

**Cambridge** Centre  
for Housing &  
Planning Research

# Evaluation of new lighting intervention schemes being undertaken by benevolent trusts

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# 1. Introduction

This research was funded by the Thomas Pocklington Trust and carried out by the Cambridge Centre for Housing and Planning research. It evaluated the impact of lighting improvements made to the homes of people with sight loss living in London and the North West of England during 2013-15.

## Background

Meeting the needs of an ageing population is one of the key issues affecting both the housing sector and wider social care agenda in the UK at the present time. Increasing numbers of older people wish to remain in their home for as long as possible, and this means there is a growing need for support and adaptations in the home. Sight loss is one difficulty that many older people encounter, and the links between sight loss and other health difficulties, in particular falling in the home, are well-documented<sup>1</sup>. Previous research carried out for the Thomas Pocklington Trust highlighted the need for more evidence on outcomes of lighting interventions for partially sighted people<sup>2</sup>.

In 2012 Pocklington began working with two other charities who were willing to fund pilot schemes of lighting interventions to improve the quality of lighting in the homes of people living with sight loss. There were:

- Friends of the Elderly – a charity working with older people in need
- Blind Veterans UK – a charity working with veterans of all ages with sight loss.

Each of these charities already worked with older people. The pilot interventions were in different areas and with people with differing needs. The Blind Veterans UK intervention worked in the North West of England with people who had served in the UK forces and were living with sight loss, whilst Friends of the Elderly worked with a range of older people in London, some of whom had sight loss.

The people who were selected to take part in the scheme were all living in their own home with some degree of sight loss. It was envisaged that a total of 24 older people living in their own homes will benefit from the two interventions.

The aim of this evaluation was to analyse the impact of the interventions generally on quality of life and specifically on reduction of falls amongst recipients.

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<sup>1</sup> See [www.ageuk.org.uk/latest-press/poor-vision-leads-to-falls-for-270000-over-60s](http://www.ageuk.org.uk/latest-press/poor-vision-leads-to-falls-for-270000-over-60s)

<sup>2</sup> Clarke, A (2011) Cost effectiveness of lighting adaptations, The Thomas Pocklington Trust

## Methods

The research methods comprised:

- Interviews with managers at each of the two funding charities
- Interview with the technician who carried out the light assessments
- Face to face interviews in both sites with a total of 29 people who had been selected for the lighting installations comprising all six of those in London (recruited via Friends of the Elderly) and 23 of the 28 participants in the North West of England (recruited via Blind Veterans UK), carried out between December 2012 and June 2013.
- Follow up interviews with these same people approximately six months after the lighting installations had been completed. 21 of the 29 people originally interviewed were contacted. Of the others, two died before the improvements could be made, two died after having the improvements but before the six month follow up interview could be conducted, one declined the lighting improvements, one lost contact with the scheme so did not have the improvements, one was deemed only in need of light bulbs and one was still waiting for the improvements at the end of the evaluation.

## 2. Findings

### Who received the lighting improvements?

A total of 34 people with sight loss were originally recruited by the two charities involved to have their homes assessed for lighting improvements during 2012 and 2013 – six in London, recruited by Friends of the Elderly, and 28 in the North West, recruited by Blind Veterans.

Those in the North West were recruited via a mailshoot to all of Blind Veteran's 192 members in the Lancashire area. A total of 28 people requested lighting improvements. Friends of the Elderly meanwhile approached people who they worked with individually and who their records showed had sight loss.

Of the 34 homes assessed, all were found to be suitable for lighting improvements which would benefit their occupants. Three people (two in London and one in the North West) subsequently declined the improvements and three others (all in the North West) died before the installations could be completed. This left 28 participants who went on to have their lighting assessed and improved, one of which was still to be arranged at the time of finishing the evaluation (March 2015).

Twenty nine of the 34 people originally assessed for lighting improvements were interviewed. There were significant differences between those recruited via the two charities. Those recruited in London via Friends of the Elderly were all living alone, in their 70s, mostly in rented housing and five out the six were female. In contrast those recruited by Blind Veterans UK were predominately male, half of whom were living with a partner and most of whom were in their 80s or 90s, as shown below in Table 1.

