Knowledge, attitudes and practices in eye health and disability in Sierra Leone

Study Report 2014

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List of Abbreviations

BLVP	Blind and Low Vision Persons
DHMT	District Health Management Team
DHS	Demographic and Health Survey
DPO	Disable People's Organization
EA	Enumeration Area
FHCI	Free Health Care Initiative
HMIS	Health Management Information System
MSWGCA	Ministry of Social Welfare, Gender and Children Affairs
KAP	Knowledge Attitude Practice
PEC	Primary Eye Care
PHU	Peripheral Health Unit
RAAB	Rapid Assessment of Avoidable Blindness
SHG	Self-help Group

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Executive Summary

Background

Sierra Leone is located on the West coast of Africa, sharing its land borders with Guinea and Liberia and covering an area of about 27,925 square miles. At the time of the study the country had a population of about 5.9 million people and was divided into four administrative regions; the Northern, Southern and Eastern provinces, and the Western Area where the capital city of Freetown is located.

The national Rapid Assessment of Avoidable Blindness (RAAB) survey conducted in 2010/2011, estimated the prevalence of blindness among people aged 50+ years at 5.9%. Over 91% of blindness was considered to be avoidable. Cataract was the major cause of blindness and severe visual impairment (SVI), followed by glaucoma.

Sightsavers has been working in Sierra Leone since the 1950s. In 2012, Sightsavers and the Ministry of Health and Sanitation (MoHS) started a four-year project to support eye care and disability services throughout the country. The project has been funded by the European Commission (EC) and the Standard Chartered Bank. The study presented in this report was integrated in this project and aimed to assess population knowledge, attitudes and practices with regards to eye health and disability and explore the experiences of people with disabilities in accessing health care and other services.

Study specific objectives were:

a) Ascertain the general public's knowledge, attitude and practices regarding eye health and common eye conditions

b) Assess the general public's perception of disability and attitudes towards persons with disabilities, with a particular focus on persons who are blind and have low vision

c) Understand the experiences of people with disabilities in accessing health care and other services and community activities

d) Identify the main barriers to eye care and social inclusion of people with disabilities

e) Establish baseline data for future assessments and monitoring the progress of the project

Methods

The study used a mixed-method approach, including a cross-sectional survey of the general population, and qualitative interviews with people with disabilities.

A multi-stage random sampling was used to select survey respondents. First, four districts were selected randomly among 14 districts representing the four provinces of Sierra Leone. Second, 100 enumeration areas (EA) were selected randomly from each selected district. At the third stage, the team of enumerators visited each EU and selected 11 households per EA using a random-walk method. The survey collected data on individual and household characteristics, utilisation of eye care services, exposure to health information, awareness of blindness and common eye diseases, attitudes towards people with disabilities and knowledge of the existing disability laws. Household wealth was measured based on the

infrastructure and durable assets. Prevalence of disability at the household level was measured using the six-item Washington Group Short Set of Questions on Disability (WGSS). Disability was defined using the WGSS recommended threshold of 'a lot of difficulty' or 'cannot do it at all' in at least one of the six domains: vision, hearing, mobility, cognition, self-care and communication.

Qualitative interview participants were recruited from the survey sample using a purposive quota-based sampling approach, to ensure a diversity of participants in terms of sex, age, residence and type of impairment. Only residents 18 years and above were included in the study.

Survey data were analysed using STATA 12.0; qualitative data were analysed using NVivo 10. Ethics clearance for the study was obtained from the Ethics and Scientific Review Committee of the Ministry of Health & Sanitation of Sierra Leone.

Results

Survey findings

Respondent characteristics

A total of 1099 individuals from four districts (Bonthe, Kenema, Koinadugu and Western Urban area) participated in the study (99.8% response rate). Fifty-five% of respondents were female; and 36.5% were aged 18-34 years. About 52% of respondents were married, while 28% were single. Nearly 70% of respondents were Muslim and over 28% were Christian.

Around 40% of the sample had no formal education with significant differences between the districts. In Bonthe and Koinadugu, over two thirds of the respondents had never been to school. Among those who received some form of education, 34.2% had achieved secondary (junior or senior) education and 9.7% had completed primary school only. One in ten participants reported vocational/technical training and one in twenty reported higher education. These participants were primarily found in the Western area. In terms of employment, 64% of the sample reported that they had been engaged in an economic activity over the last year. The majority were working in agriculture (28.2%) followed by petty traders (15.5%) and professional, technical or managerial positions (7%). About one in three respondents engaged in economic activities (33.5%), reported no cash earnings for their work. The majority of the non-cash earners were engaged in subsistence activities such as farming or fishing (62.2%). Based on the household poverty index, the Western Area was the richest of the four districts with 46% of participants from this district belonging to the top wealth quintile (Q5). Participants from Koinadugu on the other hand, were the poorest with 62% of the households belonging to the poorest quintile (Q1).

Disability at the household level

Overall 38% of the households reported having at least one of their members having a functional limitation (some difficulty, a lot of difficulty or cannot do at all) in at least one of the six domains. The most common types of reported limitations were vision (21.5%), mobility (12.6%) and hearing (7.5%). Using the Washington group recommended cut off point for

disability (a lot of difficulty or cannot do at all in at least one domain) 92 (17.3%) of the households had at least one person with a disability.

Exposure to eye health messages

Half of the respondents (50%) remembered being exposed to eye health information in the year preceding the survey. The three most common sources of eye health information were radio (55%), friends or relatives (38%) and screening camps (31%). Only 11% cited television as a source of eye health messages. Respondents from the wealthiest households [OR= 2.98; CI 95%: 1.66-5.34]; those with formal education [OR= 1.98; CI 95%: 1.48-2.65] an those with self-reported poor vision [OR= 2.27; CI 95%: 1.06-4.85] were more likely to have received information or messages about eye health. The vast majority of individuals in our sample (85.5%) were aware of the Free Health Care Initiative, which targets pregnant and lactating women and children under five. However, only 20% of respondents knew that the policy could be used to get free eye care services.

Knowledge about blindness and eye conditions

The majority of the respondents believed that blindness could be either prevented (75%) or cured (82%). When asked about the factors that could cause blindness, the most frequent response was eye diseases (48%); followed by injury/accident (43%), supernatural factors or witchcraft (29%), hereditary factors (15%), and dust (12%). Fewer respondents (28%), knew that blindness could be caused by other factors including exposure to sun light and various substances (e.g. water, smoke, chemicals) or nutrition.

There was also a high level of awareness about cataract (84.5%) and about half of the respondents knew about refractive errors (54%), and onchocerciasis (51%). Only 5.1% of respondents had ever heard of glaucoma.

Among respondents who had heard about cataract; 36% correctly responded that it was caused by opacity of the lens and nearly one in two respondents correctly responded that it could be treated by surgery (49%). Yet, about a third of the respondents believed that cataract could be treated using traditional medicine (31%), although only 4.4% referred to couching.

Among those who had heard about river blindness, 65% knew that it could be prevented. Most of the respondents also cited itching (51.5%), as a symptom of the disease, but fewer referred to skin problems (16.5%), skin nodules (11%) or depigmentation (5%). Only one in five respondents mentioned blindness as one of the possible manifestations of onchocerciasis (22%).

Among the respondents who knew about refractive errors, the majority associated it with blurred vision (73%) and over 70% knew that the sight could be restored (73.5%). The most frequently cited treatments were wearing spectacles (46%) or contact lenses (25%), and eye surgery (15%).

Among a few respondents, who had heard about glaucoma, the majority knew that it could lead to blindness (86.5%). However. only one in three were aware that vision loss from glaucoma could be prevented (33%) but very few knew that blindness caused by glaucoma was irreversible (12%) and that there were no early signs of glaucoma (5.8%).

