



## Article

# Exploring Priority Issues among a Sample of Adults from Minority Ethnic Communities Who Are Living with Visual Impairment in the UK

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**Abstract:** *Background:* Despite an increased risk of visual impairment (V.I.) among adults from minority ethnic communities in the UK, limited research has explored their wider life experiences. *Methods:* A secondary analysis of V.I. Lives survey data explored priority issues among a sample of 46 Asian, 22 Black, and 77 White adults who have visual impairment. A list of 24 issues were grouped into 10 life domains. Issue and domain mean importance scores were calculated for each to facilitate ranking of importance. *Results:* Kruskal–Wallis tests showed that there were statistically significant differences between the three groups for 7/10 domains and 19/24 issues. Post hoc comparisons showed that this largely reflected group differences between Asian and White participants. While there were no statistically significant differences between Asian and Black participants possibly due to small sample sizes, there were statistically significant differences between Asian and White participants in 7/10 domains and 14/24 issues. Additionally, there were significant differences between Black and White participants in 5/10 domains and 7/24 issues, *specialist workplace equipment* being the only issue with a significant difference between White and Black but not Asian participants. There were no group differences for *confidence in ability to do everyday tasks* and *opportunities to take part in more sporting and leisure activities*. Overall, White participants generally rated all issues as less important than Asian and Black participants. The top-three domains for Asian participants were ‘accessible environments’/‘finances’, ‘technology’, and ‘public attitudes’. The top-three issues were *accessibility of public transport*, *employer attitudes*, and *reduction of street clutter*. The top-three domains among Black participants were ‘employment’, ‘accessible environments’, and ‘emotional support’. The top-three issues were *employer attitudes/specialised education for young people with V.I.*, *specialist V.I. equipment in the workplace*, and *confidence in ability to do everyday tasks/accessibility of public transport*. *Conclusions:* Differences in priorities between the groups suggest that the needs of individual communities may be lost when grouping culturally diverse communities together, highlighting the need for more research with different minority ethnic communities.

**Keywords:** visual impairment; sight loss; minority ethnic; BAME; social inequalities; health inequalities

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## 1. Introduction

Visual impairment (V.I.) has been associated with an adverse impact on a range of life domains. For instance, while educational attainment was better among UK children with V.I. than those with other needs/disabilities, educational attainment was poorer among children with V.I. than those without special educational needs (SEN) [1]. There is evidence that education level may impact employment outcomes for people with V.I. [2,3]. V.I. has been associated with lower employment rates [4], an increased risk of being unemployed or unable to work, and being in a lower-status job [5]. In the UK, employers

are legally required to make reasonable adjustments for employees with disabilities, and the government-funded Access to Work scheme provides support for employers to make provisions. Yet, barriers such as transport issues, negative employer attitudes, and a lack of adaptive equipment in the workplace are cited as impacting the employment of people with V.I. [6,7]. People with V.I. have also been found to be at an increased risk of being in the lowest income bracket [5]. This is concerning, considering the additional everyday costs associated with having V.I., e.g., for specialist technology, such as screen readers or labelling pens; adaptations to the home; regular help with household chores to maintain independence; the additional costs associated with socialising; and travel, for those who cannot use public transport or walk [8,9].

People from minority ethnic communities (MEC) are at increased risk of V.I. [5,10] and are projected to make up an increasing proportion of adults living with V.I. in the UK [11]. Being from MEC has, similarly, been associated with inequalities in several life domains. Although the 2021 UK Census showed that Chinese, Indian, and Black African adults tended to be better educated than White adults [12], 67% of MEC adults were in employment in 2021 compared to 76% of White adults, despite a steady increase in employment among MEC adults since 2012 [13]. However, there is considerable variation between different ethnic communities. For instance, the employment rate among Indian communities (78%) exceeded that of White adults [13], and Indian households were more likely than any other ethnic group to be in the highest income brackets [14]. In contrast, just over half (58%) of Pakistani and Bangladeshi adults were in employment [13], and the prevalence of Pakistani and Bangladeshi households among the lower income brackets was high [14]. Overall, unemployment rates were highest among Black communities [12], who were also more likely to be in the lower household-income brackets than any other ethnic group [14].

People living at the intersection of disability and ethnicity may be at risk of multiple stigmatisation and discrimination. Yet, research on the wider life experiences of MEC adults with V.I. in the UK is limited [15]. A UK survey of over 1200 people who are registered as blind or partially sighted, including 703 working-age adults, found no statistically significant association between ethnicity and employment [16], but a 2007 review listed unmet needs relating to social isolation and self-esteem for MEC groups [17]. All older adults with V.I. reported difficulties with mobility outside the home, activities of daily living, maintaining control and independence, and a decreasing social network, regardless of ethnicity [18], but those from MEC may be more likely to require help from family members with activities of daily living, and less likely to have up-to-date technological devices and to leave the home than their White counterparts [18]. Neither article [17,18] provides evidence, such as quotes or statistics, to support these findings.

To ensure adequate and equitable health and social support, an understanding of the priorities and needs of the different ethnic communities is required. As part of a series that explores the wider life experiences of a small sample of MEC adults living with V.I. in the UK, the current article provides preliminary insights into the issues that are important to them, aiming to stimulate research on the experiences of individual ethnic communities with V.I., which may vary substantially from those of the majority White V.I. population.

## 2. Materials and Methods

This article presents findings from a secondary analysis of anonymized data collected in the V.I. Lives survey [19].