**Table 1: Profile of people assessed for lighting improvements**

| <b>Attribute</b>        | <b>Category</b>                         | <b>Friends of the Elderly</b> | <b>Blind Veterans UK</b> | <b>Total</b> |
|-------------------------|---|-------------------------------|--------------------------|--------------|
| Location                | London                                  | 6                             | -                        | 6            |
|                         | North West England                      | -                             | 23                       | 23           |
| Gender                  | Male                                    | 1                             | 19                       | 20           |
|                         | Female                                  | 5                             | 4                        | 9            |
| Age                     | 60-69                                   | 0                             | 1                        | 1            |
|                         | 70-79                                   | 6                             | 2                        | 8            |
|                         | 80-89                                   | 0                             | 13                       | 13           |
|                         | Over 90                                 | 0                             | 6                        | 6            |
| Housing tenure          | Social rented                           | 4                             | 4                        | 8            |
|                         | Private rented                          | 0                             | 1                        | 1            |
|                         | Owned                                   | 2                             | 18                       | 20           |
| Housing                 | Ground floor flat                       | 1                             | 8                        | 9            |
|                         | Two storey house                        | 1                             | 14                       | 15           |
|                         | Entrance 1 <sup>st</sup> floor or above | 4                             | 1                        | 4            |
| Household               | Lives alone                             | 6                             | 12                       | 18           |
|                         | Lives with partner                      | 0                             | 11                       | 11           |
| Time at current address | Under 10 years                          | 3                             | 2                        | 5            |
|                         | 10-30 years                             | 1                             | 9                        | 10           |
|                         | Over 30 years                           | 2                             | 11                       | 13           |

Source: Initial interviews with participants November 2012-June 2013

The interviews also revealed significant differences in the sight levels and conditions affecting people in the two interventions. The people recruited via Friends of the Elderly all had some problems with their sight, either currently or in the past, but only two of the six currently had sight loss, and none were currently registered as blind or partially sighted. In contrast all of the people recruited by Blind Veterans UK had significant sight loss, in most cases caused by macular degeneration, as shown in Table 2.

**Table 2: Degree of sight loss and sight conditions**

|                                       | <b>Condition</b>                         | <b>Friends of the Elderly</b> | <b>Blind Veterans</b> | <b>Total</b> |
|---------------------------------------|--|-------------------------------|-----------------------|--------------|
| Degree of sight loss (self-described) | No sight                                 | 0                             | 3                     | 3            |
|                                       | Partially sighted                        | 2                             | 20                    | 22           |
|                                       | Full sight                               | 4                             | 0                     | 4            |
| Sight condition                       | Macular Degeneration                     | 1                             | 17                    | 18           |
|                                       | Glaucoma                                 | 1                             | 7                     | 8            |
|                                       | Cataracts – successfully operated on     | 3                             | 0                     | 3            |
|                                       | Cataracts – not successfully operated on | 0                             | 2                     | 2            |
|                                       | Diabetes related                         | 2                             | 0                     | 2            |
|                                       | Damaged in accident                      | 0                             | 2                     | 2            |
|                                       | Retinitis pigmentosa                     | 0                             | 2                     | 2            |
|                                       | Other                                    | 1                             | 4                     | 5            |
| Registered blind or partially sighted | Yes                                      | 0                             | 19                    | 19           |
|                                       | No                                       | 6                             | 0                     | 6            |
|                                       | Not sure                                 | 0                             | 1                     | 1            |

Source: Initial interviews with participants November 2012-June 2013

Most interviewees had been living with their sight condition for many years, with an average of two years for those recruited by Friends of the Elderly, and 19 years for those recruited by Blind Veterans UK.

Interviewees were asked what things they were and were not able to do with their degree of sight. The Friends of the Elderly participants were able to see more than those recruited by Blind Veterans UK, and were also more likely to say that some things could be seen in good daylight, but not in poor lighting conditions, as shown in Table 3:

**Table 3: Level of sight of interviewees**

|                                      | Friends of the Elderly |                   |    | Blind Veterans UK |                   |    | Total |                   |    |
|--------------------------------------|------------------------|-------------------|----|-------------------|-------------------|----|-------|-------------------|----|
|                                      | Yes                    | Only in day-light | No | Yes               | Only in day-light | No | Yes   | Only in day-light | No |
| Can see where windows are            | 6                      | 0                 | 0  | 22                | 0                 | 1  | 28    | 0                 | 1  |
| Can see shapes of furniture          | 6                      | 0                 | 0  | 12                | 4                 | 7  | 18    | 4                 | 7  |
| Can recognise friend at arm's length | 5                      | 1                 | 0  | 5                 | 0                 | 18 | 10    | 1                 | 18 |
| Can recognise friend across the room | 5                      | 1                 | 0  | 2                 | 0                 | 21 | 5     | 1                 | 21 |
| Can read newspaper headline          | 4                      | 2                 | 0  | 2                 | 0                 | 21 | 4     | 2                 | 21 |
| Can read large print book            | 4                      | 1                 | 1  | 0                 | 0                 | 23 | 4     | 1                 | 24 |
| Can read ordinary newspaper          | 1                      | 3                 | 2  | 0                 | 0                 | 23 | 1     | 3                 | 26 |