Age, self-reported vision and education were most consistently associated with the knowledge of different eye conditions. Knowledge of cataract was associated with older age and living in Bonthe and Kenema. Knowledge of river blindness was associated with older age, education, poorer vision, relative wealth and residency in Bonthe and Koinadugu. Knowledge of glaucoma was associated with education, poorer vision and residency in Kenema. Knowledge of refractive error was associated with older age, relative wealth and poorer vision. There was no association between knowledge of common eye diseases and either participant sex or occupation.

Eye health seeking behaviour

Routine eye screening was not a common practice in the studied communities, as 80% of the sample reported that they had never had their eyes examined by a health care practitioner. Among those who had had their eyes examined, the main reasons for visiting a health care provider was feeling pain in the eye (40%), trouble seeing (38.5%), and eye infection, disease or injury (13%). Reasons for not seeking eye care services included no felt need (84.5%), distance to facility (38.5%), and lack of money (5%).

Most of those who sought care visited public facilities (76%), including government hospitals (56%), health centres (7.5%) or mobile clinics (6.6%). Three quarters of those, who sought care from the private sector, visited private hospitals or clinics including faith-based organisations (75%), while 17.5% visited private doctors.

The main factors associated with receiving an eye examination were vision problems and relative wealth. The odds of having an eye examination increased significantly for the wealthiest individuals [OR_{Q5}= 3.54; CI 95%: 1.87-6.70] and for respondents with poor vision [OR= 20.85; CI 95%: 9.63-45.2].

Survey respondents said that they would be more likely to get an eye examination if they were told to do so by a health worker (85%), family member or relatives (68%), religious leaders (48%), village chief (34%) and informal providers or peddlers (26%).

Perception of disability by the general public

The survey explored the knowledge and perception of disability in the general public. First, respondents were asked to rate different types of impairment based on how much they thought it would affect their day-to-day life. Overall respondents believed that both vision loss and memory (cognitive) loss would have the biggest impact, followed by the loss of a limb, loss of speech, and loss of hearing.

Respondents were also asked to share the words they primarily associated with disability. The overwhelming response was compassion and/or empathy (80%) with a small proportion of those, who associated it with care/support (9%) and disease or illness (6.5 percent). Most respondents agreed with the statement that people with disabilities were equal members of society (86%) and that the government and communities should do everything in their power to ensure equal opportunities for people with disability, regardless of the costs (86%). Respondents also believed that the community should support people with disability by providing alms (65%), home care and personal services (40%), education or training (21.5%), ending discrimination (16%), supporting work/employment (15%), and inclusion in

community activities
(13.5%).

Attituded towards social interactions with people with disabilities

The vast majority of study participants said that they would not want to keep it secret if a family member had a disability (89%) and that they would be willing to take care of that person in their own household (92.5%). Interestingly, attitudes towards people with disabilities were associated with wealth in a rather particular way. Wealthy individuals were more likely to say that they would care for someone with a disability in their family [OR= 14.38; 3.05-67.81] but they were also more likely to keep disability in the household as secret [OR= 4.37; CI 95%: 1.61-11.80].

With regards to children with disabilities, 87% of respondents indicated that they would be willing to send their child to school if their child had a disability. Only 10% of the respondents said that children with disabilities should not go to school. Most respondents (76%) agreed that children with disabilities should go to mainstream schools with regular classes, but where the curriculum and teaching methods be adjusted for child's individual needs.

Over two thirds (76%) of respondents reported that they would employ a person with a disability with the relevant skills and qualifications, if they were in a position to do so.

However, there was some evidence that social attitudes towards disability varied depending on the type of impairment. For example, while over 90% of respondents said that they would live in the same street or settlement as a person with physical or sensory impairment (93.6% and 90.9% respectively), only 42% would accept living near someone with a mental health condition. Similarly, over 80% of respondents would accept their child socialising with a friend with physical or sensory impairment (86% and 80% respectively), while only 14% would accept it with a child had a mental health problem. With regards to marriage, half of the respondents (50%) reported that they would consent if a member of their family wanted to marry a person with physical impairment, 39.5% for a person with sensory impairment, and only 7.6% for a person with mental health disability. The proportion of positive responses was even lower when the respondents were asked if they themselves would marry someone with a disability, including physical disability (40%), sensory disability (33%), and mental health disability (4%).

Knowledge about legislation and organisations supporting people with disabilities

Few respondents in our sample knew about any disability related legislation or organisations supporting people with disabilities in Sierra Leone. Nearly seven out of 10 respondents (68%) reported that they had never heard of the Disability Act adopted by the Parliament in 2011; and only one in four respondents (28%) indicated that they had heard about organisations supporting people with disabilities.

The level of awareness about both legislation and organisations supporting people with disabilities increased with the levels of wealth and education after controlling for other factors. We also found that knowledge about the Disability Act was significantly higher among respondents with poor vision [OR = 2.67; CI 95%: 1.25-5.68); while knowledge of organizations supporting people with disabilities was higher among men [OR = 1.38; CI95%= 1.02, 1.86] and those from the households with a history of impairment/disability [OR = 1.5; CI 95%: 1.11-2.03].

Findings from in-depth interviews with people with disabilities

We conducted in-depth interviews with people with disabilities to supplement and validate the survey findings.

People with disabilities interviewed, reported that they faced severe limitations in their day-to-day activities; many had to stop working or carry out other income generating activities because of their impairment. In line with previous studies in Sierra Leone, we found that people with disabilities often relied on their families for care and economic support, which created many challenges, particularly for poorer households.

Attitudes towards people with disabilities in the studied communities varied. Some participants had good relationships with their neighbours and others in the community. Others experienced stigma, indifference and neglect. Overall, people with disabilities seemed to be more supported by their families than the broader community; and social attitudes often depended on other individual characteristics, such as person's age, social position, prior involvement in the community and sometimes, the type of impairment. For example, older and well-known individuals who had been involved in decision-making for their community prior to the onset of disability, usually continued to play an important role, even when it was physically challenging and required assistance from others.

Respondents also spoke about their reduced interactions with the social environment and community life. But the reasons for this were multifaceted. Some did not have financial resources or someone to accompany; others were ashamed of how different they were from others and were afraid of being rejected.

Access to healthcare services for people with disability remain a challenge but the barriers to accessing health services for people with disabilities were not different from those for other people in the community. Financial difficulties were the most important reason given by people with disability for not accessing services. Many respondents said that they did not go to health facilities because they did not have money to pay for transportation and treatments. The knowledge of health care services was not a major problem for people with disabilities. Many knew where to access health care. However, many facilities were far away and people with disabilities needed transport and someone to accompany them. Some participants said that they could only access health services when their family members or others in the community were willing to provide transport, accompany them to the facility and pay their consultation fees.

Similarly to the survey data, qualitative interviews also showed that many people with disabilities were unaware of the Disability Act or non-government organisations supporting people with disabilities. Very few said that they had directly benefited from the legal entitlements of NGO support. However, those who were directly involved in the disability movement, Disabled People's Organisations (DPOs) or self-help groups, were generally positive about their experiences and reported that this involvement had had a significant positive impact on their lives.

The key area where people with disabilities interviewed wanted to see improvements, was the implementation of the Disability Act and more specifically, financial aid for people with disabilities for basic necessities (food, housing, clothes), access to medical treatment, access to education for them and their children, training in business management skills and access to start-up capital for small businesses.

Conclusions

The study has identified a number of implications for both eye health and disability policies and programmes.