### 2.1. The V.I. Lives Survey

The V.I. Lives survey was commissioned by the Royal National Institute of Blind People (RNIB), the Thomas Pocklington Trust (TPT), and the Guide Dogs for the Blind Association (Guide Dogs) (the data controllers), who granted access to the anonymized dataset. Quantitative survey data were collected by the market research agencies Insight Angels and Acumen Fieldwork. Consent was sought from participants at the start of

the survey. Data were collected in two waves (17 December 2019 to 23 March 2020, and 14 August 2020 to 2 November 2020). Participants were recruited through Acumen's healthcare database, partner charities, social media, radio adverts, and lists provided by RNIB and Guide Dogs. Acumen's health database consists of individuals who have agreed to be contacted for market research and contains self-reported information about their eye condition and length of V.I. An initial call screened out non-English speakers and those without V.I. The degree of V.I. was assessed using self-reported registration status, legal ability to drive, and self-reported difficulty with near, distance, and peripheral vision when wearing glasses/contact lenses where applicable. The initial screener and the near and distance difficulty questions have previously been used in the Life Opportunities Survey (LOS), a longitudinal survey of people with disabilities conducted by the Office for National Statistics (ONS) (see D'Ardenne, Hall [20] for a review of the questions and their limitations). Potential participants were excluded from the survey if they were not registered and (1) were legally not able to drive but had no difficulties with near, distance, or peripheral vision or (2) if they were legally able to drive and had no or only mild vision difficulties. Participants who passed the screener questions were categorized as having mild, moderate or severe V.I. (Supplementary Table S1). Any inconsistencies in responses were clarified by contacting the participants. All survey interviews were conducted over the phone to ensure accessibility for those without internet access.

## 2.2. Materials

A questionnaire was developed for the survey and piloted with a small number of advisers. Screener and demographic questions were followed by individual sections exploring 'health', 'well-being', 'relationships and attitudes to life', 'getting out of home', 'leisure', 'work', 'education', 'benefits and finances', 'technology and media', 'accessible information and reading', 'domestic support', 'charity awareness and usage', 'making everyday better', and 'coronavirus'.

As described above, V.I. status was self-reported. Despite the limitations of self-report compared to objective measures, it is routinely used in survey research, including large general population surveys [20]. Ethnicity was assessed using one question that asked participants how they would describe their ethnic background from a list of response options: *White British*, *White other*, *Mixed/multiple ethnic groups*, *Asian/Asian British*, *Black/African/Caribbean/Black British*, and *Other ethnic group*.

The section titled 'Making everything better' asked participants to rate the importance of a list of 24 issues relating to employment, education, technology, self-efficacy, accessibility of environments and information, public attitudes, and emotional support on a Likert-type scale ranging from *extremely important* to *not important at all*. The items were introduced as follows:

*"We have discussed many things about different aspects of your life. We hope that the questions we have asked have given you a chance to express things which are important to you. The final question relates to improving the quality of your life. Please take a moment and think about what 'quality of life' means specifically to you and your life today. For each of the following areas, could you please tell me how much of a priority it is for you that changes and improvements are made to improve your quality of life. Would you say it extremely important, very important, somewhat important or not important at all?"*

## 2.3. Participants

A convenience sample of 769 participants aged 13+, including 667 adults aged 18+ from White, 46 from Asian, 22 from Black, 6 from 'Other' ethnic' and 3 from mixed ethnic backgrounds took part in the survey. The White group consisted of adults who identified as White British and White other. Participants in the MEC groups were significantly younger than those in the White group ( $M = 40.78$  vs.  $M = 58.72$ ,  $t(103.0) = 9.36$ ,  $p < 0.001$ ). There were further statistically significant differences in the region where participants were located,  $X^2(11, 741) = 71.69$ ,  $p < 0.001$ , Cramer's  $V = 0.311$ , rural vs. town setting,

$\chi^2(2, 741) = 26.38, p < 0.001$ , Cramer's  $V = 0.189$ , employment status,  $\chi^2(4, 743) = 35.09, p < 0.001$ , Cramer's  $V = 0.217$ , highest level of education achieved,  $U = 28154.5, p < 0.001$ , and marital status (Fisher's exact simulated  $p < 0.001$ ), but not for V.I. severity,  $U = 28,365.5, p = 0.092$ , living arrangements,  $\chi^2(1, 744) = 0.61, p = 0.434$ , nor gender,  $\chi^2(1, 742) = 0.63, p = 0.427$ .

To control for the significant differences and unequal sample sizes, previous research in this series [21–25] has used a matched control sample drawn using RStudio [26]. White participants were matched to MEC participants based on age, gender, region, and whether they lived in rural areas vs towns, yielding 77 participants in both groups. Age and gender are frequently used to match control samples [27–32]. In addition, there are gender differences in eye health [33,34] and age differences in the prevalence of individual eye conditions [35,36], as well as needs and priorities across the age span. Variables relating to geographical location (region and urban/rural) were selected to control for regional differences in deprivation and V.I. support [37–39]. One participant, who preferred to self-describe their gender, was excluded due to the potential impact of being gender-non-normative and the lack of a match.

#### 2.4. Data Analysis

This article is exploratory. Descriptive statistics provide an overview of responses for each subgroup. Means and standard deviations were calculated for continuous variables and proportions and frequencies for categorical and ordinal variables. Invalid responses such as *not stated* or *prefer not to say* are shown in the respective tables but are excluded from statistical subgroup comparisons. Due to expected frequencies of  $<5$  in 5 cells (27.8%), the categories *student*, *looking after family/home*, *long-term sick/disabled*, and *unpaid work* (e.g., *volunteering*, *intern*, *work experiences*) were collapsed into the *other* category for the statistical analysis of the employment variable. Statistical analysis of the education variable excludes *non-UK qualifications* and *other*. Whilst Likert scales are ordinal, and median would therefore be more appropriate, mean importance scores were created to assess the relative importance of issues by assigning a score to each response option (*extremely important* = 3 to *not at all important* = 0) and calculating the mean score for each issue. The higher the resulting mean importance score, the more people assigned the issue a higher importance, thus suggesting a greater importance. In addition, to explore priority areas, the issues were grouped into the life domains they related to (see Table 1 for an overview of the 10 domains and related issues). Mean importance scores for each domain were created by averaging the scores for all issues within the domain for each participant and then calculating the mean for each domain.