Source: Initial interviews with participants November 2012-June 2013

As well as sight loss, the majority of those interviewed also had other health conditions that affected their ability to move around their home safely, as shown in Table 4, and in some cases this affected what they needed from their lighting:

**Table 4: Other health conditions affecting mobility of interviewees**

| <b>Health condition</b>     | <b>Number</b> |
|-----------------------------|---------------|
| Arthritis                   | 7             |
| Cannot walk/wheelchair user | 7             |
| Problems with hips or knees | 3             |
| Diabetes                    | 3             |
| Heart problems              | 3             |
| Balance problems            | 2             |
| Hearing loss                | 2             |
| Muscle weakness             | 2             |
| Seizures                    | 1             |

Source: Initial interviews with participants November 2012-June 2013

### **What participants wanted from the lighting improvements**

Interviewees were asked which rooms they felt were in need of better lighting. Table 5 (below) below shows the rooms most often mentioned:

**Table 5: Rooms identified by interviewees as being in need of better lighting**

| <b>Room where better lighting was required</b> | <b>Number</b> |
|--|---------------|
| Living room                                    | 21            |
| Kitchen  | 14            |
| Hall   | 12            |
| Bedroom  | 9             |
| Bathroom                                       | 8             |
| Stairs   | 8             |
| Outside lighting                               | 7             |
| Landing  | 6             |

Source: Initial interviews with participants November 2012-June 2013



The rooms that they felt were in most need of more lighting reflected the use that was made of different rooms rather than the quality of the current lighting. Living rooms were where most people spent their days and were therefore the top priority for better lighting. Bedroom lighting was often deemed less important because people said they did not spend long in their bedrooms except when sleeping. Some said that they preferred to use a torch if they were up in the night, as that was easier than trying to reach for light switches, or gentler on the eyes.

Interviewees were asked what differences they were hoping the improved lighting would make to their lives. Moving around the home safely was most often mentioned, followed by reading (with a magnifier) and preparing food in the kitchen:

'I'd like to be able to move around better and see more. My wife is hoping I'll get more confidence back. I used to like making soup but am a bit wary now. It would be good to be able to do that.'

'I'm hoping it is going to help me to see a little more. Reading would be good. I do get upset that I can't read.'

'It's going to brighten my life isn't it?'

## **Mobility and use of the home**

Their level of mobility and independence also affected what lighting they made use of. Those who were dependent on wheelchairs or no longer attempted to climb stairs or prepare food said that they did not really need better lighting in the same ways as those who were more active. Those who were less mobile were more likely to say that they would like better lighting to read, using magnifiers, or to see a computer, whilst those who were more mobile were more interested in better lighting in the kitchen or the stairs. Two people interviewed could not climb stairs and therefore said that they would not make any use of better lighting in the upper floor of their homes.

Their living situation also made a difference. Some participants who were living with a partner explained that their spouse was the one who did the cooking and that they would not therefore benefit from improved lighting in the kitchen.

There were also a variety of different issues with the existing lighting. Much of it was simply not bright enough, though in some cases interviewees thought that all that was needed was better light bulbs, or having missing bulbs replaced. In other cases they felt they needed a better type of light fitting. There were also issues in some houses with the location of light switches. Some people climbed stairs in partial light because they could not turn their hall lights off once they were upstairs.

## Improvements made privately

Many of the interviewees had made improvements in the past; in total, 19 of the 29 interviewees had made some improvements to their lighting themselves, as shown in Table 6.

**Table 6: Types of lighting improvement interviewees had made prior to the lighting improvement project**

| Type of improvement                        | Number |
|--|--------|
| Freestanding lamps                         | 9      |
| Living room light(s)                       | 7      |
| Ceiling mounted lights in bathroom/wetroom | 4      |
| Strip (fluorescent) lighting in kitchen    | 3      |
| Outside light                              | 1      |
| Wardrobe light                             | 1      |
| Strip (fluorescent) light in study         | 1      |
| Bedroom light(s)                           | 1      |

Source: Initial interviews with participants November 2012-June 2013

Most people had paid for the lighting themselves, though one had had work done by her landlord (the local authority) and three others had received grants from different sources. The lighting had been installed by a mixture of the interviewees themselves, relatives, and paid contractors. Not all the lighting fitted by interviewees themselves had improved things for them. Six out of the nineteen people felt that the modifications they had made themselves had not made it any easier to see, and one other said that the modifications had subsequently failed. This suggests that people who seek to improve their lighting themselves may not always be successful in improving what they can see, possibly because they or the family members who help them do not always understand what will help.

Although most interviewees could identify aspects of their lighting that were poor, most said that they were not thinking of making any changes to the lighting themselves. Some of these said that they had simply not thought about it, whilst a few others questioned whether it was worth making changes at their age. Those in social housing said that they did not think their landlord would be willing to make (further) improvements.