The findings suggest that most people in Sierra Leone are aware about blindness and common eye conditions. The knowledge of cataract is particularly strong; at least half of the population are also aware of river blindness and refractive errors but very few know about glaucoma. Interestingly, river blindness is more commonly associated with skin problems than vision loss, possibly due to the effect of the long-standing prevention programmes and resultant drop in the prevalence of visual impairments caused by the disease.

Routine eye examinations however are not common in this population. People visit health care practitioners only when they experience deterioration in vision, infections, injuries or pain. Asymptomatic eye conditions are not viewed as priorities, not least because health care facilities are located far away and require financial resources to pay for transport and consultations.

The findings call for awareness raising campaigns, particularly around glaucoma and the benefits of routine eye examinations. The most effective channels of communication in these communities are likely to be radio and the word of mouth. Radio programmes and community champions spreading messages about routine screening could be trialled in these settings. Similarly, to other studies, awareness of eye conditions and a need for eye examination was higher for individuals with formal education and from wealthier households. It is therefore important that awareness raising campaigns target specifically population sub-groups, which are least exposed to health information, i.e. those, who are illiterate and from the poorest households.

It is however important not to underestimate the effect of user fees and long distances as barriers to the uptake of eye care services. It is, therefore, important to continue providing programmes, supported by iNGOs and other external donors, which provide outreach services to the poorest and remote communities and either fully or partially subsidise the costs of transportation and treatment. It is also important to raise awareness of the opportunities for receiving free eye care for eligible populations (pregnant and lactating women and children under five) under the Free Health Care Initiative. It is also important to explore other options of moving at least some of the basic eye care services closer to the

communities. Sierra Leone has recently piloted task shifting in eye care with the new role of ophthalmology community health officers. This strategy may not be able to address the problem of visual impairment caused by more complex eye conditions but may raise public awareness and promote routine screening practices.

Prevalence of disability, as measured by the Washington Group questions, was similar to the studies in other similar settings showing that at least 17% of the adult population in these community's experience significant functional limitations. Like other studies, our findings suggest that the majority of the general population in the studied districts have positive attitudes towards people with disabilities and support equal opportunities and social inclusion. However, it is well known that social attitudes expressed in such population-based studies are rarely indicative of the social behaviours and our qualitative findings show that the experiences of stigma and social neglect vary between and within the communities. Such experiences are also influenced by other individual characteristics of people with disabilities, including sex, age, social status and type of impairment. People with intellectual or mental health disabilities appear to be particularly at risk of social stigma and discrimination.

Our findings also show that there is limited knowledge of the Disability Act and organisations supporting people with disabilities in Sierra Leone; this knowledge is equally limited in the general public and among people with disabilities. We also found a significant gap between the formally articulated disability policies and their implementation in practice. It is therefore critical that future social inclusion programmes raise awareness of the disability legislation, alongside effective accountability mechanisms, which monitor the implementation of the disability laws.

The study suggests that despite the progressive legal framework adopted by the Government of Sierra Leone, people with disabilities experience significant challenges in their day to day life, including poverty, limited access to education and employment opportunities and unaffordable health care services. There is no doubt that addressing these issues in the challenging context of Sierra Leone is an extremely difficult task. Future social inclusion programmes need to try to develop and test locally appropriate solutions, which can be delivered and sustained in the socio-economic and political realities of the country.

1. Background

Sierra Leone is located on the West coast of Africa sharing its land borders with Guinea in the North and Northwest and Liberia in the Southeast and covering an area of about 27,925 square miles. The country has a population of about 5.9 million[1] and is divided into four administrative regions, i.e. the Northern, Southern and Eastern provinces, and the Western Area where the capital city of Freetown is located. The country is further sub-divided into 14 districts, 19 local government councils and 149 chiefdoms, headed by traditional leaders (Government of Sierra Leone, 2010).

The national Rapid Assessment of Avoidable Blindness (RAAB) survey conducted in 2010/2011 estimated the prevalence of blindness among people aged 50+ years at 5.9%. The all-age population prevalence was estimated at 0.7% or 43,842 people. Over 91% of blindness was considered to be avoidable. Cataract was the major cause of blindness and severe visual impairment (SVI), followed by glaucoma (Sightsavers, 2011).

Two thirds of those who are blind in Sierra Leone are women (Sightsavers, 2011). Women are often more vulnerable to eye diseases due to infections and malnutrition; they also have poorer access to health information and quality eye care due to lower literacy and the lack of economic power (Trani et al., 2011).

The purpose of the RAAB survey, was to estimate the magnitude and causes of blindness and visual impairment, and to provide baseline data and guidance to the Ministry of Health and Sanitation (MoHS) and its partners for an effective planning and delivery of comprehensive eye care services. The lack of awareness about eye care problems and treatments available is thought to be a major factor contributing to the eye disease burden in Sierra Leone[2] (Potter et al., 2011). Although primary eye care (PEC)[3] services have not yet been fully integrated into the primary health care (PHC) system, PEC has been identified as an opportunity to reduce avoidable visual impairment through raising awareness, training community workers and teachers and early detection and timely referrals of cases (Potter et al., 2011).

Sightsavers has been working in Sierra Leone since the 1950s and continued to provide services throughout the Civil war (1991-2002). In 2012, Sightsavers and the MoHS started the implementation of a project to support eye care and disability services. The four-year project funded by the European Commission (EC) and the Standard Chartered Bank aims to address the burden of blindness and other disabilities experienced by people in Sierra Leone. The project focuses on strengthening the national health system and increasing access to health services for persons with disabilities in three regions of the country. The eye health component of the project aims to integrate eye care into primary health care, strengthen human resource for eye health and integrate disability and eye health indicators into the Health Management Information Systems (HMIS) at the national, district (District Health Management Teams (DHMT)) and community (Peripheral Health Units (PHU)) levels. It is envisaged that the data collection tools used by the MoHS will be revisited to capture

[1] 2011 projected population from 2004 population and housing census report on projection for Sierra Leone

[2] Cataract blindness, uncorrected refractive errors, onchocerciasis and glaucoma

[3] When community health workers are trained to disseminate eye health information, screen, diagnose and treat simple conditions and refer complex ones to clinics and hospitals

comprehensive data on eye health and disability. The project will also build capacities of health workers on disability and advocate for disability inclusive health care services.

2. Aim and objectives of the study

Aim:

Assess population knowledge, attitudes and practices with regards to eye health and disability and explore the experiences of people with disabilities in accessing health care services and other services in Sierra Leone.

Objectives:

a) Ascertain the general public's knowledge, attitude and practices regarding eye health and common eye conditions

b) Assess the general public's perception of disability and attitudes towards persons with disabilities with a particular focus on persons, who are blind and have low vision

c) Understand the experiences of people with disabilities in accessing health care and other services and community activities

d) Identify the main barriers to the uptake of eye care services and social inclusion of people with disabilities to inform project implementation

e) Establish baseline data sets for future assessments and monitoring the progress of the project

3. Methodology

3.1 Design and sampling

The study used a mixed-method design and applied both quantitative and qualitative data collection methods.

A) Population-based household survey

A population-based survey was carried out to determine the general public's knowledge, attitudes and practices with regards to eye health and disability.

The sample size was calculated using standard sampling parameters and a 10% non-response was estimated as 1100 individuals. A multi-stage sampling method was used, where survey clusters were selected in three stages. At the first stage, four districts were selected randomly from a list of 14 districts in Sierra Leone: Bonthe, Koinadugu, Kenema and Western Urban area. At the second stage, a number of enumeration areas (EAs) were selected randomly from the complete list of EAs in each selected district. At the third stage, the team of enumerators visited each of the 100 EAs included in the survey and selected 11 households per EA using a random-walk method. Within the households, one adult (usually the head of the household) was selected for an interview. All the necessary data were provided by the Office of Statistics of Sierra Leone based on the 2004 census data. **Table 1** summarises the sampling. For more details on sampling, please refer to **Annex 1**.

