decreased feelings of loneliness and social isolation and improved wellbeing. They reported that the cost from using health and social care services *increased* after accessing an LAT service. The evaluation for VASL was a collection of case studies from service users, which concluded that the service should continue for another year.

3. Interviews and focus groups with service commissioners and providers

Twelve professionals involved in service provision for lonely older people took part in meetings, interviews or focus groups. Service providers did not directly discuss what they thought could reduce feelings of loneliness, but rather focused upon existing services.

Professionals did not discuss any physical health reasons for loneliness and instead discussed environmental factors such as changes in the nature and structure of communities/local environment.

Professionals felt that older people being less able to adapt to change was a driver of loneliness. Professionals felt that changes in social circumstances such as living alone caused loneliness. Psychological factors such as feelings of vulnerability, lack of belonging, loss of confidence and mental health issues were also discussed. Professionals reported outcomes of loneliness including: changed social circumstances, meaning that people were subsequently less able to interact with society; increased mental health problems.

Professionals saw referral by health professionals as a barrier to access, as service users were not always able to access a healthcare professional and that self-referral might be better. They also described the differences in requirements between people and between geographical areas, but not difficulty in finding services. Cost of services and transport were barriers, being embarrassed to ask for help and distrust of authorities were also factors.

The main themes were used to create logic models (Figure 3) to summarise the issues emerging from the interviews (causes of loneliness, methods of accessing services and barriers to accessing services).

Figure 3 Themes from interviews with service providers

Causes of loneliness	Accessing services	Intervention	Barriers
Carers	Health professionals	Group interventions • Social activities • Leisure activities • Skill development • Psychological therapies • Carer groups • Disease specific groups • Respite holidays	Different areas have different needs
Feel like they don't belong	Voluntary sector	Individual interventions • Face to face befriending • Telephone befriending • Carers befriending	Don't wan t to ask for help
Less able to adapt to change	Self-referral	Facilitators • Transport • Technology	Everyone has different needs

Loss of human contact	Social services	• Advice and information • Community hubs • Training and courses • Local area coordinators • Emergency services • Social prescribing	Funding
Loss of quality connections			Lack of joint working
Loss of resilience			Mistrust of authorities
Social isolation			Time constraints
Vulnerability			Transport
Change in communities			

4. Interviews and focus groups with older people and carers

In total 42 participants took part in group discussions (22), individual interviews (18) or sent their views via email (2). Of these, 24 were older people and 18 were carers. The full results are reported separately [X-REF], but the key points are summarised here. The main discussion points with service users were the causes of loneliness and isolation; the types of service used and preferred; how services were accessed; barriers to accessing services; what service users felt would alleviate loneliness and isolation and outcomes from service use. The results emerged into the themes: physical, psychological, social, environmental, and functional.

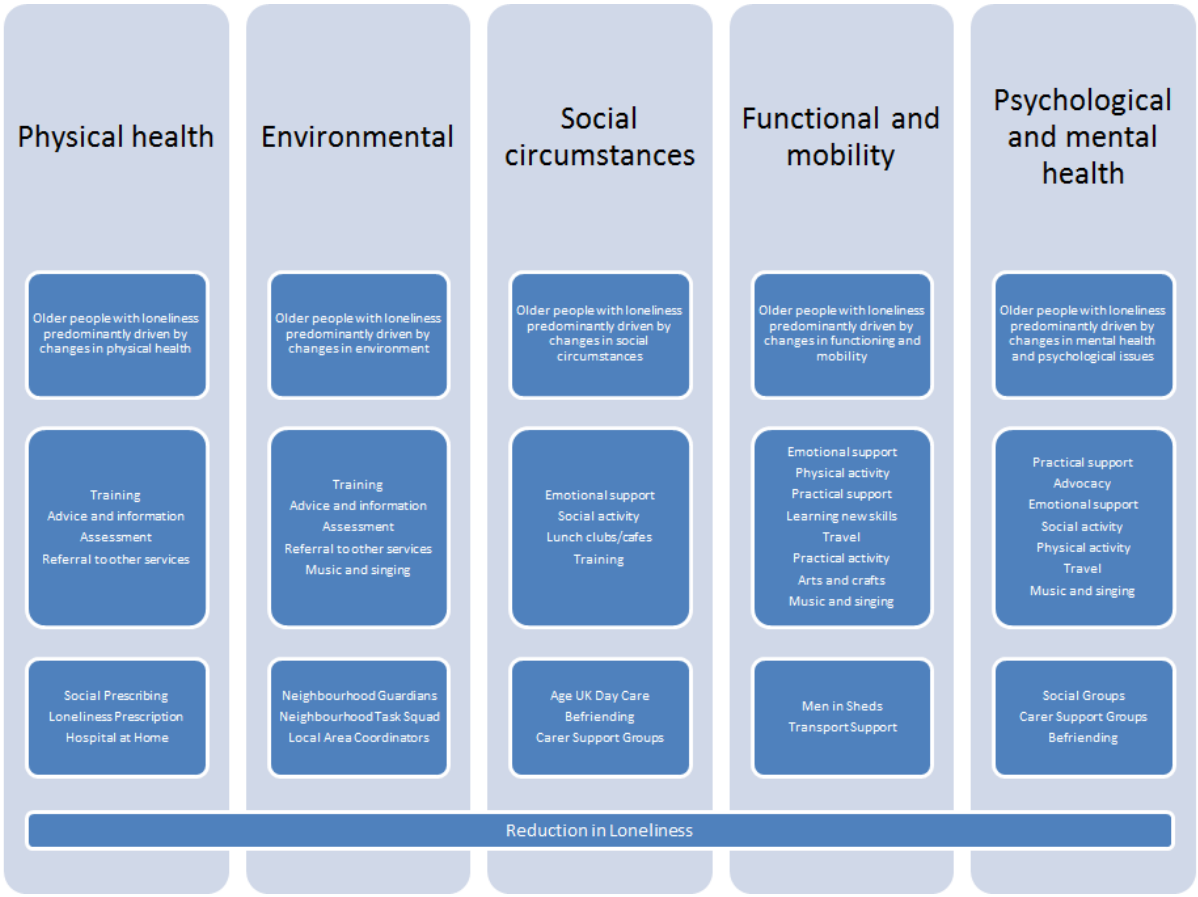
5. Data synthesis and development of programme theory