Ten of the 29 said that they were thinking of making some changes, though these were generally smaller in scale than what was to be carried out under the pilot intervention. A few interviewees indicated that they knew they would like better lighting in some rooms but were unsure how to go about arranging it. It was the logistics of arranging new lighting that appeared to be the barrier, rather than the costs, which were not mentioned by any interviewees.

Blind Veterans UK had a scheme for funding improvements to people's homes, which could include lighting improvements. This scheme responded to people's requests for improvements, often based on their stated needs when being assessed in person away from their home. One of most positive aspects of this scheme appears to be the large numbers of people who responded to the invitation by asking for lighting improvements – suggesting there may have been unmet need previously.

### **The process of arranging and fitting the new lights**

There were substantial delays between the time that participants were initially recruited into the project, and the lighting improvements being completed. The London group, recruited via Friends of the Elderly waited an average of six months, whilst those in the North West waited an average of 19 months, with one person still waiting two years on from applying to join the pilot intervention.

There were several identifiable reasons for the delays, though in the North West the key issue was difficulties in sourcing contractors to carry out the work. Pocklington wanted to work with Home Improvement Agencies to carry out the work – feeling it was useful to have their understanding of the needs of older people with sight loss. However, this proved problematic. There were several different Home Improvement Agencies in operation across the different local authority districts in Lancashire and they were unwilling to work outside their areas. They also lacked the capacity to take on a scheme as big as that in the North West. One pulled out part way though and finding a replacement contractor took time and meant quotations had to be redone.

There was also a complex arrangement in place for overseeing the North West project. Pocklington paid for the assessments and contracted the assessments to a freelance technician, who recommended what improvements would be useful. He liaised with several different Home Improvements Agencies who agreed to oversee the work, though they would themselves sub-contract to electricians to undertake the work. The electricians would often need to carry out their own site visit to determine exactly what was required and provide an accurate quotation. Blind Veterans UK then had to approve the funding for the lighting, though the project manager of the scheme was not the person who gave approval. There were therefore a lot of links in the chain between

the recipients of the lighting improvements and the people who would actually be carrying them out, or who could answer queries about what was to happen when.

In London the scheme ran more smoothly because the technical assessor and electrical installer had worked together on similar schemes before. Attempts were made to involve Housing Improvement Agencies in London too – for the same reasons as in the North West – but none were able or willing to undertake either the installations or manage them via sub contractors. The intervention in London thus had fewer links in the chain, but depended on close working arrangements between the assessor and the installer.

Some further delays were experienced in both London and the North West in cases of rented homes when landlords needed to give permission for the works. Landlords did give permission in all cases - eight social rented homes and one private rented, but they needed to see details of what was proposed first. A few homes were also found to have inadequate or unsafe electrical wiring which needed to be fixed before lighting could be improved. Those affected made arrangements to pay for the rewiring themselves though it was arranged and carried out through the pilot lighting improvement scheme.

Interviewees were, not unsurprisingly, concerned about the length of delays encountered, even when they were very happy with the lighting they finally received. Some also reported difficulties in communicating with the contractors undertaking the installations – and in some cases were unclear as to whether they should be contacting the contractor directly with any concerns, or whether they should go via the charity that had recruited them into the pilot. Some said that they did not have any means to contact the contractors who undertook the work, though it should be noted that some of the interviewees were generally a little confused around who had been responsible for carrying out the installations. For a couple of respondents with degenerative sight conditions the delays meant that the lighting they were assessed as needing was no longer of use to them by the time it was fitted:

‘It's no use. I can't see. The trouble was that instead of assessing what we wanted, they lingered....It took a year. Within that year my eyes had deteriorated shockingly. I can see very little and the lighting's not helping me none...There's one light they put in that I've never put on. The ones in the kitchen I can't see whether they're on or off.’

Interviewees had all recently had their homes assessed for the lighting at the time of the initial interview. When asked about how they decided which improvements would be made, it was clear that most participants felt they had relatively little involvement in decisions on what lighting would be helpful for them. For some, this was a source of some frustration:

‘They didn't really “offer” anything. They just did it.’

'I didn't really ask, they just ticked everything.'

However, others felt that one aspect of the scheme that they had appreciated had been the expertise of the assessor in knowing what they might benefit from, especially if they didn't know themselves:

'I went along with the results of the survey but to be honest with you I wasn't really convinced, but I have been convinced since.'

'They knew what would be useful. I wouldn't have thought of some of it, but they knew and they were right. I think the assessment was very good.'