Table 1: Distribution of Respondents, Households, and Enumeration Areas

District	Region	Number of EAs included	Number of households included
Western Area (urban)	Western	46	506
Kenema	Eastern	30	330
Koinadugu	Northern	16	176
Bonthe	Southern	8	88
Total		***100***	***1100***

B) Qualitative research

Qualitative data using in-depth interviews have been collected to explore individual perspectives on eye health and disability, experiences of living with disability and experiences of accessing health care services and community activities.

A purposive quota-based sampling strategy was used for selecting people with disabilities and community leaders, to ensure a diversity of opinions and views based on participants age, sex and location. The aim was to recruit 20-30 people with disabilities and 20 community leaders per district. Community leaders were identified when visiting an EA during the population-based survey. The survey also helped to identify households with persons with disabilities, who were subsequently invited to participate in the qualitative component.

3.2. Data collection and tools

A) Population-based Household Survey

The data collection was based on a single structured questionnaire. The questionnaire included standard socio-demographic modules used in the demographic and health surveys (DHS) but was adapted to the local context. The questionnaire included five parts:

1. **Household composition and disability screening module**. It was used to enumerate all members of the household, to assess the wealth of the household based on infrastructure and durable assets and to measure prevalence of disability at the household level using the six-item Washington Group Short Set of Questions on Disability (WGSS)[4].
2. **Background characteristics:** Questions on age, marital status, ethnicity, education level, occupation, access to information channels were used to collect data on individual characteristics that are likely to influence knowledge, attitudes and practices.

[4] For further information, see http://www.cdc.gov/nchs/washington_group/wg_questions.htm

3. **General questions about health care (and eye care specifically**): This module asked questions on the current health status of the respondent, their knowledge of the national free health care initiatives, health seeking behaviour and practices in accessing health care.
4. **Blindness and eye diseases awareness:** These questions were aimed at eliciting knowledge of visual impairment and its main causes in Sierra Leone (cataract, onchocerciasis, trachoma, glaucoma and refractive error)
5. **Disability perception and attitudes towards people with disabilities:** This section focused on the perception of disability and more specifically visual impairment (its impact on day-to-day life, feelings about disability) and questions on the attitudes towards people with disabilities and their experiences in accessing services.

The questionnaire was administered in Krio (the lingua franca in Sierra Leone) by default, unless the participant expressed their preference for another language used in the district surveyed, i.e. Temne, Mende, Madingo, Fula and Kono.

Household heads that consented to take part in the survey provided information about all members of the household, including their age, sex, relationship to the head and disability status (using the Washington Group questionnaire). One adult (aged 18+ years) per household was then randomly selected and asked to participate in the survey. All individuals were provided with information about the study and signed a consent form. The survey included members of the households aged 18+ years, who did not have a disability (based on the WGSS).

If the selected member of the household was absent, every effort was made to find them by at least one call back visit at convenient times. Respondents who were not available during the repeated visit were recorded as absent and were not replaced.

B) Qualitative research

The qualitative component used in-depth interviews with two groups of participants, people with disabilities and community leaders.

a) People with disability:

In-depth interviews explored perspectives of people with disabilities on accessing services, experiences of stigma and discrimination and knowledge of disabled persons' rights and legislation. All in-depth interviews were guided by a semi structured topic guide and were audio recorded. If the respondent could not be interviewed due to his/her impairment, then the interviews were conducted with the carers or the person closest to person with disability.

b) Community leaders:

The aim of the interviews with these respondents was to explore the current situation with regards to disability related stigma and discrimination in the local communities, to identify organisations and initiatives promoting social inclusion and to examine communication channels that could be used for community sensitisation and awareness raising activities. Community leaders were asked to provided information on the following topics:

- Situation with regards to accessing health services
- Perception of eye care and disability in the communities

- Attitudes towards people with disabilities
- Existing social networks and information channels
- Community mobilisation initiatives and support systems

More information on the fieldwork teams and data collection procedures is included in **Annex 2**.

3.3 Data management and analysis

3.3.1. Data analysis

Attention has been paid to the selection of the interviewers to ensure that for each district surveyed, at least one member of the team was fluent in the local language. Data were collected by a team of 17 enumerators. The team was trained over a period of four days to ensure their understanding of the protocol, study procedures and ethics. The fieldwork took place throughout December 2013.

For the household survey, field supervisors were responsible for data verification and checking data completeness and consistency. Supervisors also monitored that all study participants signed/thumbed their consent forms. For the qualitative component, study supervisors checked the accuracy of the field notes and ensured that the audio recordings were of good quality.

3.3.2. Data analysis

All quantitative data were entered using EPI INFO software package and analysed using first, SPSS and later STATA software. Qualitative data were transcribed, translated into in English and analysed thematically using a pre-defined coding framework.

3.4 Ethical Approval

An ethical clearance for the study was obtained from the Sierra Leone Ethics and Scientific Review Committee.

Written/thumbed consents have been obtained from the head of each selected household and each study participant. Respondents, who took part in the study, did so voluntarily and no remuneration was provided for their participation. Standardised information sheets were prepared for the study participants in their local language. Enumerators shared the information sheets and consent forms with the respondents who were able to read. Respondents had an opportunity to read the information and seek clarifications. Participants could withdraw their consent at any time during the study. For the respondents who were not able to read, the enumerators explained the study, encouraged the respondents to ask questions and requested to thumb print their consent. The respondents who declined to participate were not asked for the reasons.

To ensure confidentiality, the respondents' names were not linked to the questionnaire. All paper-based data were kept in a secured place at the Dalan offices. All electronic records were protected by a password and no one apart from the research team had access to the data.

4. Results

4.1 Household survey

A total of 1099 households participated in the survey (99.9% response rate). All questions on the composition and characteristics of the household were answered by the head of the household or their representative.

4.1.1. Characteristics of the households

4.1.1.1. Dwelling characteristics and wealth

Around 40% of the households had national power supply and over 52% had battery powered light. However, there were significant district variations. The national power supply was primarily available in the Western Area (reported by nearly 79% of the households). The other three districts had predominantly battery powered light, while over 12% of the households in Bonthe used kerosene light. Similarly, over 50% of the households reported tap as their primary source of water, but this was largely in the Western area (reported by over 85% of the households) followed by Kenema (30.5%). In Bonthe, nearly half of the households used wells and another 40% used river stream springs. In Koinadugu, the majority of households used either gravity hand pump (40%) or river stream springs (31%) (**Table 2**).

Table 2: Sources of light and water in the households participating in the survey

Characteristics (N,%) [α]	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Source of Light					
Battery Powered Light (commonly called Chinese light)	65 (73.9%)	287 (87.5%)	130 (73.9%)	96 (19.1%)	578 (52.8%)
National Power Supply	2 (2.3%)	36 (11%)	2 (1.1%)	397 (78.9%)	437 (39.9%)
Kerosene Light	11 (12.5%)	2 (0.6%)	2 (1.1%)	2 (0.4%)	18 (1.6%)
Generator	0	0	1 (0.6%)	7 (1.4%)	8 (0.7%)
Solar	0	1 (0.3%)	1 (0.6%)	1 (0.2%)	3 (0.3%)

Characteristics (N,%) α	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Others	10 (11.5%)	2 (0.6%)	40 (22.7%)	0	51 (4.7%)
Missing values	0	1	0	3	4
Source of Water					
Tap	1 (1.1%)	100 (30.5%)	23 (13.1%)	431 (85.5%)	555 (50.7%)
Gravity Hand Pump	10 (11.3%)	118 (36%)	70 (40%)	23 (4.6%)	221 (20.2%)
River Stream Spring	33 (37.9%)	51 (15.5%)	54 (30.9%)	1 (0.2%)	139 (12.7%)
Wells	43 (49.4%)	59 (18%)	29 (16.6%)	39 (7.7%)	170 (15.5%)
Others	0	0	0	10 (1.8%)	10 (0.9%)
Missing values	1	1	0	2	4

α: value in parenthesis is% of columns total. It does not take 'missing values' into consideration

A poverty index was derived from the household dwelling characteristics and ownership of durable assets, as reported by the heads of the households. Multiple Correspondence Analysis (MCA) was used to compute the poverty index. The value of the index itself cannot be interpreted but is useful to divide survey respondents into wealth quintiles (with Q1 representing the poorest households and Q5 the richest 20%).