Although the survey was not specifically designed for individual subgroup analysis, and despite the relatively low subsample sizes, we undertook an exploratory analysis comparing results from the two largest MEC subgroups, Asian ( $n = 46$ ) and Black ( $n = 22$ ) participants, rather than a combined MEC group, to gain preliminary insights into this under-researched topic. Subgroup analysis did not include mixed and other ethnic communities due to small subsample sizes ( $n = 3$  and  $6$ , respectively). The matched White subsample used in previous research in this series [21–25] was retained to minimise sample-size differences and significant differences in demographic variables. Subgroup analyses were conducted using chi-square tests for categorical data. Where more than 20% of the cells had a cell count of less than 5, Fisher's exact tests were calculated using R. The results of Fisher's exact tests are presented as  $p$ -values only. A simulated  $p$ -value is presented for marital status in the full sample due to capacity issues. Kruskal–Wallis  $H$  tests were used for ordinal data, and post hoc group comparisons were conducted using Dunn's test applying Holm correction to control for multiple testing. Age was not normally distributed among White ( $p = 0.002$ ) and Asian participants ( $p = 0.014$ ), and the non-parametric Kruskal–Wallis test was used to assess group differences in age. A significance level of  $p = 0.05$  was used throughout the analysis.

**Table 1.** Overview of domains and associated issues.

| Domain                    | Number of Issues | Issues                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ‘Public attitudes’        | 1                | <ul style="list-style-type: none"> <li>• Understanding amongst the general public about how they can help people with V.I.</li> </ul>                                                                                                                                                                                                                                           |
| ‘Emotional support’       | 1                | <ul style="list-style-type: none"> <li>• Emotional support to come to terms with V.I.</li> </ul>                                                                                                                                                                                                                                                                                |
| ‘Self-efficacy’           | 3                | <ul style="list-style-type: none"> <li>• Ongoing information and support to look after a sight condition;</li> <li>• Confidence in my ability to do everyday tasks;</li> <li>• Availability of help and support to take care of myself and my home.</li> </ul>                                                                                                                  |
| ‘Finances’                | 2                | <ul style="list-style-type: none"> <li>• Availability of benefits to maintain a decent income;</li> <li>• Cost and availability of the specialist equipment I need.</li> </ul>                                                                                                                                                                                                  |
| ‘Technology’              | 5                | <ul style="list-style-type: none"> <li>• Access and support to use the internet;</li> <li>• Training to use technology to its full potential;</li> <li>• Accessibility features of mainstream technology;</li> <li>• Development of new smart technology and apps to support people with V.I.;</li> <li>• Availability of better route planning and navigation aids.</li> </ul> |
| ‘Employment’              | 3                | <ul style="list-style-type: none"> <li>• Support in applying for jobs and preparing for interviews;</li> <li>• Attitudes and understanding of employers about employing someone with a V.I.;</li> <li>• Availability of specialist equipment in the workplace for people with V.I.</li> </ul>                                                                                   |
| ‘Education’               | 3                | <ul style="list-style-type: none"> <li>• Access to specialised education and support for children/young people with V.I.;</li> <li>• Remotely/internet-based learning courses/training;</li> <li>• Support/training of mainstream education staff to adapt courses for people with V.I.</li> </ul>                                                                              |
| ‘Accessible information’  | 1                | <ul style="list-style-type: none"> <li>• Format of information provided by service providers.</li> </ul>                                                                                                                                                                                                                                                                        |
| ‘Accessible environments’ | 3                | <ul style="list-style-type: none"> <li>• Accessibility of public transport (signage, announcements, training of drivers/staff);</li> <li>• Reduction of obstacles and street clutter;</li> <li>• Design and accessibility of public buildings.</li> </ul>                                                                                                                       |
| ‘Social participation’    | 2                | <ul style="list-style-type: none"> <li>• Ability to connect to other like-minded people;</li> <li>• Opportunity to participate in more sporting and/or leisure activities.</li> </ul>                                                                                                                                                                                           |

V.I. = visual impairment.

### 3. Results

There was no association between ethnicity and gender, V.I. severity, or living arrangements (Table 2). In addition, there were no longer any statistically significant differences between ethnicity and age, region, setting, employment status, and marital status. However, there was a statistically significant group difference in level of education. Post hoc tests showed that Black participants had significantly better educational attainment than White participants ( $p = 0.03$ ). Participants in all groups were mainly female, London-based, living in a city or big town, educated to undergraduate level, employed, single, living with others, and had severe V.I., but Black participants were more likely to be educated to postgraduate degree level and have moderate V.I.

**Table 2.** Participant characteristics by subgroup.

|               | Asian (n = 46)             | Black (n = 22) | White (n = 77) |
|---------------|----------------------------|----------------|----------------|
|               | % (n)                      | % (n)          | % (n)          |
| <b>Age</b>    | $H(2) = 0.18, p = 0.916$   |                |                |
| M (SD)        | 40.17 (14.61)              | 39.18 (14.70)  | 41.09 (15.62)  |
| Range         | 18–74                      | 18–75          | 18–85          |
| <b>Gender</b> | $\chi^2 = 0.51, p = 0.776$ |                |                |
| Female        | 50.0 (23)                  | 59.1 (13)      | 51.9 (40)      |
| Male          | 50.0 (23)                  | 40.9 (9)       | 48.1 (37)      |

Table 2. Cont.