The technician who undertook the assessments reported that establishing what was needed was largely a technical assessment – since in nearly all cases of sight loss, more light, and brighter light is what is needed. He did take into account the recipients' views on what kinds of lighting they felt they wanted and sought to balance what was best for producing light with what was attractive to live with.

Interviewees were asked about the experience of having the new lighting fitted. Overall most were very positive about the installers and the service provided:

'The fellow that done the work was very good. He cleaned up after him. He couldn't finish off at the time because he needed a dimmer switch, but he came back with that later. He hoovered up and everything.'

'They did it in a day. They were kind and said if any problems would come and sort out. I was concerned about the disruption but there was none. I didn't even know they were here. I just moved from room to room.'

'I've no complaints.'

A smaller number did note that they had found the work quite disruptive and chaotic, as it had involved the workmen being in nearly every room of their home. Four different contractors were used to carry out the works, and most of the issues relating to communication and a lack of clarity over what work was to be done appeared to relate just to one of the contractors used for some of the installations in the North West.

## **The impact of the lighting improvements**

Of the 29 people initially interviewed as part of this study, 25 went on to have their lighting improved, and of these 21 were interviewed around six months after the improvements were complete. All were still living in the same home and around half said their sight had deteriorated during the last year, with the other half saying it had stayed the same. One person said her sight had improved. A few had suffered other health problems that had reduced their mobility and ability to move safely round their home, unrelated to their sight loss.

Interviewees were asked about what improvements had been made to their homes, and also which room's improvements had given them the most benefit (Table 7):

**Table 7: Rooms where lighting improvements have made and where participants report they have made the biggest difference to lives**

| <b>Room</b>      | <b>Lighting improvements made</b> | <b>Identified by interviewee as where improvements had made the most difference</b> |
|------------------|-----------------------------------|---|
| Living room      | 17                                | 6   |
| Bedroom          | 17                                | 3   |
| Kitchen          | 16                                | 8   |
| Bathroom         | 15                                | 2   |
| Hall             | 13                                | 1   |
| Stairs           | 10                                | 1   |
| Landing          | 9                                 | 1   |
| Outside lighting | 9                                 | 0   |
| Other rooms      | 7                                 | 1   |

Source: Follow up interviews with participants May 2013 to February 2015

Most people had had the lighting changed in many different parts of their home. Kitchens, living rooms, bedrooms, bathrooms and hall lighting had all been improved in most homes. Improvements included fluorescent strip or recessed lighting being installed, brighter bulbs, kitchen worktop lighting (under cupboards), and lighting in previously unlit corners such as under-stair cupboards and alcoves. Some had received lamps to use for reading recommended for people with sight loss.

The aspect of the lighting improvements that they liked best were most often related to kitchen improvements, followed by living rooms. Interviewees did not appear to appreciate the lighting improvements made to their bedrooms, hall, stairs or landing to the same extent. Many emphasised that they spent most of their time in their living rooms or kitchens and therefore made most use of the new lighting in these rooms:

'The angle lamp in the living room that shines on the telephone is most useful, as it means together with the new telephone that I can communicate.'

‘The kitchen is the best bit - because that's where most of the everyday work is done.’

It is also interesting to compare Table 7 with Table 4 above, where participants identified which rooms they felt were in need of better lighting. Living rooms and kitchens featured highly here too, suggesting that these were the areas where participants knew they could most benefit from better lighting.

They were also asked about what difference the changes had made to their lives, and whether there were any activities they were now able to do, or to do more easily. Table 8 shows the answers given here:

**Table 8: Benefits hoped for and obtained from the lighting improvements**

| <b>Benefit</b>                       | <b>What they had been hoping for (before installation)</b> | <b>Benefit of lighting (6 months on)</b> |
|--------------------------------------|--|--|
| Moving more safely round the house   | 7  | 4  |
| Preparing food or drinks more easily | 4  | 2  |
| Reading                              | 2  | 3  |
| Hobbies                              | 2  | 0  |
| Lifted spirits                       | 1  | 2  |
| Shaving                              | 1  | 0  |
| Choosing clothes                     | 1  | 0  |
| Using the phone                      | 0  | 1  |
| Eating                               | 0  | 1  |