The distribution of wealth varied across the districts. The poorest households were found mainly in rural districts (62% of all households interviewed in Koinadugu, and 37.5% in Bonthe belonged to the poorest quintile). The richest households were mainly found in the Western area (which includes Freetown), where 46% of all households belonged to the richest quintile (Q5) and 33.4% to the second-richest quintile (Q4) (**Table 3**).

Table 3. Distribution of households by wealth quintile for each district

Distribution by wealth quintiles (N,%) α	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Q1 (poorest)	33 (37.5%)	72 (21.9%)	109 (61.9%)	3 (0.6%)	217 (19.75%)
Q2	29 (34%)	127 (38.6%)	45 (25.6%)	12 (2.4%)	213 (19.4%)
Q3 (middle)	23 (26.1%)	93 (28.3%)	20 (11.4%)	89 (17.6%)	225 (20.5%)
Q4	3 (3.4%)	23 (7%)	2 (1.14%)	169 (33.4%)	197 (17.6%)
Q5 (richest)	0	14 (4.3%)	0	233 (46.1%)	247 (22.5%)
Missing values	0	0	0	0	0

α: value in parenthesis is% of columns total.

4.1.1.2. Disability at the household level

In this study, disability status of different people in the household was reported by the head of the household (or their representative). Overall 37.8% of the households reported that at least one of their members was experiencing functional limitations (some difficulty, a lot of difficulty or cannot do at all) in at least one of the six domains: seeing, hearing, walking, cognition, self-care and communication. The most common types of reported limitations were vision (21.5%), mobility (12.6%) and hearing (7.5%). Using the Washington group recommended cut off point for disability (a lot of difficulty or cannot do at all, in at least one domain) 92 (17.3%) of the households had at least one person with a disability (**Table 4**).

Table 4: Distribution of Households by functional difficulty in each district (some difficulty, a lot of difficulty or cannot do)

Reported functional difficulty in the household (N,%) α	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Seeing					
Yes	9 (10.3%)	83 (25.3%)	22 (12.6%)	122 (24.1%)	236 (21.5%)
No	78 (89.6%)	245 (74.7%)	152 (87.4%)	384 (75.9%)	859 (78.4%)

Reported functional difficulty in the household (N,%) [α]	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Missing values	1	1	2	0	4
Walking/climbing					
Yes	10 (11.5%)	26 (8%)	12 (6.9%)	90 (17.9%)	138 (12.6%)
No	77 (88.5%)	300 (92%)	163 (93.1%)	414 (82.1%)	954 (87.4%)
Missing values	1	3	1	2	7
Hearing					
Yes	7 (8.1%)	28 (8.5%)	12 (6.9%)	35 (6.9%)	82 (7.5%)
No	79 (91.9%)	300 (91.5%)	163 (93.1%)	470 (93%)	1012 (92.5%)
Missing values	2	1	1	1	5
Remembering/ concentrating					
Yes	0	20 (6.1%)	7 (4%)	23 (4.6%)	50 (4.6%)
No	87 (100%)	308 (93.9%)	168 (96%)	480 (95.4%)	1043 (95.4%)
Missing values	1	1	1	3	61
Dressing/self-care					
Yes	2 (2.3%)	7 (2.1%)	9 (5.1%)	17 (3.4%)	35 (3.2%)
No	85 (97.7%)	320 (97.9%)	166 (94.9%)	487 (96.6%)	1058 (96.8%)
Missing values	1	2	1	2	6
Communicating					
Yes	2 (2.3%)	8 (2.4%)	7 (4%)	6 (1.2%)	23 (2.1%)
No	85 (97.7%)	318 (97.6%)	166 (96%)	497 (98.8%)	1066 (97.9%)
Missing values	1	3	3	3	10

Reported functional difficulty in the household (N,%) [α]	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
At least one HH member with functional limitation(s)	25 (28.4%)	123 (37.4%)	57 (32.4%)	210 (41.5%)	415 (37.8%)

[α]: Head of households reporting to have at least one member of their households having difficulties to perform specific functions such as seeing, hearing, walking/climbing stairs, remembering/concentrating, washing/dressing, or communicating (some difficulties/a lot of difficulties/cannot do at all).

4.1.2. Characteristics of individual respondents

Among 1099 participants completing the survey, over 55% were female but there were district variations. In Kenema and the Western area, females constituted much of the sample (55.4% and 59.5% respectively). In the two other districts, females were a minority (45% in Bonthe and 46.3%% in Koinadugu). The districts also varied by language and ethnicity. For example, Mende was spoken by 74.7% of the participants in Bonthe and 43.6% in Kenema but only 8.8% in the Western Area and 1.7% in Koinadugu. Themne was spoken by over 44% of the interviewees in Kenema, over 29% in the Western Area, 0.6% in Koinadugu and none in Bonthe. The distribution by ethnicity also showed a diverse pattern with a total of 13 ethnic groups represented in the sample. The predominant ethnic group was Mende (37.3%) followed by Themne (18.4%) and Limba (8.6%). Islam was the most widely practicing religion reported by 69.2% of the sample.

About a third of the respondents (29.6%) did not know their exact age (i.e. they responded ‘don’t know’ to the question). Among those, who did know their age, over half (51.7%) were below the age of 35 years. Most study respondents (58%) reported being in a stable union, while 28% were single.

Over a third of the respondents had never been to school (39.6%) with significant differences between the districts. In Bonthe and Koinadugu over two thirds of the respondents had not been to school. In the Western Area, less than five percent reported the same. Among those who received some form of education, 9.7% reached the primary level only; 34.2% reached the secondary level (11.8% junior and 22.4% senior secondary); 11.2% had vocational/technical training and 5.3% reported higher education, with significant differences between the districts. People with further or higher education were primarily found in the Western area (19.2 and 9.9% respectively). In the three other districts only five% or less reported education above secondary.

In terms of employment, 64% of the sample reported that they had been engaged in an economic activity over the last year. The majority were working in agriculture (28.2%) followed by petty traders (15.5%) and professional, technical or managerial positions (7%). Interestingly, about one in three respondents engaged in economic activities (33.5%) reported no cash earnings for their work. The majority of the con-cash earners were engaged in subsistence activities such as farming or fishing (62.2%). Females constituted

just under one half of non-cash earners (47.4%). In the Western Area, about half of the respondents reported no economic activities, possibly being in education (**Table 5**).