The aims and outcomes from the policy and strategy documents, database of interventions, themes of service user and provider interviews were combined allowing the data to be examined as a whole. This was done by prioritising causes of loneliness drawing upon both groups' perspectives according to which were more common in the interviews with service users. The categories (causes, outcomes, alleviation, services, barriers) and themes emerging from the interviews (physical, psychological, social, environmental, and functional) were then linked to specific types of interventions from locally

available service descriptions which had the potential to impact upon those causes of loneliness, or which had been directly identified by interviewees. Thus each theme was allocated a set of linked interventions which could help to achieve the desired outcome by alleviating the corresponding cause of loneliness.

From this thematic coding, Context, Mechanism, Outcome (CMO) style statements were created that could support service providers to identify which intervention might work for whom, and in which context (Figure 4). This shows the type of interventions required in order to address loneliness by themes of 'causation'. For those with loneliness driven by more than one theme, service providers may want to look for common interventions between the themes or use more than one approach.

Figure 4 CMO statements and associated types of services



Discussion

Summary

This work attempted to draw together multiple-evidence sources to understand efforts to improve adverse outcomes associated with loneliness in older people living in Leicester and Leicestershire. We employed service users and providers in order to develop diagrams relating to experiences of users/providers: showing how loneliness has a number of sources, but also develop perspectives that integrated views of loneliness from population/individual perspectives and make them meaningful using psychological/health theory, and develop this into a programme theory.

Local and national policy documents had many shared aims and objectives, including increasing awareness, training and education, relationship building and connecting and developing community resilience. Common elements of local schemes included social activities, emotional support, advice

and information, lunch clubs/cafés, new skills development, practical support and art/craft activity. There were few evaluations of services and these were methodologically limited (in keeping with the broader literature), so no robust conclusions about effectiveness could be drawn. The interview findings suggest some mismatch between the views of older people and service providers on how to access services and the types of services available. A disparity between older person/carer and professional views was evident: professionals discussed how older people were less able to adapt to change and embarrassed to ask for help when these were not issues raised by older people themselves. An integrative analysis approach allowed the creation of a guide for professionals on what sorts of interventions might be helpful for older people, depending upon their circumstances and perceived drivers of the individual's loneliness.

Strengths of the study

The strengths of this project include the multimethods approach, influenced by realist evaluation, which was well suited to the complex issue of loneliness. A large number of interventions in Leicester were catalogued to form an overview of services. The interviews with older people and service providers gave some similar and some different perspectives, both of which were informative.

Limitations of the study

It is possible that the services in Leicester/Leicestershire may not reflect those in other regions, although the commonality between the local and national strategy documents suggests this is unlikely. It was not possible to guide users of the programme theory as to which evaluation might be most *effective* given the absence of robust local evaluations, as well as relatively weak empirical evidence. Black and minority ethnic groups were under-represented in this study, partly due to similar research being conducted locally.