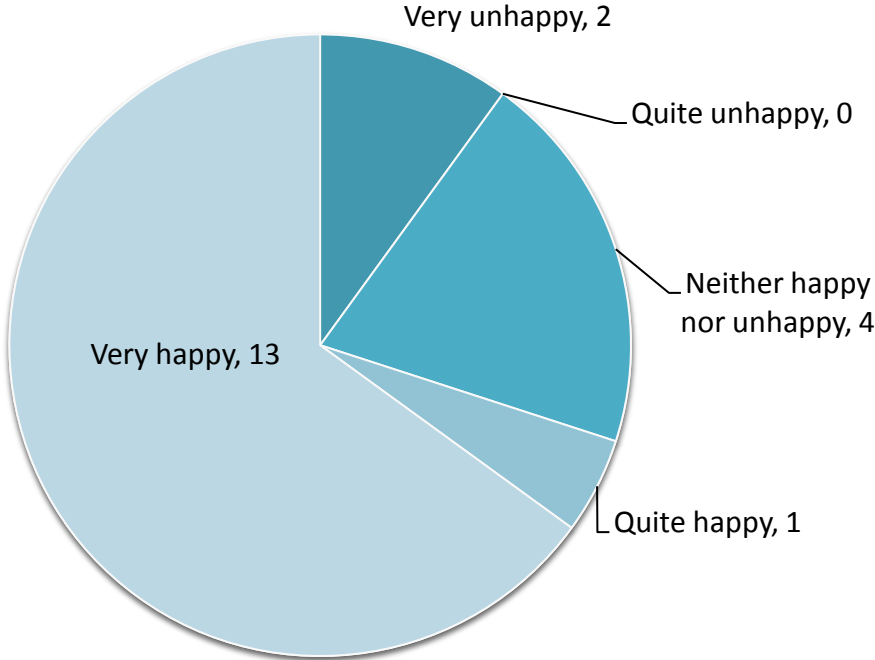
Source: Follow up interviews with participants May 2013 to February 2015

Only people who were interviewed both before and after the improvements have been included in this table. As can be seen from Table 8, participants reporting having received many of the benefits they had been hoping for. A few said they were still not able to do some of the things they'd like to, such as reading or sewing, though acknowledged that this was very much due to their deteriorating sight rather than any shortcoming of the new lighting.

**Satisfaction rates**

Interviewees were asked on a scale of one to five how happy they were with their new lighting, and how much of a difference they had made to their lives. Most interviewees were very happy, as shown in Figure 1:

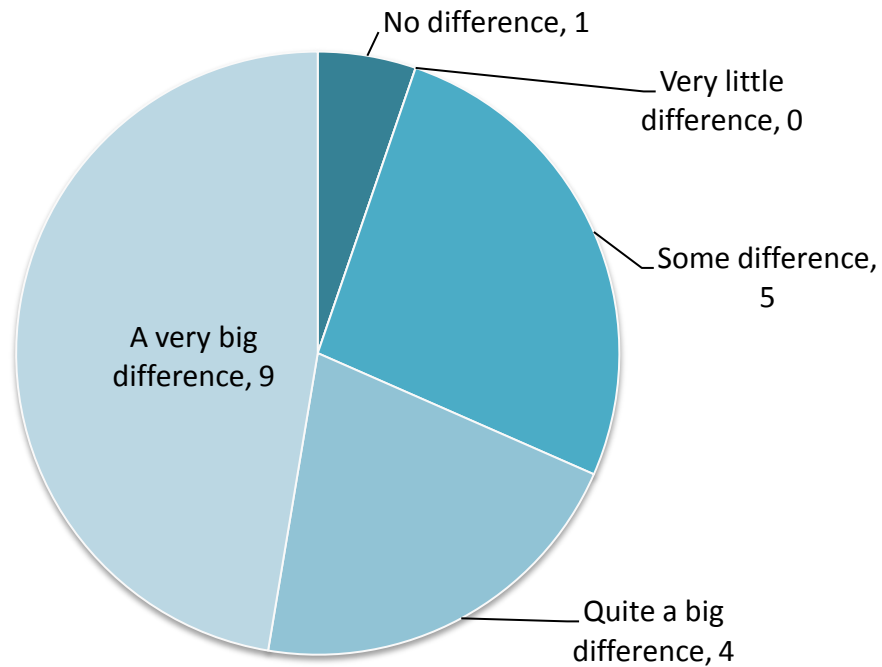
**Figure 1: Satisfaction with new lighting**



Source: Follow up interviews with participants May 2013 to February 2015



**Figure 2: Degree of difference lighting has made to interviewee's life**



Source: Follow up interviews with participants May 2013 to February 2015

Lastly interviewees were asked whether they would recommend the lighting improvements to a friend with similar levels of sight loss to themselves. Seventeen said that they would do so, one said they would not, and three were unsure.

The small number of interviewees who were less happy with the lighting either said that the lights were not useful for them, that they were not bright enough or that they did not like the style of the lights:

'I wouldn't have chosen them myself. They're not the style I would have liked. They're a bit overdone, and fancy looking. Sometimes a bit too light and you can't dim them or just put one on.'

'They were fitted in summer. When winter came, the lighting in the back kitchen was dim. A chap came round to check and agreed it could be much brighter, but said it would take another year to get it through Blind Veterans, so we decided to do it ourselves.'

