Making the economic case for investing in actions to prevent and/or tackle loneliness: a systematic review

A briefing paper

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Contents

Executive Summary 3

1. Why should we worry about loneliness? 6
2. Where does economics fit in? 6
3. How did we go about looking for studies? 8
4. What did we find? 8
5. How can we strengthen the evidence base? 12
6. References 14

Executive Summary

There are substantial costs to families, the public purse and society of loneliness; some of these costs potentially are avoidable. A systematic review was undertaken, firstly to better understand what is known about the cost effectiveness of interventions to prevent and/or tackle loneliness experienced by older people, and secondly to understand what types of methods and approaches have been used to cost and /or value impacts of interventions on loneliness. The review covered the last ten years; interventions needed to focus on individuals aged 55 and over, regardless of health or disability status, or on volunteers or family members supporting this population group. 20,108 records were initially identified and after filtering more than 50 papers were included in the review.

What is clear from our review is that it is possible to identify well conducted studies that have looked at the cost effectiveness of interventions to address aspects of loneliness. Several studies report strong levels of cost effectiveness and/or positive returns on investment. It is also clear however that these studies appear to be exceptional; overall there have been very few attempts to assess the economic benefits of addressing loneliness.

More than half of all evaluations that we have identified are set in the UK. Interventions in the review fall into three broad groups: befriending, both face to face and telephone services; participation in social and healthy lifestyle activities; and signposting/ navigation services that help identify and match individuals with activities that they find to be of interest.

In most studies loneliness was viewed a secondary outcome measure rather than the primary outcome measure to be used in economic evaluation. We were unable to identify any studies that reported incremental cost per change in loneliness score, measured using a validated instrument such as the University of California Los Angeles (UCLA) Loneliness Scale or the De Jong Gierveld Loneliness Scale, which measure changes in loneliness. The primary outcome in economic evaluations tends to be incremental cost per quality adjusted life year (QALY) gained as a result of a loneliness prevention / alleviation intervention.

Many different economic methodologies have been used in studies, but we can broadly distinguish three approaches: conventional economic evaluations (cost effectiveness and cost utility analyses), and two types of return on investment study: return on investment to the public purse and social return on investment studies. Most of the conventional economic evaluations are linked to specific individual evaluations and tend to report changes in quality

of life associated with intervention. Return on investment to the public purse studies tend to be linked to modelling studies that synthesise evidence on effects and costs from multiple sources.

Social return on investment studies employ a different specific methodology that starts with discussion with relevant stakeholders on why and how they believe an action will work; they then proceed to estimate the size of these effects and place a monetary value on them. Many of these monetary benefits do not relate to changes in use of health services or other resources but, for instance, more subjective concepts such as the value of developing new friendships. This does not mean that the approach is not useful, but it is a very different way of assessing costs and benefits to that typically used to make a case to health and social care commissioners in the UK, where there is a focus mainly on resource impacts and costs to the NHS, local government and sometime other public sector organisations.

Summarising the state of the economic evidence, the case for action on befriending initiatives was mixed, containing evaluations showing highly cost effective and highly cost ineffective interventions. There is also a mixed picture on the benefits of participation in social activities, ranging from cost saving actions to cost ineffective. Recent modelling work suggests that signposting / navigation services have the potential to be cost effective, with one analysis generating a very conservative positive return on investment of between £2 and £3 per £1 invested.

A number of actions can be taken to strengthen the evidence base on the cost-effectiveness of loneliness interventions:

- Research commissioners should encourage evaluations to include economic analysis
- Economic analyses should consider the impact of changes in loneliness not only on health but also other sectors, e.g. social care services, as well as society.
- Evaluations should consider identifying additional economic impacts on any volunteers delivering loneliness alleviation programmes
- Evaluations should consider reporting return on investment to the public purse in addition to costs per reduction in loneliness achieved
- Be conservative and cautious when using the social return on investment approach because of the uncertainty of costs.
- Evaluations should increase the focus on measures to increase social participation

- Evaluations should make use of modelling approaches to increase the evidence base
- Research is needed to better understand how loneliness scores can be mapped onto quality of life

1. Why should we worry about loneliness?

Over the centuries philosophers and writers have spoken about loneliness being a fundamental part of the human condition. It can be thought of as a subjective, unpleasant, and distressing phenomenon resulting from a discrepancy between an individual's desired and achieved levels of social relations (Perlman and Peplau, 1982). We all can expect to experience loneliness from time to time, but this does not mean that we can dismiss loneliness as being an issue of little importance. Chronic loneliness can have an major adverse impact on mental and physical health (Nyqvist et al., 2016).