Table 5. Socio-demographic characteristics of survey respondents

Socio-demographic characteristics	Bonthe (N= 88)	Kenema (N= 329)	Koinadugu (N= 176)	Western Rural (N= 506)	Total (N= 1099)
Sex					
Female	39 (44.8%)	181 (55.4%)	84 (47.7%)	300 (59.3%)	604 (55.1%)
Male	48 (55.2%)	146 (44.6%)	92 (52.3%)	206 (40.7%)	492 (44.9%)
Missing	1	2	0	0	3
Age Range					
18 – 24yrs	11 (12.5)	42 (12.8%)	20 (11.4%)	108 (21.3%)	181 (16.5%)
25 – 29yrs	6 (6.8%)	25 (7.6%)	16 (9.1%)	56 (11.1%)	103 (9.4%)
30 – 34yrs	5 (5.7%)	17 (5.2%)	20 (11.4%)	74 (14.6%)	116 (10.6%)
35 – 39yrs	6 (6.8%)	16 (4.9%)	12 (6.8%)	54 (10.7%)	88 (8%)
40 – 44yrs	4 (4.5%)	18 (5.5%)	7 (4%)	49 (9.7%)	78 (7.1%)
45 – 49yrs	6 (6.8%)	21 (6.4%)	9 (5.1%)	29 (5.7%)	65 (5.9%)
50 – 54yrs	0	22 (6.7%)	4 (2.3%)	38 (7.5%)	64 (5.8%)
55 – 59yrs	1 (1.1%)	10 (3%)	3 (1.7%)	15 (3%)	29 (2.6%)
60 and above	3 (3.4%)	17 (5.2%)	1 (0.6%)	29 (5.7%)	50 (4.5%)
Don't Know	46 (52.3%)	141 (42.9%)	84 (47.7%)	54 (10.7%)	325 (29.6%)
Marital Status					
Currently Married	70 (79.5%)	197 (59.9%)	109 (61.9%)	199 (39.3%)	575 (52.3%)
Living with a partner	2 (2.3%)	8 (2.4%)	9 (5.1%)	40 (7.9%)	59 (5.4%)
Widowed	6 (6.8%)	24 (7.3%)	10 (5.7%)	37 (7.3%)	77 (7%)

Socio-demographic characteristics	Bonthe (N= 88)	Kenema (N= 329)	Koinadugu (N= 176)	Western Rural (N= 506)	Total (N= 1099)
Divorced/Separated	0	23 (7%)	14 (8%)	46 (9.1%)	83 (7.6%)
Single (never married)	10 (11.4%)	77 (23.4%)	34 (19.3%)	183 (36.2%)	304 (27.7%)
Missing	0	0	0	1	1
Level of Education					
None	59 (67%)	155 (47.1%)	121 (68.8%)	100 (19.8%)	435 (39.6%)
Primary	12 (13.6%)	45 (13.7%)	12 (6.8%)	38 (7.5%)	107 (9.7%)
Junior Secondary	9 (10.2%)	54 (16.4%)	15 (8.5%)	52 (10.3%)	130 (11.8%)
Senior Secondary	4 (4.5%)	53 (16.1%)	20 (11.4%)	169 (33.4%)	246 (22.4%)
Vocational/Commercial/Nursing/Technical/Teaching	3 (3.4%)	16 (4.9%)	7 (4%)	97 (19.2%)	57 (11.2%)
Higher	1 (1.1%)	6 (1.8%)	1 (0.6%)	50 (9.9%)	58 (5.3%)
Economic activity in the past 12 months					
No	22 (25%)	79 (26.6%)	31 (18.1%)	250 (50.5%)	382 (36.3%)
Yes	66 (75%)	217 (73.3%)	140 (81.9%)	245 (49.5%)	668 (63.6%)
Missing	0	33	5	11	49

4.1.3. Access of respondents to mass media

The majority of the respondents had access to radio (81%) in their household and a little more than half owned a radio (54%). Only four out of 10 respondents had access to television in their household, but this was primarily in the Western Area, where 82.2% of participants reported access to television. In Kenema, access to television was reported by 14.3% of the household; in the other two districts, around five percent of the households had access to television.

Even though the respondents had a fairly good access to radio, the habit of listening regularly to the radio was not so common. Only 4 out of 10 respondents (39%) listened to the radio every day and one in three respondents (28.8%) did so at least once a week. About 18% of respondents said that they never listened to the radio. This proportion was particularly high (over 43%) in Koinadugu. In the Western area, only seven% of participants reported never listening to the radio. Frequent access to television was also reported primarily in the Western Area (29% daily and 36% at least once a week); in the other three districts 90% of participants reported never watching television.

Reading newspapers or magazines was even less common, as nearly 40% of the sample were illiterate. Among those who could read, only just over half read printed press, but usually only once or less than once a week. Over 46% of those who were literate in the sample, never read newspapers or magazines and the proportion was even higher in Kenema (66%), Koinadugu (70%) and Bonthe (75%). Access to mobile phones on the other hand, was relatively common, and reported by 78% of the households, ranging from 42% in Koinadugu to over 96% in the Western Area. Access to a personal mobile phone was reported by 67% of participants, ranging from 38% in Koinadugu to 90% in the Western Area (**Table 6**).

Table 6: Exposure of survey respondents to mass media

How often do you listen to the radio?					
Frequency of listening to radio	Bonthe N=88	Kenema N=329	Koinadugu N=176	Western Area N=506	Total N=1099
Everyday	17 (19.3%)	103 (31.4%)	47 (26.9%)	260 (51.6%)	427 (39%)
At least once a week	31 (35.2%)	84 (25.6%)	45 (25.7%)	155 (30.8%)	315 (28.8%)
Less than once a week	18 (20.5%)	81 (24.7%)	7 (4%)	49 (9.7%)	155 (14.2%)
Not at all	22 (25%)	60 (18.3%)	76 (43.4%)	40 (7.9%)	198 (18.1%)
Missing	0	1	1	2	4
How often do you watch television?					
Frequency of watching television	Bonthe N=88	Kenema N=329	Koinadugu N=176	Western Area N=506	Total N=1099
Everyday	0	10 (3%)	1 (0.6%)	146 (29.1%)	157 (14.4%)

At least once a week	3 (3.4%)	10 (3%)	9 (5.2%)	180 (35.9%)	202 (18.5%)
Less than once a week	2 (2.3%)	15 (4.6%)	1 (0.6%)	73 (14.6%)	91 (8.3%)
Not at all	83 (94.3%)	293 (89.4%)	162 (93.6%)	102 (20.4%)	640 (58.7%)
Missing	0	1	3	5	9
How often do you read a newspaper or magazine? α					
Frequency of reading newspaper β	Bonthe N=28	Kenema N= 174	Koinadugu N=56	Western Area N= 409	Total N= 667
Everyday	1 (2.6%)	7 (4%)	0	46 (11.2%)	54 (8.1%)
At least once a week	4 (14.3%)	4 (2.3%)	11 (19.6%)	131 (32%)	150 (22.5%)
Less than once a week	2 (7.1%)	48 (27.6%)	6 (10.7%)	99 (24.2%)	155 (23.2%)
Not at all	21 (75%)	115 (66.1%)	39 (69.6%)	133 (32.5%)	308 (46.2%)
Not literate	57	154	120	94	425
Missing	3	1	0	3	7
Do you or anyone else in this household own a radio?					
Ownership of radio	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Respondent himself	39 (44.3%)	144 (43.8%)	62 (35.2%)	351 (69.4%)	596 (54.2%)
Someone in the household	65 (73.9%)	267 (81.2%)	86 (49%)	470 (92.9%)	888 (80.9%)
Do you or anyone else in this household own a television?					
Ownership of television	Bonthe N=88	Kenema N =329	Koinadugu N=176	Western Area N=506	N=1099
Respondent himself	2 (2.3%)	19 (5.8%)	4 (2.3%)	233 (46%)	258 (23.5%)

Someone in the household	5 (5.7%)	47 (14.3%)	8 (4.5%)	416 (82.2%)	476 (43.3%)
Do you or anyone else in this household own a mobile phone?					
Ownership of mobile phone	Bonthe N=88	Kenema N=329	Koinadugu N=176	Western Area N=506	Total N=1099
Respondent himself	35 (39.8%)	181 (55%)	67 (38.1%)	455 (89.9%)	738 (67.2%)
Someone in the household	53 (60.2%)	245 (74.5%)	74 (42%)	490 (96.8%)	862 (78.4%)

α: question was asked only to respondents who reported to be literate (N=667).
β: column percentages take the total number of individuals who responded to the question as denominator (i.e. not including illiterate individuals)

4.1.4. Exposure to eye health messages

Around half of the respondents (n=545; 50%) remembered having received information or messages about eye health in the 12 months preceding the survey. The three most common sources of eye health information among these respondents were radio (55%), friends or relatives (38%) and screening camps (31%). Receiving message from relatives and friends was more common in Bonthe and Koinadugu. Information through health screening camps was more frequently reported in Bonthe. Television was a source of eye health information for only 11% of the respondents, and mainly those in the Western Area. Doctors' clinics and printed press were not very common either, reported by less than one in ten interviewees and mainly those in the Western Area. Information from religious and social organisations was also reported by less than ten percent of the respondents and was more common in Koinadugu and the Western Area. Pamphlets and brochures were mentioned by less than two% of the interviewees. (**Table 7**).

