Loneliness monetisation report

Analysis for the Department for Digital, Culture, Media & Sport

June 17, 2020

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Executive Summary

We estimate the costs associated with loneliness stemming from impacts on subjective wellbeing, health and productivity. These are estimated using best-practice techniques endorsed by the HM Treasury Green Book.

For impacts on subjective wellbeing, estimates are derived using regression analysis of cross-sectional data from the Community Life Survey and Understanding Society obtained through the UK Data Service.

Using the Wellbeing Valuation method, we convert our estimates into their monetary equivalents – that is, values which represent the negative impact that loneliness has, each year and in monetary terms, on an individual’s wellbeing.

We find the wellbeing value of severe loneliness1 to be relatively large: a conservative estimate is of at least £9,537 per person per year. The main caveats of our model are discussed, and we make a strong case for carrying out additional analysis upon release of longitudinal data.

Lastly, we look at the existing literature on the relationship between loneliness and health and loneliness and productivity in the workplace to provide additional cost estimates.

Collectively, the wellbeing, health and work productivity cost associated with severe loneliness is approximately £9,900 per person year.

The figures provided here can be applied to a general lonely cohort aged 16+ and can be used to measure the impact of mild, moderate or severe loneliness.

### Table 1: The impacts of loneliness per person per year in monetary terms among a general lonely cohort (age 16+)

<table>
<thead>
<tr>
<th>Impacts:</th>
<th>Lack of, to mild loneliness</th>
<th>Mild to moderate loneliness</th>
<th>Moderate to severe loneliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Evidence NA</td>
<td>Evidence NA</td>
<td>£109</td>
</tr>
<tr>
<td>Productivity</td>
<td>Evidence NA</td>
<td>Evidence NA</td>
<td>£330</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>£6,429</td>
<td>£8,157 to £9,537</td>
<td>(at least) £9,537</td>
</tr>
<tr>
<td>Total</td>
<td>£6,4292</td>
<td>£8,157 to £9,5372</td>
<td>(at least) £9,976</td>
</tr>
</tbody>
</table>

1 Mild loneliness refers to ‘hardly ever’, moderate to ‘occasionally’ or ‘some of the time’ and severe to ‘often’ or ‘always’ lonely.

2 This excludes health and productivity impacts, for which there is not sufficient evidence for impacts of less than moderate loneliness.
1 Current evidence on the cost of loneliness

- In 2018, the government announced a *strategy for tackling loneliness*, laying the groundwork for further evidence collection and leading to a comprehensive action plan.

- There is scarce *up-to-date evidence* on the impact of loneliness on *wellbeing* in the UK, including on life satisfaction. Loneliness cannot be manipulated experimentally, hindering efforts to fully grasp the magnitude of its adverse impacts on society. However, this area is gaining increasing attention by researchers as well as by policy makers.

- The contribution this study wishes to make to the field is to introduce non-market monetisation methods, enabling monetary values to be attached to the negative impact of loneliness. This will facilitate the assessment of interventions aimed at alleviating loneliness.

- It is clear that the effects of loneliness are pervasive and that few areas of daily life are not affected by it. In an effort to improve understanding of the phenomenon, we have broadened the research scope to monetise the impacts of loneliness on wellbeing, health and work productivity.
2 Measuring loneliness

- In accordance with the government’s Loneliness Strategy, loneliness is defined here as “a subjective, unwelcome feeling of lack or loss of companionship. It happens when we have a mismatch between the quantity and quality of social relationships that we have, and those that we want”.

- In 2018, the Office for National Statistics (ONS) released guidance on the measurement of loneliness. Their recommendations are summarised in Table 1 and rely on indirect and direct measures. Indirect questions are based on the UCLA Loneliness scale, assessing how often a person feels disconnected from others.

- Table 3 summarises the main UK surveys currently measuring loneliness. These use direct and indirect measures, often using different response scales. Accessing these datasets allows, among other uses, to produce nationally representative summary statistics and assess the impact of loneliness on wellbeing.