Nevertheless the large majority of interviewees were very happy with their new lights:

'It's been better than I expected, despite the deterioration in my sight. I just have a little peripheral vision now, but the lighting helps a lot. I am simply delighted with it. It's exceeded my expectations.'

'They've given me a lot of pleasure.'

'I couldn't believe the difference they made! I can see now. I hadn't realised how dark it was before.'

## **The impact on participants' family members**

Eighteen of the 29 interviewees were living alone, but 11 were living with their wives. The evaluation sought to explore the impact of the lighting improvements for the wives as well as the husbands with sight loss. In two cases the wives were initially concerned about the lighting improvements, worried that it would make it too bright for them. In one of these cases the extent of the lighting alterations planned was scaled down so as to be acceptable both to the man with sight loss and his wife.

Nine of these couples were followed up six months on to find out how they were getting on with the new lights. Just one person said that his wife was unhappy with the lights because she found the sitting room lights too bright. This person said that the lighting in the sitting room was "all or nothing" and was currently trying to source a free standing light from the RNIB which he could use for seeing what he was doing whilst his wife was watching television, as she would find this less intrusive. Three others of the married men reported that their wife also had some degree of sight loss and benefited from the improved lighting. Five of the other six said that their wives liked the lights, or were not bothered by them, including the wife who had initially been unsure about them.

## **Reducing falls**

Relatively few of the participants had had any falls in the home in the year preceding either interview (Table 9)

**Table 6: Number of falls and accidents reported in the home**

| Number | Falls                                |                                | Accidents                            |                                |
|--------|--------------------------------------|--------------------------------|--------------------------------------|--------------------------------|
|        | In 6 months before initial interview | In 6 months after new lighting | In 6 months before initial interview | In 6 months after new lighting |
| 0      | 11                                   | 16                             | 17                                   | 19                             |

|                                  |    |    |   |   |
|----------------------------------|----|----|---|---|
| 1                                | 8  | 3  | 2 | 1 |
| 2                                | 1  | 1  | 1 | 0 |
| 3+                               | 1  | 1  | 1 | 1 |
| Total number of falls/ accidents | 22 | 10 | 8 | 4 |

Source: Interviews with participants December 2012 to February 2015

Only those who were interviewed both before and after the lighting improvements have been included in this table. The data here does suggest that there has been a reduction in the number of falls and accidents within the home in the period following the lighting improvements. However, it should be interpreted with some caution. People who reported having fallen were asked whether they thought poor lighting had been a factor in their fall – of the ten who had fallen in the period before the improvements, only one attributed the fall to poor lighting and this fall occurred at a time when the interviewee admitted he had failed to turn the light on when entering a room in the early morning. Three others were unsure whether lighting was a factor. One of these had misjudged the location of a step and the other misjudged where the bed was when trying to sit down, so both were related to poor vision and possibly to the quality of lighting. The other falls were reported to be related to losing balance or standing up too quickly, and not to vision or poor lighting.

The three falls that were related to poor vision did not result in any GP or nurse attendance or hospital attendance. All the interviewees experienced bruising but no further injuries.

Of the falls that occurred in the period after the lighting improvements, one was attributed to poor lighting, but this too had occurred after the interviewee failed to turn a light on. One other person was uncertain why they fell. Both of these falls resulted in paramedics being called and one of them was taken to hospital to receive outpatient treatment at an Accident and Emergency department. The other was advised by the paramedics to rest. The other three falls that occurred after the lighting were reported to be related to losing balance. Balance is directly related to sight and it may be that poor vision or lighting was implicated, but we do not know.

Three of the people who had had accidents in the home in the period prior to the lighting interventions attributed them to poor lighting. One person burnt his wrist on a gas hob whilst testing milk to see if it was hot enough because he had not seen the gas was still alight; one had scalded his hand when pouring from kettle (having failed to find the water sensor), whilst a third had bumped into things that he could not see around the

home. All of these accidents had been treated at home without the involvement of medical professionals.

Both the people who reported accidents after the lighting improvements said that these were related to poor sight though did not feel the lighting was responsible. One person said he had on several occasions bumped into things he could not see; whilst the other said that he had cut his finger whilst preparing food. Both had been treated at home without the involvement of medical professionals.

Overall the number of falls and accidents that are clearly related to poor lighting, or even to poor vision, is small so it is hard to draw firm conclusions. Nevertheless, the data does suggest a reduction in falls and accidents in the period following the lighting improvements, and that in a population who is ageing and with failing eyesight who might normally be expected to be increasing their number of falls and accidents.

## **Costs**

The costs of the lighting alterations ranged from £223 to £2,460 per home, with an average cost of **£826**. In addition to this the cost of assessing each home was £254 per assessment. In total 35 homes were assessed and 28 homes had lighting installations carried out. This means that the assessment cost, per improved home was **£317**.