Exposure to eye health messages was significantly associated with household economic status, district of residence, education, age and self-reported vision. After the adjustment for confounding factors, individuals from the wealthiest quintile (Q5) were nearly three times more likely to have seen or heard eye health messages than those in the poorest quintile (Q1) [OR_{Q5}= 2.98; CI 95%: 1.66-5.34; p-val= 0.000]. People with formal education were twice as likely to have received eye health information compared to those, who were uneducated [OR= 1.98; CI 95%: 1.48-2.65; p-val= 0.000]. People in older age groups, those with poorer vision and the resident of Koinadugu were also more likely to have received messages about eye health. There was no difference in information exposure by either sex or occupation (**Annex 3**).

Table 7: Sources and exposure to eye health messages in the past 12 months

During the past 12 months, have you seen or heard something about eye health or eye disease(s)?					
Participants exposed to eye health message(s)	Bonthe (N=88)	Kenema (N=329)	Koinadugu (N=176)	Western Area (N=506)	Total (N=1099)
Yes	26 (35.4%)	135 (41%)	88 (46.9%)	299 (59.2%)	545 (50%)
No	52 (63.4%)	190 (57.7%)	91 (52%)	204 (40.4%)	537 (49.2%)
Don't know	1 (1.2%)	4 (1.2%)	2 (1.4%)	2 (0.4%)	9 (0.8%)
Missing	6	0	1	1	8
How did you hear about eye health or eye disease(s)? α					
Source of eye health message(s) β, δ	N = 26	N = 135	N = 88	N = 299	N = 545
Radio	18 (62.1%)	65 (48.1%)	31 (38.3%)	184 (62.8%)	298 (55.4%)
Friends/Relatives	16 (55.2%)	59 (43.7%)	44 (54.3%)	85 (28.9%)	204 (37.9%)
Health Screening	17 (58.6%)	31 (23%)	33 (40.7%)	86 (29.2%)	167 (31%)
Television	0	3 (2.2%)	1 (1.2%)	55 (18.7%)	59 (11%)
Religious and Social Organization	1 (3.4%)	5 (3.7%)	9 (11.1%)	29 (9.9%)	44 (8.2%)
Doctor office, clinic or community	1 (3.9%)	3 (2.2%)	3 (3.8%)	29 (9.9%)	36 (6.8%)
Newspaper or Magazine	0	2 (1.5%)	0	31 (10.5%)	33 (6.1%)
Pamphlet or Brochure	2 (6.9%)	0	0	8 (2.7%)	10 (1.9%)
Don't know	0	2 (1.5%)	0	4 (1.4%)	6 (1.1%)

α: includes only respondents who have been exposed to eye health messages in the past 12 months (N=545).

β: multiple responses allowed

δ: column percentages take the total number of individuals who responded to the question as denominator.

4.1.5. Respondents' knowledge about eye health

4.1.5.1. Knowledge about blindness

As a way to test respondents' knowledge about blindness, each respondent was asked to state whether they agreed or disagreed with various statements about blindness.

The majority of the respondents believed that blindness could be either prevented (75%) or cured (82%). A quarter of participants believed that blindness could be inherited from parents (28%) and one in six thought it was contagious (14%). There were however some district variations. Participants from Koinadugu and Western area were more likely to believe that blindness was inherited. Those in Western Area were also more likely to believe that blindness was contagious.

When individuals were asked about the factors that could cause blindness, the most cited causes were eye diseases (47.6%) followed by injury/accident (43.2%). Over a quarter associated blindness with supernatural factors or witchcraft (28.6%); this proportion was particularly high in Bonthe (over 39%). Study participants also linked blindness to old age (20%) and exposure to dust (19%). Old age was particularly frequently mentioned in Bonthe (over 52%). Very few respondents across all districts linked blindness to the sun exposure, smoking, chemicals, water sources or nutrition (**Table 8**).

Table 8: Knowledge and perception of blindness among respondents

I will now read some statements about blindness. Please tell me if you agree or disagree with each one:					
Participants agreeing with the statement[α]	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Blindness is inherited	20 (22.7%)	60 (18.2%)	78 (44.3%)	154 (30.4%)	312 (28.4%)
Blindness is contagious	5 (5.7%)	25 (7.6%)	17 (9.7%)	105 (20.7%)	152 (13.9%)
Blindness can be prevented	46 (55.3%)	262 (79.6%)	128 (72.7%)	393 (77.7%)	829 (75.4%)
Blindness can be cured, and sight restored	57 (64.8%)	279 (84.8%)	158 (89.8%)	412 (81.4%)	906 (82.4%)
What in your view can cause blindness?					
Perceptions about the cause for blindness [β]	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Disease	42 (47.7%)	180 (54.7%)	84 (47.7%)	217 (47.9%)	523 (47.6%)

I will now read some statements about blindness. Please tell me if you agree or disagree with each one:					
Injury/accident	43 (48.9%)	159 (48.3%)	80 (45.5%)	193 (38.1%)	475 (43.2%)
Supernatural/Witchcraft	35 (39.8%)	71 (21.6%)	52 (29.5%)	157 (31%)	315 (28.6%)
Old age	46 (52.2%)	35 (10.6%)	45 (25.6%)	93 (18.4%)	219 (19.9%)
Dust	7 (7.9%)	55 (16.2%)	38 (21.6%)	108 (21.3%)	208 (18.9%)
Hereditary	4 (4.6%)	12 (3.6%)	20 (11.4%)	126 (24.9%)	162 (14.7%)
Sun	4 (4.51%)	2 (0.6%)	10 (5.7%)	19 (3.7%)	35 (3.2%)
Insects/worms/animals	1 (1.1%)	17 (5.1%)	1 (0.5%)	13 (2.6%)	32 (2.9%)
Diving/swimming	0	12 (3.6%)	0	8 (1.6%)	20 (1.8%)
Exposure to smoke	0	2 (0.6%)	1 (0.5%)	10 (2.0%)	13 (1.2%)
Nutrition	0	2 (0.6%)	4 (2.3%)	6 (1.2%)	12 (1.1%)
Exposure to chemical /natural product	1 (1.1%)	4 (1.2%)	0	6 (1.2%)	11 (1%)
Others	17 (19.3%)	67 (20.4%)	37 (21%)	62 (12.2%)	183 (16.6%)
Missing	*6*	*1*	*0*	*16*	*23*

α: Includes all responses recorded as ‘agree’ or ’agree somewhat’ which were combined into one single category

β: Multiple responses allowed

4.1.5.2. Knowledge about common eye conditions

Respondents were also asked if they have heard about some of the most prevalent eye conditions in Sierra Leone including cataract, onchocerciasis (river blindness), glaucoma, and refractive errors.