|                                                | Asian (n = 46) | Black (n = 22)                              | White (n = 77) |
|------------------------------------------------|----------------|---------------------------------------------|----------------|
|                                                | % (n)          | % (n)                                       | % (n)          |
| <b>Region</b>                                  |                | <i>p</i> = 0.813                            |                |
| England                                        | 89.1 (41)      | 90.9 (20)                                   | 80.5 (62)      |
| Scotland                                       | 4.3 (2)        | 9.1 (2)                                     | 9.1 (7)        |
| Wales                                          | 4.3 (2)        | -                                           | 7.8 (6)        |
| Northern Ireland                               | 2.2 (1)        | -                                           | 2.6 (2)        |
| <b>Setting</b>                                 |                | <i>p</i> = 0.073                            |                |
| City/big town                                  | 67.4 (31)      | 77.3 (17)                                   | 55.8 (43)      |
| Small town                                     | 26.1 (12)      | 9.1 (2)                                     | 37.7 (29)      |
| Rural area                                     | 6.5 (3)        | 13.6 (3)                                    | 6.5 (5)        |
| <b>Education</b> <sup>1</sup>                  |                | <b><i>H</i>(2) = 6.67, <i>p</i> = 0.036</b> |                |
| No formal qualifications                       | -              | -                                           | 5.2 (4)        |
| GCSE/O-Level                                   | 15.2 (7)       | 4.5 (1)                                     | 14.3 (11)      |
| A-Level / Advanced Highers                     | 15.2 (7)       | 9.1 (2)                                     | 18.2 (14)      |
| Apprenticeship, vocational qualif., NVQ or HND | 17.4 (8)       | 18.2 (4)                                    | 11.7 (9)       |
| Undergraduate degree                           | 30.4 (14)      | 22.7 (5)                                    | 31.2 (24)      |
| Masters, PhD                                   | 15.2 (7)       | 31.8 (7)                                    | 16.9 (13)      |
| Non-UK qualifications                          | 4.3 (2)        | -                                           | -              |
| Other                                          | 2.2 (1)        | 13.6 (3)                                    | 2.6 (2)        |
| <b>Employment</b> <sup>2</sup>                 |                | <i>p</i> = 0.903                            |                |
| Employed (including part-time)                 | 41.3 (19)      | 54.5 (12)                                   | 40.3 (31)      |
| Self-employed                                  | 8.7 (4)        | 4.5 (1)                                     | 5.2 (4)        |
| Unemployed                                     | 19.6 (9)       | 9.1 (2)                                     | 14.3 (11)      |
| Retired                                        | 6.5 (3)        | 9.1 (2)                                     | 11.7 (9)       |
| Other <sup>2</sup>                             | 23.9 (11)      | 22.7 (5)                                    | 28.6 (22)      |
| <b>Marital status</b>                          |                | <i>p</i> = 0.673                            |                |
| Single                                         | 37.0 (17)      | 54.5 (12)                                   | 37.7 (29)      |
| In a relationship                              | 10.9 (5)       | -                                           | 9.1 (7)        |
| Cohabiting                                     | 8.7 (4)        | 4.5 (1)                                     | 10.4 (8)       |
| Married                                        | 34.8 (16)      | 27.3 (6)                                    | 36.4 (28)      |
| Civil partnership                              | 2.2 (1)        | -                                           | -              |
| Separated                                      | -              | 4.5 (1)                                     | 1.3 (1)        |
| Divorced                                       | 6.5 (3)        | 9.1 (2)                                     | 3.9 (3)        |
| Widowed                                        | -              | -                                           | 1.3 (1)        |
| <b>Living arrangements</b>                     |                | $\chi^2 = 0.30, p = 0.860$                  |                |
| Living alone                                   | 28.3 (13)      | 22.7 (5)                                    | 24.7 (19)      |
| Living with others                             | 71.7 (33)      | 77.3 (17)                                   | 75.3 (58)      |
| <b>V.I. severity</b> <sup>3</sup>              |                | <b><i>H</i>(2) = 0.38, <i>p</i> = 0.826</b> |                |
| Severe                                         | 41.3 (19)      | 31.8 (7)                                    | 44.2 (34)      |
| Moderate                                       | 34.8 (16)      | 40.9 (9)                                    | 23.4 (18)      |
| Mild                                           | 23.9 (11)      | 27.3 (6)                                    | 31.2 (24)      |
| Could not be classified                        | -              | -                                           | 1.3 (1)        |

<sup>1</sup> Statistical analysis excludes *non-UK qualifications* and *other*. <sup>2</sup> Due to expected frequencies of less than 5 in 5 cells (27.8%), the categories *looking after family/home*, *student*, *long-term sick/disabled*, and *Unpaid work* (e.g., *volunteering*, *intern*, *work experiences*) were collapsed into the *other* category for the statistical analysis. <sup>3</sup> Statistical analysis excludes *could not be classified*. Statistically significant results are shown in bold. Results for Fisher's exact test are shown as *p*-values only. GCSE = General Certificate of Secondary Education; NVQ = National Vocational Qualification; HND = Higher National Diploma. Reproduced with permission from Ref. [21], 2023, Heinze and Castle.

### 3.1. Subgroup Differences in Priorities

Kruskal–Wallis  $H$  tests showed that there were statistically significant differences between the three groups for all domains except for ‘public attitudes’, ‘emotional support’ and ‘accessible information’, and for all issues except for *cost/availability of specialist equipment*, *accessibility features of mainstream tech*, *help with job applications/interview preparation*, *support and training for mainstream education staff to adapt courses for people with V.I.*, and *reduction of street clutter* (Table 3), although the latter was approaching statistical significance. White participants generally rated all issues as less important than Asian and Black participants.

Post hoc comparisons found no statistically significant differences between Asian and Black participants. But, there were statistically significant differences between White and Asian and White and Black participants in the domains of education ( $p = 0.003$  and  $p = 0.033$ ) including *specialist education for young people with V.I.* ( $p = 0.035$  and  $p = 0.002$ ), employment ( $p = 0.015$  and  $p = 0.006$ ) including *employer attitudes* ( $p = 0.007$  and  $p = 0.012$ ), technology ( $p < 0.001$  and  $p = 0.006$ ) including *internet use* ( $p = 0.001$  and  $p = 0.043$ ) and *tech training* ( $p = 0.001$  and  $p = 0.01$ ), accessible environments ( $p = 0.010$  and  $p = 0.039$ ) including *accessibility of public buildings* ( $p = 0.010$  and  $p = 0.010$ ), and efficacy ( $p = 0.003$  and  $p = 0.010$ ) including *support to look after self and one’s home* ( $p = 0.002$  and  $p = 0.017$ ).

There were further statistically significant differences between White and Asian but not Black participants in the finance ( $p = 0.006$ ), including *benefits* ( $p = 0.017$ ), and social domains ( $p = 0.007$ ), including *meeting like-minded people* ( $p = 0.007$ ), as well as the issues of *online learning* ( $p < 0.001$ ), *new tech* ( $p = 0.001$ ), *better navigation aids* ( $p = 0.001$ ), *public transport* ( $p = 0.041$ ), *information about eye conditions* ( $p = 0.006$ ), and *street clutter* ( $p = 0.045$ ).