Many studies, both in the UK and in other settings, point to the association between loneliness and depression (Steptoe et al., 2013, Forsman, Nyqvist and Wahlbeck, 2011). Loneliness is also a risk factor for higher rates of poor physical health, such as coronary heart disease and stroke (Valtorta et al., 2016). There is also some evidence of increased risk of premature death in people who are highly lonely: the Amsterdam Longitudinal Study of the Elderly, in a 19 year follow-up of individuals aged 65 to 84 reported that loneliness and depression were predictors of mortality, with men particularly affected (Holwerda et al., 2016). Similarly, a 22 year follow up study in France also reported excess levels of mortality in individuals who felt lonely (Tabue Teguo et al., 2016). There is also growing evidence that loneliness may increase the risk of dementia. One recent meta-analysis, pooling the results of 19 separate studies, suggested that the risk of developing dementia in people with high levels of loneliness was 1.58 times greater than for those who are not lonely (Kuiper et al., 2015).

2. Where does economics fit in?

There are many costs to individuals, their families and society that arise from poor health. As part of ongoing work evaluating the economic case for Reconnections, a service in Worcestershire that is working to reducing loneliness and social isolation, we estimated some of the potential costs of loneliness to health and social care services for a cohort of people aged over 65 (McDaid, Park and Fernandez, 2016). Conservatively we estimated that over a ten year period these costs could be in excess of £1,700 per person. Costs for older people who most severely lonely would be in excess of £6,000. If measures can be taken to reduce loneliness then potentially some of these costs might be avoided. So it is important to

determine what works in reducing or preventing loneliness. However, even if we know what works that does not necessarily mean that stakeholders will take action. There will always be difficult choices that have to be made about the way in which limited resources in public budgets are used. Thus it is also vital to be able to accurately estimate the resources required and costs of any measure to tackle loneliness and its consequences, and then to determine whether investing in such a measure represents value for money compared to other ways in which these resources could be used.

This is where economics can help. Economic evaluation comparing two or more intervention choices can be used to help answer this question. There are several different ways in which this can be done[1]; all economic evaluations measure costs in broadly the same way, but differ in the way they measure effectiveness. Cost effectiveness analyses compare changes on a specific outcome measure e.g. a loneliness scale between two or more different actions, thus allowing a comparison between different measures that specifically tackle loneliness. Cost utility analyses measures changes in quality of life, allowing a loneliness alleviation intervention to be compared with any action that also has a measurable impact on quality of life, e.g. receipt of health care services. Cost benefit analyses place a monetary value on the benefits of improved outcomes (in this case reduced levels of loneliness). This means that the value of reducing loneliness could be compared with any other way in which budget holders (within and outside of the health system) decide to spend public funds, e.g. on actions to improve educational outcomes or reducing crime. Other ways to assess economic impact include return on investment studies which compare the costs of any action with the costs that may be avoided as a result.

This briefing papers reports on a systematic review that looks at what we know about the economic case for tackling loneliness. It also critiques the different approaches used in these studies and considers how the evidence base might be strengthened.

[1] These types of economic evaluation will be described in more depth in a separate guide that is being produced for the Campaign to End Loneliness on measuring the costs and cost effectiveness of programmes that tackle loneliness or social isolation.

3. How did we go about looking for studies?

We searched a number of health and social science literature databases to identify studies that compare the costs of investing in an action to tackle / prevent loneliness with the costs that may be avoided as a result of intervention. We restricted this to the last ten years. Abstracts of more than 20,000 records were doubled screened. The full texts of potentially relevant studies were then obtained and assessed independently by two reviewers and a final decision on inclusion made. After initial screening the full texts of 238 papers were obtained; citations, links from relevant papers and responses to a call for evidence distributed by the Campaign to End Loneliness were also used to supplement the electronic search This led to more than 50 papers being included in the review.

4. What did we find?

Our review indicates that it is possible to identify well conducted studies that have looked at the cost effectiveness of interventions to address aspects of loneliness. Indeed, several of the studies identified report strong levels of cost effectiveness and/or positive returns on investment. However, it is also clear that these studies appear to be exceptional; overall there have been very few attempts to assess the economic benefits of addressing loneliness.

It is difficult to draw conclusions about the economic evidence because of the relatively limited economic analysis that has been undertaken in most of these studies. It is also very difficult to compare the results of different studies because of the variety of methods that have been used.

What has been evaluated?

More than 50% of the papers included in the review are about actions set in the UK. Papers from Australia, Canada, Finland, France, Ireland, Mexico, the Netherlands, Portugal, Sweden and the USA were also included. Interventions in the review fall into three broad groups: befriending, both face to face and telephone services; participation in social and healthy lifestyle activities; and signposting/ navigation services that help identify and match individuals with activities that they find to be of interest.

