**BACKGROUND**

Stroke survivors can face a number of restrictions to physical and outdoor activities as a result of impairments and disability. Electrically assisted bikes (e-bikes) provide assistance whilst pedalling and have the potential to overcome some of these barriers. This study aimed to explore the factors affecting e-bike use by stroke survivors.

**INTERVENTION**

Participants could loan an e-bike or e-trike for up to 3 months.

**ANALYSIS**

Interview data were anonymised and transcribed in NVivo and the COM-B behaviour change model acted as a framework for analysis. GPS data were analysed in Excel and ArcGIS to calculate the number, time and distance of each journey.

**FINDINGS**

Six participants were recruited but only three went onto loan an e-bike/e-trike (Table 1). Below are the factors identified from the analysis from the interview data pre and post intervention.

**IMPAIRMENT**

Level of impairment influenced:
- the type of e-bike selected
- adaptations required
- ability to cycle

**SOCIAL SUPPORT**

Social support was an important factor that came in the form of:
- encouragement
- a companion to cycle with
- help those with severe impairments to mount and dismount the e-trike
- lack of GP approval prevented one participant from fully taking part

**ENVIRONMENT**

Environmental factors included:
- a lack of storage space for an e-trike
- was a reason for withdrawal
- safe places to cycle

**THE E-BIKE**

Factors surrounding the e-bike/e-trike itself were:
- the weight of the e-bike and battery life
- the majority of participants reported the electrical assistance gave them the confidence to cycle further for longer, although one participant preferred to cycle without the assistance as it was deemed too fast for them
- misconceptions about how the e-bike works

**CONCLUSIONS**

- Stroke survivors can use e-bikes although barriers exist.
- The assistance provided by the e-bike/e-trike could provide stroke survivors the opportunity to cycle outdoors and facilitate participation in activities of everyday living and increase levels of physical activity.
- Due to the small number of participants who were able to loan an e-bike, further research is required to determine whether e-bikes are a feasible and effective intervention for stroke survivors.

**Table 1: Journey information for the participants who loaned an e-bike/e-trike**

<table>
<thead>
<tr>
<th>Name (age)</th>
<th>Type of e-bike</th>
<th>Number of weeks loan</th>
<th>Number of journeys completed</th>
<th>Average distance (km)</th>
<th>Average journey length (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian (72)</td>
<td>E-bike</td>
<td>11</td>
<td>7</td>
<td>2.45</td>
<td>16</td>
</tr>
<tr>
<td>Jim (63)</td>
<td>E-bike</td>
<td>8</td>
<td>13</td>
<td>13.97</td>
<td>48</td>
</tr>
<tr>
<td>Rob (54)</td>
<td>E-trike</td>
<td>8</td>
<td>3</td>
<td>1.68</td>
<td>27</td>
</tr>
</tbody>
</table>

**DESIGN**

A mixed methods multiple case study design consisting of:

- Semi-structured interviews
- Global Positioning System (GPS) data

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This study is independent research funded by the National Institute for Health Research Applied Research Collaboration North West Coast (ARC NWC). The views expressed in this publication are those of the authors and not necessarily those of the National Institute for Health Research or the Department of Health and Social Care.