In addition there were costs involved in overseeing the scheme and arranging for the works to be carried out. Some of this was undertaken by the technician, whose fees averaged at £84 per installation. The staff at the Blind Veterans also estimated their own input to have cost £4,397, and London costs at around another £700 bringing the total for arranging the work to **£296** per completed installation.

This means that the total cost per lighting installation was **£1,464**.

## **3. Conclusions**

This is a small scale pilot study into the process and impacts of carrying out lighting improvements in the homes of older people with sight loss. Despite some delays the scheme overall was successful in improving the lighting in the homes of 28 older people with sight loss. The majority of people receiving the improvements were very pleased with the new lighting, even some who had been a little unsure at the outset. Sight loss typically occurs slowly over a period of many months or years. Many of the participants said that they had not realised how poor the lighting was in their homes, or how much better lighting would help until they saw it in action.

There appeared to be an optimal level of sight loss to benefit from improvements to lighting. A few of those with the least sight loss, or who had eye conditions that did not affect their ability to see in low levels of light (such as Blenitantis) were less able to benefit from the improved lighting. Blind Veterans UK - a dedicated sight loss charity - recruited people with much more severe sight loss than did Friends of the Elderly, a charity working with a wider client group.

At the other end of the scale, a few of those with very little sight no longer had sufficient sight to make use of the improved lighting. The interviewer observed that some people with very little sight had not turned lights on, even on dark evenings. Others admitted to not using the lighting because they now found their way around by touch and memory rather than sight. The lighting is likely to be best value for money when targeted on those in the earlier stages of degenerative sight conditions, such as macular degeneration.

Sight loss conditions are often degenerative and predominately affect older people. Recruiting participants via a charity primarily supporting older people means that participants' sight and general health can deteriorate during the time between assessment and fitting of the new lights, or there may be a fairly limited time window when the person will be able to benefit from their improved lighting. Five of the 34 participants in this study died within a year of being assessed for the new lights, and one other ceased living independently. The lighting is likely to be of best value for money when targeted at younger and more mobile people with less advanced sight loss. Delays between assessment and fitting of the new lighting reduce the time in which people may benefit from the improved lighting. These delays could be reduced in future schemes if potential contractors were recruited to undertake works before recruiting participants to the scheme, so that once the assessments have been carried out the work can begin more quickly. Ensuring that the scale of the work is manageable for the potential contractors is also important; home improvement agencies are not always set up to carry out large scale projects, even if the funding is available. Having multiple agencies and contractors involved increases the complexity of the scheme and the opportunities for delays. In London where one assessor and one installer was used much shorter delays were experienced.

The way in which the lighting improvements were funded meant that there was no fixed budget for the scheme and no decisions were taken as to what represented the best value for money; all improvements recommended were funded in full. If such decisions were to be taken in future programmes there are lessons that can be learned from this project. People who had their lighting improved generally valued the improvements made to their kitchens and living rooms most. Lighting improvements to bedrooms were less valuable to them because they did not spend much time in their bedrooms except when asleep. Anything that allowed them to read, prepare food or drink, or move around

safely downstairs was particularly appreciated. Improving lighting in living rooms and kitchens may therefore be the best value for money. It might also be sensible to consider whether plug in lighting alone could be sourced and supplied on a much faster timescale for at least some of the homes assessed. Whilst there are benefits from new fittings, especially in kitchens, living room floor or table lights were also greatly appreciated and might be a much simpler improvement that could be made to many homes more quickly and without the need to employ electricians to install them.

Some older people in this study, especially those with mobility difficulties, had been living with sub-standard lighting because of difficulties in sourcing, buying, fitting and replacing good light bulbs. A low cost approach to improving lighting that simply sources and fits appropriate bulbs to existing fittings may offer value for money. Leaving spare light bulbs with participants costs very little money but was greatly appreciated by some of the scheme participants and should reduce the likelihood of non-working lights in the future.

Some of this study's participants indicated that they would have been willing and able to pay for the improvements. A few had donated money to the charities involved to say thanks, or had made arrangements to pay for additional improvements (such as to electrical wiring) in order for the lighting improvements to be undertaken. It is possible that costs could be reduced by charging participants, or encouraging donations where participants were willing. The practicalities of arranging improvements to lighting were at least as big a barrier as the costs involved for many of those interviewed.

This was a small scale study and the number of participants who had had a fall during the 12 months prior to either interview was small. Nevertheless the proportion who had fallen or had accidents in the home in the six months after the lighting improvements was less than half the number who fell in the six months before they were assessed. This suggests that the lighting may be having an impact on the number of falls, and would be worthy of further research.