Where does loneliness fit in to these studies?

In most studies that we have identified, loneliness is viewed as a secondary rather than a primary outcome measure. Even where loneliness is seen as the primary outcome in the effectiveness part of the evaluation, the economic analysis does not tend to use loneliness specific outcomes to demonstrate a reduction in loneliness. We were unable to identify any studies that report incremental cost per change in loneliness score, measured using a validated instrument such as the University of California Los Angeles (UCLA) Loneliness Scale or the De Jong Gierveld Loneliness Scale.[2] This is despite the fact that we identified many studies that do use these measures. Instead the primary outcome measured in the economic evaluations we identified tends to be incremental cost per quality adjusted life year (QALY) gained compared to care / action as usual. It is the principal measure that the National Institute for Health and Care Excellence (NICE) in England uses to determine whether any public health or health care intervention is considered to be cost effective and thus more likely to be recommended for use by health and social care service commissioners. Over time it has become a convention that if the cost additional QALY gained is no more than £20,000 (public health) or £30,000 (health care) then an intervention is likely to be considered cost effective without great controversy. On one level therefore it makes sense to use the QALY as it takes account holistically of changes in physical and mental health functioning and is accepted by service commissioners. However the QALY has not been specifically designed to pick up changes in loneliness levels and may not therefore fully capture the benefits of any reduction in loneliness for health, putting loneliness interventions at a disadvantage compared to interventions that directly address health.

Types of economic approach taken

Many different methodologies have been used, but we can broadly distinguish three approaches: conventional economic evaluations (cost effectiveness and cost utility analyses), and two types of return on investment study: return on investment to the public purse and social return on investment studies. Most of the conventional economic evaluations are linked to specific individual evaluations and tend to report changes in quality of life associated with intervention. Return on investment to the public purse studies tend to be linked to modelling studies that synthesise evidence on effects and costs from multiple sources.

[2] For more information on measuring loneliness see the Campaign's guide entitled 'Measuring Your Impact on Loneliness in Later Life'.

Social return on investment (SROI) studies employ a specific methodology that starts with discussion with relevant stakeholders on why and how they believe an action will work; they then proceed to estimate the size of the effects and place a monetary value on them. Many of these monetary benefits do not relate to changes in use of health services or other public sector resources but rather on more subjective concepts such as the value of developing new friendships. This does not mean that the approach is not useful, but it is a very different way of assessing costs and benefits to that typically used to make a case for health and social care commissioners in the UK, where there is a focus mainly on resource impacts and costs to the NHS, local government and sometime other public sector organisations.

Evidence on different types of intervention

Befriending

Looking broadly at befriending initiatives, evidence on their cost effectiveness was mixed, the most encouraging evidence was from a well designed trial in the Netherlands of an intervention to provide friendship to recently bereaved widow/ers, which reported a cost per quality adjusted life year gained of less than £6,390 – well under the conventional threshold of £20,000 per QALY gained (Onrust et al., 2008). Even when assumptions around the level of effectiveness and costs were varied there was still a 70% of the intervention being cost effective. In contrast a befriending initiative for family carers of people with dementia in England was found to be highly cost ineffective (Charlesworth et al., 2008).

We can see from modelling work that there is already a good case for investing in an intergenerational initiative like the 'GoodGyms' programme bringing together runners and older non-runners. It also has a cost per QALY gained of less than £8,000 and a return on every £1 invested of up to £4.56 but this is conservative as the analysis only looks at the health and economic benefits for runners; it does not consider the additional benefits if loneliness is reduced (Ecorys, 2017). We identified a potential return on investment estimate for one befriending scheme of up to £24 for every £1 invested; such high returns though must though be treated with great caution; in this case these estimates are based on small scale qualitative data and many different assumptions on the potential benefits of befriending rather than actual impacts on health or other service utilisation (McGoldrick, Barrett and Cook, 2017). A community café targeted at lonely and isolated people was also evaluated using the SROI approach. This estimated a return of more than £8 generated for every £1 invested (Social Value Lab, 2011).

Participation in social and healthy lifestyle activities

There is also a mixed picture on the benefits of participation in social activities; this needs careful interpretation. An often cited Finnish study which looked at the impact of participation in a range of group activities by lonely and isolated older people reports that costs avoided were greater than the costs of delivering the intervention (Pitkala et al., 2009). This study did not however specifically measure any changes in loneliness. However, another well conducted English study looking at the impacts of participation in a programme to promote better health and wellbeing, found that it reduced costs but led to poorer quality of life outcomes than routine access to health advice (Mountain et al., 2017). However, the intervention was designed to improve mental wellbeing rather than tackle loneliness and loneliness was only a secondary rather than primary outcome measure.