Links to existing literature

The causes and outcomes of loneliness from the older person and carer and professional perspectives in this study echoes and supports previous research into this area [20-24]. The approach taken in this study adds to the literature by addressing the call for theory-driven, multimethod research [25, 26]. This study has added further to the existing evidence base by exploring alleviation of loneliness and outcomes of services from the service user's perspective. We used data from many different sources to try and help service providers and commissioners fit services to particular issues. Further, the impact which physical health and function has on loneliness was a key issue for older people and carers. Addressing physical and functional barriers to accessing support should be a high priority for service commissioners and providers. If accessing services require the use of the internet, then older people will need additional support; similarly transport and cost are major barriers.

Implications for policy and practice

Health and social care professionals, including voluntary organisations, can use the CMO style statements shown here linked with the taxonomy of interventions in Appendix 2, to firstly assess the reason driving loneliness, and then offer potentially appropriate services. For health and social care professionals and service providers, it is important to consider the mechanism and the cost of accessing services for older people. Accordingly, policy makers need to focus on how older people with low incomes might access services. There needs to be more work done on access to services not only in rural areas, but also for disabled service users in any area. Although older people's views were represented in policy documents, much greater emphasis on listening to their views is required in future policy and strategy plans.

Implications for future research

Therefore, for researchers wanting to undertake similar work, more effort is required with minority ethnic groups and in other regions of the country. This initial programme theory needs further

refining, validation and empirical evaluation. We are conscious that loneliness is an issue that affects other groups as well as older people, so the methodologies described here may have wider utility. References were made to societal and community changes affecting loneliness, yet these are often poorly defined, and more historical and sociological work would be welcome.

This paper tried to break the system down into independently causal elements in order to identify the particular issues addressed by particular interventions; an alternative theoretical perspective might be to focus on the inherent complexity of the system. One aspect of such complexity might be to look for non-linearities (the non-additive impact of multiple causes or multiple interventions). For example, growing frailty may lead to greater isolation and thence to increasing frailty, or, conversely, the availability of affordable transport may support the use of other services and delay the impact of frailty. Such non-linearities might be important in understanding widespread loneliness: lonely people create more lonely people, leading at some level to a change of phase to pockets of loneliness in a widely lonely society. It might be useful to create simplified stylised models to investigate this. From a related point of view, loneliness is a network phenomenon, and hence *a fortiori* an emergent feature of a complex system. In theory therefore one could look at the ties that people have that support companionship and the ones that are missing that lead to loneliness. One can think of key interventions as those creating or supporting the more influential ties. More importantly, if one intervention supports one older person, it may become very costly to achieve scale. A more scalable policy might be to look for interventions that catalyse an avalanche effect in the network.

Conclusions

Loneliness is a complex issue with many causes and diverse outcomes. The causes and consequences of loneliness vary widely between individuals, so a personalised approach is required to identify the causes and potential solutions. The CMO statements emerging from this study provide some high

level principles or guidance that can help commissioners and providers to tailor interventions to the individual needs of service users. Further work is needed to evaluate services and assess outcomes achieved by service users.