Table 2. ONS recommended measures of loneliness for adults.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Items</th>
<th>Response categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indirect</strong></td>
<td>The three-item UCLA Loneliness scale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. How often do you feel that you lack companionship?</td>
<td>Three-level</td>
</tr>
<tr>
<td></td>
<td>2. How often do you feel left out?</td>
<td>Three-level</td>
</tr>
<tr>
<td></td>
<td>3. How often do you feel isolated from others?</td>
<td>Three-level</td>
</tr>
<tr>
<td><strong>Direct</strong></td>
<td>How often do you feel lonely?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Recommended) OR Three-level</td>
<td></td>
</tr>
</tbody>
</table>

Response scales: three-level and five-level.

1. Hardly ever/never 2. Some of the time 3. Often

Table 3. Large UK surveys measuring loneliness.  

<table>
<thead>
<tr>
<th>Survey</th>
<th>Author</th>
<th>Loneliness measure</th>
<th>Frequency</th>
<th>Structure</th>
<th>No. of waves</th>
<th>Target population</th>
<th>Sample size</th>
<th>Interview mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Life Survey (CLS)</td>
<td>DCMS</td>
<td>Direct (five level)</td>
<td>Annual</td>
<td>Cross-sectional</td>
<td>7 (since 2013)</td>
<td>16+ adults in England</td>
<td>~10,000 responses per wave</td>
<td>Mix of face-to-face, online or pen and paper</td>
</tr>
<tr>
<td>Understanding Society (USoc)</td>
<td>ESRC</td>
<td>Direct (three level and indirect)</td>
<td>Annual</td>
<td>Longitudinal</td>
<td>9 (since 2010, loneliness since 2019)</td>
<td>16+ adults in the U.K. (not incl. youth survey)</td>
<td>~39,000 households per wave (all household members)</td>
<td>Face-to-face (with self-completion module)</td>
</tr>
<tr>
<td>English Longitudinal Study of Ageing (ELSA)</td>
<td>NIA and ESRC</td>
<td>Direct (three level and indirect)</td>
<td>Annual</td>
<td>Longitudinal</td>
<td>8 (since 2002)</td>
<td>50+ adults in England</td>
<td>~11,000 respondents per wave</td>
<td>Face-to-face (with self-completion module)</td>
</tr>
</tbody>
</table>

*Additional surveys committed to measuring loneliness are the National Travel Survey, the English Housing Survey, the Active Lives Survey, the Active Lives Survey, the Health Survey for England, Taking Part and the Tri-servics families continuous attitudes survey.*
3 Who is most affected by loneliness?

The proportion of individuals who report being ‘often or always lonely’ is highest among:

- **People aged 30 or under,**
- **Women,** across most age groups,
- **People living in urban areas,**
- **People who are separated from their husband, wife or civil partner,**
- **People with poor health,** and
- **unemployed people.**

Findings mentioned above make use of weighted Community Life Survey data from 2018-2019 and have been corroborated with Understanding Society data from Wave 9 (2018-2019).

**Figure. 1. Reported loneliness over the life course for men and women**

**Figure. 2. Reported loneliness by general health.**

**Figure 3. Reported loneliness by economic status.**
4 The Wellbeing Valuation Method

Alleviating loneliness has undeniable effects on individual wellbeing\(^5\), and interventions to tackle loneliness are often required to report the benefits they have brought about. Our analysis aims to quantify the wellbeing impacts of alleviating loneliness and convert these into monetary terms using the Wellbeing Valuation approach.

**How does Wellbeing Valuation work?**

The three steps to conducting Wellbeing Valuation are detailed below at a high level, with a more detailed methodology also made available\(^6\):

- Access datasets.
- Quantify the wellbeing impact associated with feeling lonely using econometric models – that is, *the marginal impact on life satisfaction*.
- Identify the change in income that would be needed to achieve the same wellbeing impact.