Signposting / navigation services

The evidence on the economic case for signposting is encouraging, although it should be stressed that effectiveness data are taken from a few very small observational studies. Recently we modelled the return on investment from a signposting to various activities intervention targeted at people who self identify as lonely (McDaid, Park and Knapp, 2017). This reported a modest but positive return on investment of £1.26 for every £1 invested over a five year period. Again careful interpretation is needed; in this particular case we were asked by the research commissioners to only include benefits related to better mental health. As we noted in that report this only provides a partial picture on the benefits of the service. When we included a range of benefits linked to improved physical health, as well as benefits from any potential delay in cognitive decline, then the return on investment in the model comfortably, but still very conservatively, would under different assumptions vary between £2 and £3 per £1 invested. The costs avoided, and thus return on investment, would be considerably higher if any signposting service were successfully targeted at people experiencing more severe levels of loneliness.

5. How can we strengthen the evidence base?

A number of steps can be taken to strengthen the evidence base on the cost effectiveness of actions to address loneliness. While some of these could be implemented straight away others are dependent on capacity development for future evaluation.

Embed economic analysis in evaluation

Where feasible research commissioners should stipulate that evaluation of any action to tackle loneliness should include economic analysis. Including an economic analysis from the very inception of an evaluation will increase the likelihood that all relevant resource use and resource impacts will be assessed, while ensuring that the economic evaluation can include a measure of change in loneliness.

Encourage economic analysis to consider the impact of changes in loneliness not only on health but on other sectors, as well as for society.

Actions to tackle loneliness may not always be funded by the health system. In many cases, for example, they may be funded by local government; it is important to measures impacts that are relevant to the sectors that fund these interventions. One example of this might be for an evaluation to look at how changes in loneliness may or may not be associated with the risk of frailty and the need for use of local authority social services. These recommendations will be made in 2018 with the new Campaign tool on cost-effectiveness.

Identify additional impacts for volunteers delivering loneliness alleviation programmes

It is also helpful to identify benefits and costs to volunteers and family members who typically may deliver actions to address loneliness. We have highlighted the health and economic benefits to runners who befriended older people; there are many other potential examples of this, such as potential benefits for volunteers who may visit older people in residential care homes. Older people who initially may be recipients of support can themselves become volunteers supporting others in their local communities. An economic value can also be attached to health improvements in volunteers, as well as on the amount of time spent volunteering.

Report return on investment to the public purse in addition to costs per improvement in loneliness achieved

Reporting return on investment to the public purse in addition to costs per improvement in loneliness or quality of life achieved can help in making the case to commissioners. Return on investment estimates were central to recent work that has been undertaken to measure the benefits of and investment in mental health promoting interventions in England, including work on loneliness (McDaid, Park and Knapp, 2017). It is also helpful to specify the time period over which this return on investment can be achieved.

Be conservative in assumptions made using the SROI methodology

If reporting SROI, in addition to a narrower return on investment mainly focused on public sector service costs alone, it is still prudent to be conservative in assumptions made about wider societal impacts. Being conservative may be seen as more credible with decision makers, who otherwise may be highly sceptical about attaching monetary benefits to many different aspects of loneliness alleviation.

Increase the focus on evaluating the benefits of measures to increase social participation

Our review has focused on actions to reduce loneliness, but it will also be important to focus on what is known about the economic case for mechanisms that encourage participation in social activities; these may not directly address issues of social isolation but they potentially represent the other side of the coin and present solutions to the challenges of loneliness.

Make use of modelling approaches to increase evidence base

If there is evidence available on the effectiveness of different interventions to address loneliness, then it is possible to retrospectively undertake an economic analysis. This firstly involves estimating the costs of delivering any intervention and then bringing this together with available evidence on effectiveness and potential resource consequences using decision modelling techniques. Studies on the costs of loneliness can help inform these models. Models can also be used to vary assumptions on the level of effectiveness and costs of action to see what impact this is likely to have on overall costs. If an intervention still appears to be cost effective and/or generate a positive return on investment even when the effectiveness gains are modest this can give a considerable degree of reassurance to policy makers that any investment in actions to combat loneliness would be sound.

Better understand how loneliness instruments and quality of life instruments can be linked

A final research recommendation is to assess the correlation between scores on major loneliness instruments, e.g. the UCLA and De Jong Gierveld Scales and quality of life scores using the EuroQOL EQ_5D or SF-36. If a correlation between scores can be established then it may be possible to transform loneliness scores into a comparable score on these quality of life measures. This may help considerably in making the case to health policy makers and service commissioners on the value of preventing and alleviating loneliness.

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