References

1. Peplau L, Perlman D. Perspectives on loneliness. In: Peplau LA, Perlman D, editors. Loneliness: A sourcebook of current theory, research and therapy. New York: John Wiley and Sons; 1982. p. 1-18.
2. Holwerda TJ, Deeg DJH, Beekman ATF, van Tilburg TG, Stek ML, Jonker C, et al. Feelings of loneliness, but not social isolation, predict dementia onset: results from the Amsterdam Study of the Elderly (AMSTEL). Journal of Neurology, Neurosurgery & Psychiatry. 2014;85(2):135-42.
3. Her Majesty's Government. A Connected Society. A strategy for tackling loneliness - laying the foundations for change. 2018 2018 October. Report No.
4. Office of National Statistics. Measuring National Well-being: Insights into Loneliness, Older People and Well-being. 2015.
5. Tilvis RS, Laitala V, Routasalo PE, Pitkala KH. Suffering from loneliness indicates significant mortality risk of older people. J Aging Res. 2011 Feb 22;2011:534781.
6. Shiovitz-Ezra S, Ayalon L. Situational versus chronic loneliness as risk factors for all-cause mortality. Int Psychogeriatr. 2010 May;22(3):455-62.
7. Berkman LF, Syme SL. Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. Am J Epidemiol. 1979 Feb;109(2):186-204.
8. Drennan J, Treacy M, Butler M, Byrne A, Fealy G, Frazer K, et al. The experience of social and emotional loneliness among older people in Ireland. Ageing and Society. 2008;28(8):1113-32.
9. Forbes A. Caring for older people. Loneliness. BMJ. 1996 Aug 10;313(7053):352-4.
10. Segrin C, Burke TJ, Dunivan M. Loneliness and poor health within families. Journal of Social and Personal Relationships. 2012;29(5):597-611.
11. Shankar A, McMunn A, Banks J, Steptoe A. Loneliness, social isolation, and behavioral and biological health indicators in older adults. Health Psychol. 2011 Jul;30(4):377-85.
12. Ong AD, Uchino BN, Wethington E. Loneliness and Health in Older Adults: A Mini-Review and Synthesis. Gerontology. 2016;62(4):443-9.
13. Chang Q, Chan C, Yip P. A meta-analytic review on social relationships and suicidal ideation among older adults. Social Science & Medicine. 2017 (191):65-76.
14. Kuiper JS, Zuidersma M, Oude Voshaar RC, Zuidema SU, van den Heuvel ER, Stolk RP, et al. Social relationships and risk of dementia: A systematic review and meta-analysis of longitudinal cohort studies. Ageing Res Rev. 2015 Jul;22:39-57.
15. Boss L, Kang D, Branson S. Loneliness and cognitive function in the older adult: a systematic review. International psychogeriatrics. 2015 27(4):541-53.
16. Baker S, Warburton J, Waycott J, Batchelor F, Hoang T, Dow B, et al. Combatting social isolation and increasing social participation of older adults through the use of technology: A systematic review of existing evidence. Australasian Journal on Ageing. 2018;37(3):184-93.
17. Gale CR, Westbury L, Cooper C. Social isolation and loneliness as risk factors for the progression of frailty: the English Longitudinal Study of Ageing. Age and Ageing. 2018;47(3):392-7.
18. Stow D, Matthews F, Valtorta NK, Hanratty B, Collingridge Moore D. Loneliness as a risk factor for care home admission in the English Longitudinal Study of Ageing. Age and Ageing. 2018;47(6):896-900.
19. Dreyer K, Steventon A, Fisher R, Deeny SR. The association between living alone and health care utilisation in older adults: a retrospective cohort study of electronic health records from a London general practice. BMC Geriatr. 2018 Dec 5;18(1):269.
20. Wright-St Clair VA, Neville S, Forsyth V, White L, Napier S. Integrative review of older adult loneliness and social isolation in Aotearoa/New Zealand. Australas J Ageing. 2017 Jun;36(2):114-23.
21. Deckx L, van den Akker M, Buntinx F. Risk factors for loneliness in patients with cancer: a systematic literature review and meta-analysis. European journal of oncology nursing : the official journal of European Oncology Nursing Society. 2014 Oct;18(5):466-77.

22. Grenade L, Boldy D. Social isolation and loneliness among older people: issues and future challenges in community and residential settings. Aust Health Rev. 2008 Aug;32(3):468-78.
23. Stratton DC, Moore AJ. Fractured relationships and the potential for abuse of older men. J Elder Abuse Negl. 2007;19(1-2):75-97, table of contents.
24. Cohen-Mansfield J, Hazan H, Lerman Y, Shalom V. Correlates and predictors of loneliness in older-adults: a review of quantitative results informed by qualitative insights. Int Psychogeriatr. 2016 Apr;28(4):557-76.
25. Dickens AP, Richards SH, Greaves CJ, Campbell JL. Interventions targeting social isolation in older people: a systematic review. BMC Public Health. 2011 2011/08/15;11(1):647.
26. Pool M, Agyemang C, Smalbrugge M. Interventions to improve social determinants of health among elderly ethnic minority groups: a review. European journal of public health. 2017;27(6):1048-54.
27. Pawson R, Tilley N, Tilley N. Realistic evaluation.: Sage; 1997.
28. Greenhalgh J, Dalkin S, Gooding K, Gibbons E, Wright J, Meads D, et al. Health Services and Delivery Research. Functionality and feedback: a realist synthesis of the collation, interpretation and utilisation of patient-reported outcome measures data to improve patient care. Southampton (UK): NIHR Journals Library

29. Rogers PJ. Using Programme Theory to Evaluate Complicated and Complex Aspects of Interventions. Evaluation. 2008;14(1):29-48.
30. Sheaff R, Brand SL, Lloyd H, Wanner A, Fornasiero M, Briscoe S, et al. Health Services and Delivery Research. From programme theory to logic models for multispecialty community providers: a realist evidence synthesis. Southampton (UK): NIHR Journals Library

31. Big Lottery Fund. Available from: https://www.gov.uk/government/organisations/big-lottery-fund.
32. Wong G, Westhorp G, Manzano A, Greenhalgh J, Jagosh J, Greenhalgh T. RAMESES II reporting standards for realist evaluations. BMC Medicine. 2016 2016/06/24;14(1):96.