In contrast, there were statistically significant differences between White and Black but not Asian participants in the issue of *specialist workplace equipment* ( $p = 0.007$ ).

There were no statistically significant differences between any groups in the importance of *confidence in ability to do everyday tasks* and *opportunities to take part in more sporting and leisure activities*.

**Table 3.** Mean importance scores and 95% confidence interval for 10 domains and 24 issues by subgroup.

| Domains and Issues                                                                   | Asian <i>n</i> = 46 | Black <i>n</i> = 22 | White <i>n</i> = 77 | Kruskal–Wallis<br><i>H</i> (2) =  |
|--------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------------------------|
|                                                                                      | <i>M</i> (95% CI)   | <i>M</i> (95% CI)   | <i>M</i> (95% CI)   |                                   |
| <b>PUBLIC ATTITUDES</b>                                                              | 2.24 (2.00, 2.49)   | 2.09 (1.71, 2.48)   | 2.17 (1.99, 2.35)   | 1.11, <i>p</i> = 0.574            |
| <b>EMOTIONAL SUPPORT</b>                                                             | 2.11 (1.82, 2.40)   | 2.32 (1.95, 2.69)   | 1.91 (1.69, 2.13)   | 3.73, <i>p</i> = 0.155            |
| <b>SELF-EFFICACY</b>                                                                 | 2.22 (2.00, 2.44)   | 2.26 (1.96, 2.56)   | 1.80 (1.64, 1.96)   | <b>14.86, <i>p</i> &lt; 0.001</b> |
| Ongoing info/support to look after eye condition                                     | 2.30 (2.07, 2.54)   | 2.14 (1.70, 2.58)   | 1.78 (1.57, 1.99)   | <b>10.44, <i>p</i> = 0.005</b>    |
| Confidence in ability to do everyday tasks                                           | 2.26 (2.01, 2.51)   | 2.45 (2.19, 2.72)   | 2.04 (1.86, 2.21)   | <b>6.41, <i>p</i> = 0.040</b>     |
| Help/support to take care of self and home                                           | 2.14 (1.86, 2.41)   | 2.18 (1.74, 2.63)   | 1.57 (1.35, 1.79)   | <b>14.58, <i>p</i> &lt; 0.001</b> |
| <b>FINANCES</b>                                                                      | 2.33 (2.11, 2.54)   | 2.16 (1.79, 2.52)   | 1.87 (1.68, 2.06)   | <b>10.42, <i>p</i> = 0.005</b>    |
| Benefits to maintain a decent income                                                 | 2.33 (2.07, 2.58)   | 2.27 (1.86, 2.69)   | 1.83 (1.60, 2.06)   | <b>9.10, <i>p</i> = 0.011</b>     |
| Cost/availability of specialist equipment                                            | 2.33 (2.07, 2.58)   | 2.05 (1.60, 2.49)   | 1.91 (1.68, 2.14)   | 5.38, <i>p</i> = 0.068            |
| <b>TECHNOLOGY</b>                                                                    | 2.26 (2.08, 2.45)   | 2.16 (1.86, 2.46)   | 1.73 (1.58, 1.88)   | <b>22.54, <i>p</i> &lt; 0.001</b> |
| Access and support to use the internet                                               | 2.15 (1.89, 2.41)   | 2.05 (1.62, 2.47)   | 1.51 (1.28, 1.73)   | <b>14.36, <i>p</i> &lt; 0.001</b> |
| Training to use tech to its full potential                                           | 2.26 (2.02, 2.50)   | 2.27 (1.88, 2.66)   | 1.68 (1.47, 1.88)   | <b>15.98, <i>p</i> &lt; 0.001</b> |
| Accessibility features of mainstream tech                                            | 2.24 (2.00, 2.47)   | 2.27 (1.96, 2.58)   | 1.99 (1.79, 2.19)   | 3.46, <i>p</i> = 0.177            |
| New smart tech/apps for people with V.I.                                             | 2.37 (2.11, 2.63)   | 2.18 (1.78, 2.58)   | 1.81 (1.61, 2.00)   | <b>14.45, <i>p</i> &lt; 0.001</b> |
| Better route planning and navigation aids                                            | 2.29 (2.03, 2.55)   | 2.05 (1.62, 2.47)   | 1.69 (1.48, 1.90)   | <b>14.45, <i>p</i> &lt; 0.001</b> |
| <b>EMPLOYMENT</b>                                                                    | 2.12 (1.84, 2.40)   | 2.39 (2.15, 2.64)   | 1.76 (1.55, 1.96)   | <b>13.05, <i>p</i> = 0.001</b>    |
| Help with job applications/interview preparation                                     | 1.91 (1.57, 2.25)   | 2.05 (1.62, 2.47)   | 1.51 (1.27, 1.76)   | 5.89, <i>p</i> = 0.053            |
| Employer attitudes                                                                   | 2.42 (2.14, 2.70)   | 2.59 (2.27, 2.92)   | 1.97 (1.74, 2.21)   | <b>13.04, <i>p</i> = 0.001</b>    |
| Specialist V.I. equipment in the workplace                                           | 2.04 (1.71, 2.37)   | 2.55 (2.25, 2.84)   | 1.79 (1.55, 2.03)   | <b>9.92, <i>p</i> = 0.007</b>     |
| <b>EDUCATION</b>                                                                     | 2.15 (1.91, 2.40)   | 2.17 (1.92, 2.41)   | 1.64 (1.44, 1.84)   | <b>13.23, <i>p</i> = 0.001</b>    |
| Specialised education/support for children/young people with V.I.                    | 2.24 (1.96, 2.51)   | 2.59 (2.27, 2.92)   | 1.71 (1.45, 1.97)   | <b>13.87, <i>p</i> &lt; 0.001</b> |
| Distance/online learning courses/training                                            | 2.02 (1.72, 2.32)   | 1.77 (1.36, 2.18)   | 1.30 (1.08, 1.52)   | <b>15.48, <i>p</i> &lt; 0.001</b> |
| Support/training of mainstream education staff to adapt courses for people with V.I. | 2.20 (1.91, 2.48)   | 2.14 (1.74, 2.53)   | 1.91 (1.66, 2.16)   | 1.86, <i>p</i> = 0.395            |
| <b>ACCESSIBLE INFORMATION FROM SERVICE PROVIDERS</b>                                 | 2.17 (1.92, 2.43)   | 2.05 (1.70, 2.39)   | 1.90 (1.69, 2.10)   | 3.02, <i>p</i> = 0.221            |
| <b>ACCESSIBLE ENVIRONMENTS</b>                                                       | 2.33 (2.12, 2.54)   | 2.38 (2.18, 2.58)   | 2.00 (1.84, 2.15)   | <b>11.07, <i>p</i> = 0.004</b>    |
| Accessibility of public transport                                                    | 2.46 (2.20, 2.71)   | 2.45 (2.07, 2.83)   | 2.17 (1.99, 2.35)   | <b>7.54, <i>p</i> = 0.023</b>     |
| Reduction of obstacles and street clutter                                            | 2.40 (2.17, 2.63)   | 2.27 (1.96, 2.58)   | 2.05 (1.85, 2.25)   | 5.96, <i>p</i> = 0.051            |
| Design and accessibility of public buildings                                         | 2.15 (1.84, 2.46)   | 2.41 (2.15, 2.67)   | 1.77 (1.57, 1.96)   | <b>12.82, <i>p</i> = 0.002</b>    |
| <b>SOCIAL</b>                                                                        | 2.08 (1.87, 2.29)   | 1.98 (1.63, 2.33)   | 1.64 (1.47, 1.81)   | <b>10.37, <i>p</i> = 0.006</b>    |
| Ability to connect to like-minded people                                             | 2.17 (1.92, 2.43)   | 2.00 (1.59, 2.41)   | 1.68 (1.47, 1.88)   | <b>9.60, <i>p</i> = 0.008</b>     |
| Participate in more sporting/leisure activities                                      | 1.98 (1.69, 2.26)   | 1.95 (1.51, 2.40)   | 1.61 (1.40, 1.82)   | <b>6.32, <i>p</i> = 0.042</b>     |