By doing so, this approach expresses the wellbeing impact of feeling lonely in monetary terms. This value enables comparison between interventions in a way that is consistent with the principles of cost-benefit analysis.

**Measuring wellbeing**

Applying this method requires assessing the impact of an outcome on wellbeing. Life satisfaction, a key national indicator, enables its application and is an appropriate measure of subjective wellbeing:

“*Overall, how satisfied are you with your life nowadays?*”

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Completely</td>
</tr>
</tbody>
</table>

**How to interpret the values?**

These values represent the wellbeing uplift to an individual from alleviating loneliness – using money as a common metric. They are neither an actual financial return nor money in a participant’s pocket nor a saving to the state.

**Figure 4. The three stages of Wellbeing Valuation.**

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How does Wellbeing Valuation compare to other methods?

Wellbeing Valuation improves on methods that ask people how much they would be willing to pay for an outcome by using data reflecting people’s *actual experiences* as they live them. It is one of the fastest-growing areas in social impact measurement and is consistent with OECD recommendations and HM Treasury Green Book guidelines.

Among its many applications, it is widely used to appraise the social benefits of interventions in housing, transport, heritage and utilities.

5 The Wellbeing impact of loneliness

Identifying the impact of loneliness

- We use multivariate linear regression to assess the impact of loneliness on life satisfaction, with weights to ensure results are representative of the UK population.

- Our models use controls for person-specific confounding factors that also affect life satisfaction. These also allow combining wellbeing impacts with wider impacts. The list of controls is derived from a review of the key drivers of subjective wellbeing.

- For robustness, we compare cross-sectional findings from two datasets: Community Life Survey and Understanding Society. A full econometric specification of our models is available in a technical annex.

Causation in loneliness research

- Research on loneliness is often hampered by its link to depression – this is particularly true for those who are ‘often/always lonely’.

- It can be difficult to disentangle whether loneliness causes low wellbeing, or whether low wellbeing causes people to feel lonely. The inability to address this two-way relationship is a limitation of this study.

- Access to multiple waves of UK longitudinal data will enable a more thorough accounting of these issues. In the meantime, we reflect these considerations in our interpretation of the results.

*Longitudinal analysis will be possible when Wave 10 of Understanding Society is released, which is estimated to be released in November 2020.*
Figure 5. The wellbeing impact of loneliness

- We find that loneliness, whether infrequent or persistent, has large and significant negative impacts on wellbeing.

- As the frequency of loneliness increases, its detrimental effect tends to be greater and greater.

- The impact of severe loneliness (often/always) is disproportionately large and may reflect well-known issues in causation discussed above. To be conservative, we can state that the impact of severe loneliness is equivalent to at least £9,537 per person per year (although it may be as high as £17,043).
Despite the variation in response scales across surveys, our findings remain robust with results using the Community Life Survey (£9,537) closely matching those using Understanding Society (£9,463).

Moreover, on average, experiencing loneliness is associated with worse wellbeing impacts than being unemployed or friendless, but is not as detrimental as having a long-term debilitating illness. The estimates of other impacts above are only provided to facilitate like-for-like comparisons and are not to be applied for wellbeing valuation. A guide on applying these values in practice is provided further down in this report.
7 The health impacts of loneliness

- Severe loneliness has a major adverse effect on health. It is considered a risk factor for depression, heart disease, stroke and dementia – among other conditions.\(^7\)
- In fact, the effect of loneliness and isolation on mortality is comparable to the impact of obesity and smoking cigarettes.\(^8\)
- We summarise the health costs associated with severe loneliness from two sources: those accrued through an increased use of medical resources (a cost to the NHS, local authorities and relatives) and those accrued to employers through a higher number of work days lost.