Statistically significant results are shown in bold.



### 3.2. Priority Issues for Each Group

There was relatively little variation in mean importance scores among Asian participants. Domain mean importance scores in this group ranged from 2.08 to 2.33 and from 1.91 to 2.46 for issues, equating to an assessment of all domains as *very important*. Domain mean importance scores were highest for ‘accessible environments’ ( $M = 2.33$ , 95% CI: 2.12, 2.54) and ‘finances’ ( $M = 2.33$ , 95% CI: 2.11, 2.54), ‘technology’ ( $M = 2.26$ , 95% CI: 2.08, 2.45) and ‘public attitudes’ ( $M = 2.24$ , 95% CI: 2.00, 2.49) (Figure 1). *Accessibility of public transport* ( $M = 2.46$ , 95% CI: 2.20, 2.71), *employer attitudes*, ( $M = 2.42$ , 95% CI: 2.14, 2.70), and *reduction of obstacles and street clutter* ( $M = 2.40$ , 95% CI: 2.17, 2.63) were the most important issues. Domain mean scores were lowest for ‘employment’ ( $M = 2.12$ , 95% CI: 1.84, 2.40), ‘emotional support’ ( $M = 2.11$ , 95% CI: 1.82, 2.40), and ‘social participation’ ( $M = 2.08$ , 95% CI: 1.87, 2.29). The three least important issues were *support with job applications* ( $M = 1.91$ , 95% CI: 1.57, 2.25), *opportunities to participate in more sporting and/or leisure activities* ( $M = 1.98$ , 95% CI: 1.69, 2.26), and *availability of remote learning courses* ( $M = 2.02$ , 95% CI: 1.72, 2.32).

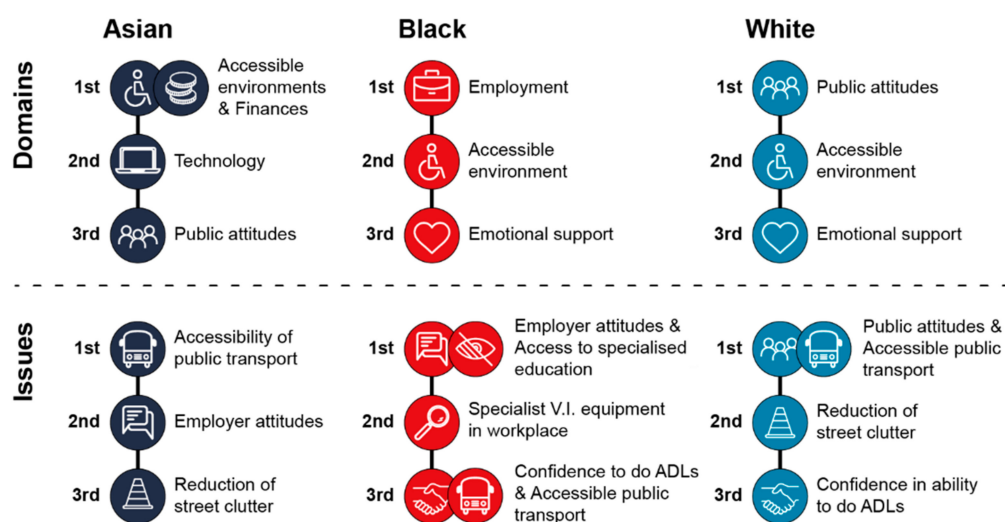


Figure 1. Top-3 domains and issues by subgroup (Asian, Black, White).

In contrast, there was slightly more variation in mean importance scores of participants from Black communities. Domain mean importance scores ranged from 1.98 to 2.39 (*very important*), but issue mean importance scores ranged from 1.77 (*very important*) to 2.59 (*extremely important*). Domain mean importance scores were highest for ‘employment’ ( $M = 2.39$ , 95% CI: 2.15, 2.64), ‘accessible environments’ ( $M = 2.38$ , 95% CI: 2.18, 2.58), and ‘emotional support’ ( $M = 2.32$ , 95% CI: 1.95, 2.69). The most important issues were *employer attitudes* ( $M = 2.59$ , 95% CI: 2.27, 2.92) as well as *access to specialised education and support for children and young people with V.I.* ( $M = 2.59$ , 95% CI: 2.27, 2.92), *availability of specialist V.I. equipment in the workplace* ( $M = 2.55$ , 95% CI: 2.25, 2.84), and *confidence in their ability to do everyday tasks* ( $M = 2.45$ , 95% CI: 2.19, 2.72), as well as *accessibility of public transport* ( $M = 2.45$ , 95% CI: 2.07, 2.83). Domain mean importance scores were lowest for ‘public attitudes’ ( $M = 2.09$ , 95% CI: 1.71, 2.48), ‘accessible information’ ( $M = 2.05$ , 95% CI: 1.70, 2.39), and ‘social participation’ ( $M = 1.98$ , 95% CI: 1.63, 2.33). The least important issues were, again, *availability of remote learning courses* ( $M = 1.77$ , 95% CI: 1.36, 2.18) and *opportunities to participate in more sporting and/or leisure activities* ( $M = 1.95$ , 95% CI: 1.51, 2.40), as well as the *ability to connect to like-minded people* ( $M = 2.00$ , 95% CI: 1.59, 2.41).

## 4. Discussion

Limited research has explored the experiences of MEC adults with V.I. in the UK [15]. This article set out to explore priority issues among Asian and Black adults with V.I. and compare these to a subgroup of White participants. Findings for the UK V.I. population tend to relate predominantly (e.g., Refs. [40,41]), and sometimes exclusively, to White

participants (e.g., Refs. [42,43]). This may reflect recruitment issues [44] and a lack of reporting of ethnicity as part of sample demographics (e.g., Refs. [45,46]), resulting in small subsample sizes that do not allow for subgroup analysis. However, as a consequence, the needs and priorities of MEC participants may be lost. For instance, 'public attitudes' is the domain with the highest priority among White but not Asian and Black participants. It is also the domain with the highest priority in the full sample ( $M = 2.18$ ).

Although the findings are based on a small convenience sample and can, therefore, not be extrapolated to the wider V.I. population, post hoc analyses showed that the two MEC groups in this sample rated all domains as significantly more important than White participants, except for 'accessible information' and 'public attitudes', which appeared to be of similar importance. In addition, 'finances' and 'social participation' related issues were significantly more important to Asian but not Black participants. It is unclear if this reflects greater need or response style, whereby participants from the two MEC groups tended to rate all issues as important rather than select issues with the biggest impact on their QoL. In contrast, there were no statistically significant differences between Asian and Black participants. This may be due to a lack of statistical power resulting from small subsample sizes. Instead of conducting subgroup analysis for a combined MEC group, subgroup analyses comparing Asian and Black participants were included to account for inherent cultural differences between communities that are routinely grouped together in a BAME category [47]. Indeed, descriptive analyses show that there were some non-significant differences between the two groups in the relative importance of different issues that can impact QoL.

'Accessible environments', particularly *accessibility of public transport*, emerged as a top priority across all groups (Figure 1). Indeed, it was the most important priority (alongside 'finances') among Asian participants. In addition, *reduction of street clutter* ranked among the most important issues for Asian and White participants. Collisions with street obstacles are a common problem among people with V.I. A survey of 500 people with V.I. found that 95% had collided with street obstacles in the past 3 months, most commonly with cars parked on pavements followed by bins, permanent and temporary street furniture, and advertising boards [48]. Even though Black participants (50.0%) were slightly more likely than Asian (45.7%) and White participants (41.6%) to have been injured in the past year by an obstacle on the pavement, such as parked cars, advertising boards, rubbish or bikes, *reduction of street clutter* was of comparatively less importance to this group. A further similarity between all groups was the low importance of *support with job applications and interview preparations* (possibly because a majority in all groups were self-/employed) and 'social participation', despite the impact of V.I. on participation in sports and leisure activities [49,50]. The latter may reflect good access to social activities and networks or greater needs related to daily functioning.

'Finances', 'technology', and 'public attitudes' were additional top priorities for Asian participants. Concern about finances may be expected considering the additional costs associated with V.I., which has been found to increase the weekly budget (excluding rent) required to achieve a minimum, socially acceptable standard of living outside of London [8]. Technology can play an important role in the QoL of people with V.I. through remotely delivered vision rehabilitation and support [51] and by facilitating social contact, access to information, entertainment, and route planning, [52]. Issues, such as the *development of new smart technology and apps*, were highly important among Asian participants in this sample. Notably, the least important technology issue, *access and support to use the internet*, ranked higher than issues such as *emotional support to come to terms with V.I.*, despite significantly poorer mental well-being among Asian compared to Black participants in this sample [21]. Noteworthy, also, is the importance of *employer attitudes*, despite the low priority of employment overall.

In contrast, Black participants prioritised 'employment' and 'emotional support' to come to terms with their V.I. alongside 'accessible environments'. *Employer attitudes* and *availability of specialist V.I. equipment in the workplace* were priority issues for Black partici-

pants, as was *specialised education and support for children with V.I.* The importance of these issues may reflect lower employment rates among adults with V.I. [4], and the barriers to employment posed by negative employer attitudes and the lack of adjustments made in the workplace [3,6]. However, as indicated earlier, the role of ethnicity in employment status is unclear [12,16]. In the current sample, there were no statistically significant group differences in employment status. As such, the perceived importance of employment-related issues did not reflect differences in status. Instead, it may reflect dissatisfaction with the roles, career prospects, and/or workplace support available to Black participants.