The impact of loneliness on healthcare costs

- We base our estimates on the meta-analysis and modelling carried out by McDaid, Bauer and Park at the Personal Social Services Research Unit of LSE.\(^1\) Results are applicable to individuals in the general population aged 65 or over.
- In their model, the authors assess the additional healthcare costs specifically attributable to severe loneliness from various sources: GP visits, hospital admissions, emergency services and other types of outpatient care.
- Those who are afflicted by loneliness most of the time require £6,000 in additional healthcare costs over 10 years, averaging at £600 per year (2015 prices). This amounts to £672 in 2019 prices.
- Based on wave 9 of Understanding Society, we estimate that 15% of people who are often lonely are 65+.
- Assuming no additional costs before the age of 65, this results in a conservative average cost of £100 per year per lonely person.

Aggregating health and wellbeing costs

- When aggregating impacts, we take steps to ensure we are not double-counting the same effects.
- By adjusting the wellbeing model for long-term conditions as well as a subjective health rating, we strip out the impact that loneliness has on wellbeing via health. This allows the impacts to be added.
- The costs described in this section are direct economic costs as opposed to monetised wellbeing impacts which allows adding them.

\(^7\) Making the case for investing in actions to prevent and/or tackle loneliness: a systematic review. Briefing paper. McDaid, Bauer and Park (2017).

The impact of loneliness on days of work lost

• Estimates are based on research by the New Economics Foundation (NEF) on the costs of loneliness to UK employers.\(^9\)

• The authors estimate the proportion of days’ work lost due to depression, heart disease and stroke attributable to severe loneliness. This is equivalent to £21 per person per year in economic output (2019 prices).

• Based on Understanding Society data, only 45% of those who are often lonely are in the workforce. Therefore the average cost per lonely person is of £9 per year.

8 The productivity impacts of loneliness

• Loneliness affects individuals at all stages of life and impacts how people are able to perform at work. Even in crowded work environments, individuals may feel disconnected from their co-workers.

• It has been shown that employees who feel lonely in the workplace tend to have lower job performance, are less committed to their company and appear less approachable to their colleagues.10

• We can attribute a monetary value to the decrease in productivity by measuring the associated reduction in economic output.

The impact of loneliness on work productivity

• Estimates are based on research by the New Economics Foundation (NEF) on the costs of loneliness to UK employers.2

• In a first stage, the authors estimate the impact of experiencing severe loneliness (‘most or all of the time’) on job satisfaction.

• In a second stage, they estimate the relative impact that job satisfaction has on productivity. This impact is then associated with a meta-analysis of studies to produce a range of likely productivity impacts.

• NEF estimate that an employee experiencing loneliness is 1.3% less productive than those who do not feel lonely.

• In 2019 prices, this is equivalent to £730 of gross value added per year on average for all sectors.

Based on wave 9 of Understanding Society, only 45% of those who are often lonely are in the workforce. Therefore the average cost is of approximately £330 per year per lonely person.

9 Applying these values in practice

Who can these values be applied to?

- The values set out in this report can be applied to a general lonely cohort aged 16+, regardless of their age or working status (they are ‘one size fits all’ values).

- Although there is only evidence on health impacts for those over 65 and although productivity impacts are only relevant for those in the workforce, the adjustments applied to these values ensure that they are applicable to the average person afflicted by loneliness.

And to what intensity of loneliness?

- These values can be applied to measure the value of alleviating mild-to-severe loneliness – as summarised in Table 4 below.

- If moving across several levels (e.g. from severe to mild), then the wellbeing impacts can be added up.

- Aggregation of loneliness impacts is possible only for moderate-to-severe levels of loneliness, as evidence of the health and productivity costs of less-than-severe loneliness is scarce.

Table 4: The health, productivity and wellbeing impacts of loneliness

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Lack of, to mild loneliness</th>
<th>Mild to moderate loneliness</th>
<th>Moderate to severe loneliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Evidence NA</td>
<td>Evidence NA</td>
<td>£109</td>
</tr>
<tr>
<td>Productivity</td>
<td>Evidence NA</td>
<td>Evidence NA</td>
<td>£330</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>£6,429</td>
<td>£8,157 to £9,537</td>
<td>(at least) £9,537</td>
</tr>
<tr>
<td>Total</td>
<td>£6,429&lt;sup&gt;11&lt;/sup&gt;</td>
<td>£8,157 to £9,537&lt;sup&gt;12&lt;/sup&gt;</td>
<td>(at least) £9,976</td>
</tr>
</tbody>
</table>

<sup>11</sup> This excludes health and productivity impacts, for which there is not sufficient evidence for impacts of less than moderate loneliness.