*Confidence in their ability to do everyday tasks* was a further priority issue among Black and White but not Asian participants. This relates to functioning and activities of daily living. There is evidence of a negative impact of sight loss on activities of daily living [53,54], which, in turn, can impact the extent to which people feel independent and are able to live independently. This finding may reflect differences in the extent to which participants in these groups are limited by their V.I. and/or comorbid conditions and the extent to which they have received vision rehabilitation to help them live independently. Future research could explore other factors that may impact self-efficacy and the perceived importance of it. For instance, Cross and colleagues [55] describe ingroup stereotypes of Afro-Caribbean people, particularly women, as being proud, stoic, and independent. These contrast associations of blindness with victimhood, helplessness, and social isolation. It is possible that the importance of *confidence in their ability to do everyday tasks* and employment issues among Black participants reflect a desire to increase independence to fit cultural norms. The importance assigned to emotional support among Black participants in this sample is encouraging considering the barriers to help-seeking, particularly for mental and emotional health support, identified within these communities. These include practical barriers such as the cost and availability of support, fear of stigmatisation, associations of help-seeking with weakness, and distrust and concerns about confidentiality of the information shared with practitioners [56–58]. This may be particularly pertinent among African-Caribbean men [58] and some Asian communities. For instance, attitudes towards seeking psychological help were similar among Chinese and British university students [59], but generally negative among South Asian students, with more negative attitudes being associated with being male, greater identification with one's ethnic identity, greater cultural mistrust, and greater adherence to Asian values [60]. A higher prevalence of depression has been found among Pakistani compared to White women [61], but there is no evidence relating to the prevalence of distress after sight loss in different communities. It is unclear if Asian participants in this sample, among whom 'emotional support' was one of the least important priorities, had access to better emotional support, or prioritised other, more functional, support. Despite the benefits of technology and the higher prevalence of households from Black communities in the lower household-income brackets [14], 'technology' and 'finances' were of comparatively low importance among Black participants in this sample. Future research could explore the technical literacy among different MEC groups to identify support needs.

Future research will also need to explore the reasons for differences in priorities in this sample. While high importance may reflect a greater support need, it may equally reflect cultural and individual differences in the value attached to a specific area of life, such as finances and technology for Asian participants and employment for Black participants. Similarly, the comparatively low importance of issues may reflect a lower impact of V.I. in this area, better support available, a greater need in other areas of life, or less value attached to this area of life. A detailed exploration of differences in status was outside the scope of this article. Perceived importance and status relating to health and comorbidity [24], mental and emotional well-being [21], prejudice and discrimination [21], accessibility [25], social participation and relationship [23], and the use of eye health and support services [22] are discussed elsewhere in this series. The observed differences may also be an artefact of the question used. Although mean or median scores on Likert scales are routinely used to assess group differences and within-group changes, their real-world significance has been questioned. For instance, Ogden and Lo [62] found that responses on Likert scales are

impacted by how participants understand the question (frame of reference) and who they use as a reference group (method of comparison). Elsewhere, changes in the visual field in early-stage glaucoma patients were accompanied by a statistically significant deterioration in vision-related QoL, as measured by a Likert scale [63]. However, on average, this translated into changes from ‘no difficulty’ to ‘a little bit of difficulty’ on only 4 of the 15 scale items. In the current study, for example, it is difficult to assess the real-world difference between a score of 2.42 and of 1.97, which indicates that, on average, *employer attitudes* were *very important* for both Asian and White adults.

### Limitations

The findings relate to a small, non-probability-based sample and can, therefore, not be extrapolated to the wider V.I. population. Indeed, the sample, particularly the matched White subgroup, is younger than would be expected, although the UK does not monitor V.I. in the population. Asian and Black participants were not matched. While there were no statistically significant differences in the demographics between these groups, small response differences may reflect factors other than ethnicity. The small subsample sizes resulted in a lack of statistical power. Future research will need to confirm findings in a larger, representative sample. This may also enable more detailed subgroup analysis based on different ethnic subgroups, age groups, degree of V.I., and eye conditions. The latter can have different patterns of visual loss and may affect daily life in different ways.

A full and objective clinical profile of participants’ eye conditions and degree of V.I. was not available. Instead, V.I. severity was based on self-report, with its associated limitations. Furthermore, the 24 issues covered a range of life domains, but important issues may be missing from this list. There is also considerable variation in the number of issues relating to the individual domains and some crossover. For instance, *better route planning and navigation aids* were categorised as a technology-related issue but could have been categorized as an independent-mobility-related issue. Some issues would have benefited from an explanation, as was given for the issue accessibility of public transport (signage, announcement, training of drivers/staff), to ensure participants used the same ‘frame of reference’ [62]. For instance, participants may have very different ideas of what “specialised education” means based on when they completed their education and if they had a V.I. during their education. Responses to this issue may, therefore, have qualitatively different meanings. There is the further possibility that cultural differences impacted upon the interpretation of question and/or response wording. Lee, Jones [64], for example, found differences in how people who self-identified as Chinese, Japanese, and American responded to a Likert scale.

The question about the importance of issues was asked at the end of the survey. Responses to this question could have been influenced by preceding questions (question order effect), e.g., Refs. [65–67]. For example, preceding questions about charity awareness and usage, and domestic support could have increased the perceived importance of *confidence in my ability to do everyday tasks*.

Finally, the question required participants to define QoL, identify areas in which changes would impact their QoL, identify priorities, and rate the importance of issues, making it cognitively burdensome. Although participants were prompted to think about the impact on their own lives, most of the questions related to ‘other people’; only one or two referred to ‘my’ or ‘myself’. This makes it difficult to interpret the findings with certainty. For instance, an extremely important response may reflect the importance to people with V.I. in general or the participant. Similarly, it may reflect how important employer attitudes are to well-being or how important improvements in employer attitudes are to well-being. Despite these limitations, the question provides a useful, albeit preliminary, insight into the importance of different issues among a sample population about whom very little is known.

## 5. Conclusions

This article provides a preliminary insight into the issues that are important to a small convenience sample of adults with V.I. who are from different ethnic communities in the UK. The findings show that there are statistically significant differences with majority White participants. Although not statistically significant, differences between Asian and Black participants indicate slightly different priorities and needs among two groups that are routinely grouped together. While Asian participants may prefer support relating to their finances, Black participants may benefit from employment-related support. This highlights the risk that community-specific needs and issues are missed, especially if there are unequal sample sizes, and diverse groups are treated as one group and the need for more research which addresses priorities and needs in individual ethnic groups. Practitioners may also need to take into account ethnic group differences in needs when developing and providing support to beneficiaries from different ethnic backgrounds.

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/disabilities4030030/s1>, Table S1: V.I. severity classification based on survey responses.

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