<sup>12</sup> This excludes health and productivity impacts, for which there is not sufficient evidence for impacts of less than moderate loneliness.
Mild loneliness refers to ‘hardly ever’, moderate to ‘occasionally’ or ‘some of the time’ and severe to ‘often’ or ‘always’ lonely. Evidence of the productivity and health impacts of less-than-severe loneliness is scarce and therefore not included in the aggregation of loneliness impacts.

A more detailed explanation is available in the technical annex, including guidance on how to tailor these values to more specific groups.

**Example: loneliness alleviation programme**

- We may use the valuations described in this report to measure in monetary terms the impacts of a large-scale befriending programme to alleviate loneliness among a general population cohort of 1,000 adults aged 16+.
- **Surveys** including the 5-response-scale loneliness question (see Table 2, page 3) may be administered before and after the intervention to measure the number of participants who have experienced decreases in loneliness.
- We suggest applying the most conservative estimate to each type of change where the suggested monetised value is a band.

<table>
<thead>
<tr>
<th>Number of participants</th>
<th>Change in loneliness</th>
<th>Value per year before discounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>No change in loneliness</td>
<td>£0</td>
</tr>
<tr>
<td>250</td>
<td>Went from ‘severe’ to ‘moderate’ loneliness</td>
<td>£2,494,000 (=250*£9,976)</td>
</tr>
<tr>
<td>250</td>
<td>Went from ‘severe’ to ‘mild’ loneliness</td>
<td>£4,533,250 (=250*[£9,976+£8,157])</td>
</tr>
<tr>
<td>Total: 1,000 participants</td>
<td></td>
<td>£7,027,250</td>
</tr>
</tbody>
</table>

- In the absence of a programme control group, we suggest as per additionality guidelines\(^{(a)}\) to use a deadweight factor to discount the total figure. This factors in that a proportion of those who were helped by the scheme may have experienced a loneliness reduction anyway. Based on guidelines for community and social interventions, it is recommended to remove 19% from the total amount.
- This amounts to total benefits of **£5,692,073** (=£7,027,250*[1-0.19]) attributable to the scheme, which may then be compared to the total project costs.

\(^{(a)}\) Homes and Communities Agency, Additionality Guide, Fourth Edition (see Table 3.3)
10 Conclusions

- We find that the negative impact of severe loneliness on individuals is very large: approximately **£9,900 per year for each afflicted person**.

- For policy and intervention appraisal, these values can be applied to the alleviation of loneliness (severe to mild) for any individual from the general population aged 16+.

- Of this total estimate for severe loneliness:
  
  I. **£9,537** represents the negative impact on the wellbeing of the lonely individual. This estimate was derived using the Wellbeing Valuation method to convert the impact of loneliness on life satisfaction into a monetary equivalent. These estimates are derived from analysis using data collected through the Community Life Survey and validated using Understanding Society.

  II. **£109** represent the cost to healthcare providers and employers because of direct added medical expenditure and days of lost work due to ill health brought about by loneliness.

  III. **£330** represent the loss in productivity due to loneliness and is a cost borne by employers, reflecting that it also negatively affects performance in the workplace.

- A **caveat** to these findings is that they may be overly conservative. For instance, they use lower bounds of wellbeing impacts and do not consider health impacts on younger people due to the lack of robust evidence. Further analysis using longitudinal data available at the end of 2020 will allow a more robust assessment. Further research and data collection could also improve the estimates of health and productivity impacts.

- We encourage wide-spread application of these values in the policy arena, which will facilitate the comparison and assessment of interventions aimed at loneliness alleviation.