There was a high degree of knowledge about cataract (84.5%) and over half of the respondents knew about refractive errors (54%) and onchocerciasis (51%). Only 5.1% of the respondents had ever heard about glaucoma (**Figure 1**). The main factors associated with the level of awareness for each eye condition are summarized in **Table 9** and the magnitude of association is shown in **Annex 3**.

Age, self-reported vision and education were most consistently associated with the knowledge of different eye conditions. Knowledge of cataract was associated with older age and living in Bonthe and Kenema. Knowledge of river blindness was associated with older age, education, poorer vision, relative wealth and residency in Bonthe and Koinadugu. Knowledge of glaucoma was associated with education, poorer vision and residency in Kenema. Knowledge of refractive error was associated with older age, relative wealth and poorer vision. There was no association between knowledge of common eye diseases and either participant sex or occupation.

Figure 1: Awareness of common eye conditions in Sierra Leone

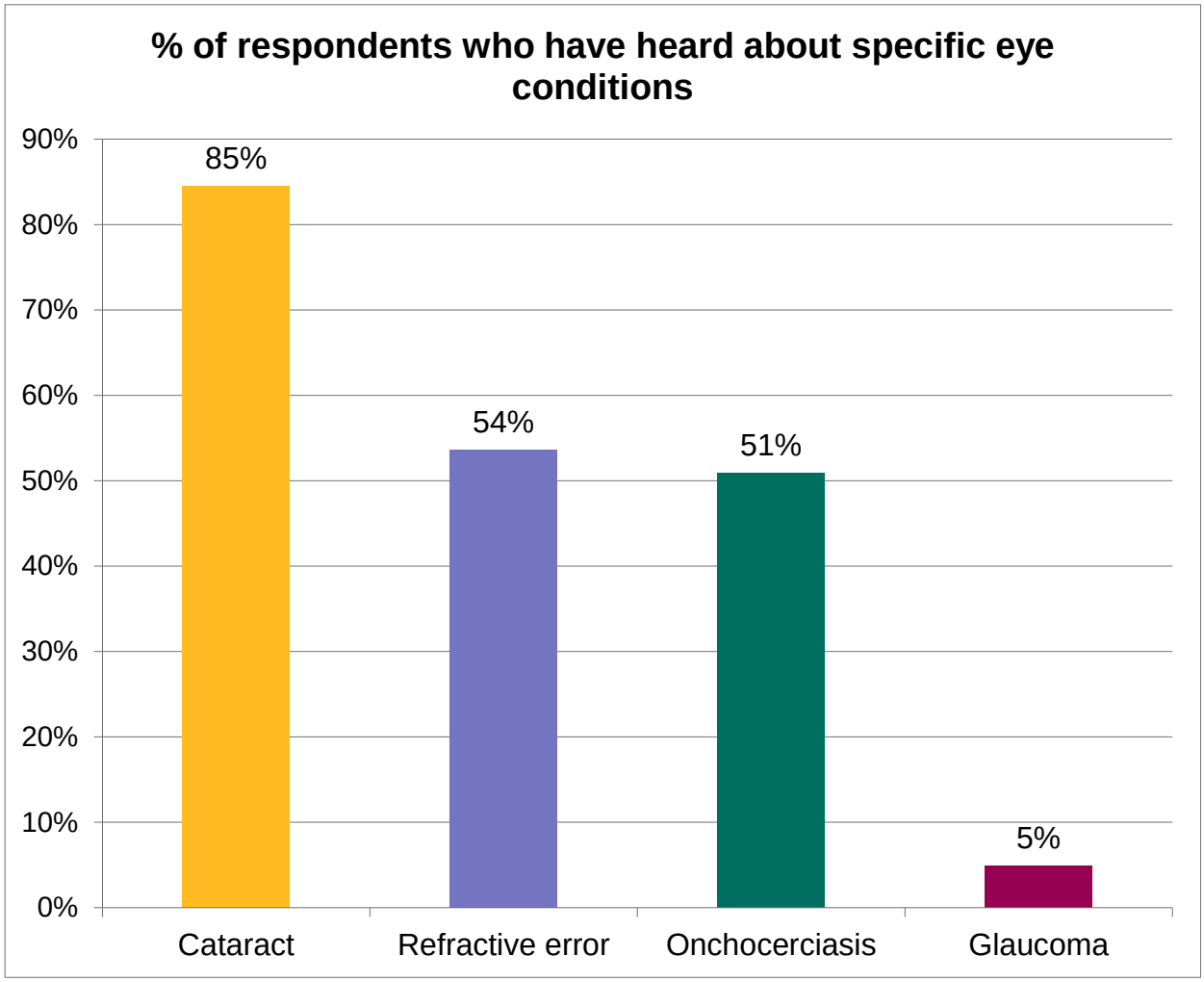

Table 9: Association between respondent characteristics and awareness of common eye conditions

Respondent characteristics[α]	Cataract	Onchocerciasis	Glaucoma	Refractive error
Age	Yes	Yes		Yes
Sex				
Poverty		Yes		Yes
District of residence	Yes	Yes	Yes	
Education		Yes	Yes	
Self-reported vision		Yes	Yes	Yes
Occupation				

α: Yes: significantly associated, multivariate analysis

Cataract:

About 85% of study participants said that they knew what cataract was, ranging from 72% Koinadugu to over 96% in Bonthe and Kenema. Among those who knew about the disease; 36% correctly noted that it was caused by opacity of the lens and nearly half correctly responded that it could be treated by surgery (49%). However, there were some district variations in this knowledge. Kenema had the lowest proportion of respondents who knew about lens opacity (18%) and surgery (32%). About one third of study participants believed that cataract can be treated using traditional medicine; this proportion was higher in Bonthe (nearly 40%) and Kenema (43%). Over 20% of respondents in Koindugu referred to couching as a way to treat cataract. In the other three districts this proportion of respondents was relatively small (1.3% - 2%) (**Table 10**).

Table 10: Awareness and knowledge about Cataract

Have you ever heard of cataract?					
Awareness about cataract	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Rural (N=506)**	**Total (N=1099)**
Yes	79 (96.3%)	313 (96%)	126 (72%)	384 (79.2%)	902 (84.5%)
No	3 (3.7%)	13 (4%)	49 (28%)	101 (20.8%)	165 (15.5%)
Missing	6	3	1	21	31

What do you think that cataract is? β					
Knowledge cause of cataractα	**N= 79**	**N= 313**	**N= 126**	**N= 384**	**N = 902**
Opacity of the lens*	61 (78.2%)	56 (18.4%)	40 (32%)	169 (43.6%)	326 (36.4%)
Growth over pupil	6 (7.8%)	97 (31.9%)	32 (25.6%)	67 (17.2%)	202 (22.6%)
Skin growing inside the eye	13 (16.7%)	131 (43.09%)	27 (21.6%)	16 (4.1%)	187 (20.9%)
Skin growing over the surface of the eye	5 (6.4%)	53 (17.4%)	21 (16.8%)	92 (23.7%)	171 (19.8%)
Eye infection	18 (23.1%)	24 (7.9%)	23 (18.4%)	56 (14.4%)	121 (13.5%)
Cloudiness of vision	9 (11.5%)	28 (9.2%)	24 (19.2%)	58 (14.9%)	119 (13.3%)
Ageing process	6 (7.8%)	2 (0.7%)	4 (3.2%)	5 (1.3%)	17 (1.9%)
Cancer	0	1 (0.3%)	2 (1.6%)	1 (0.3%)	4 (0.4%)
Others	13 (16.9%)	31 (10.4%)	20 (16.3%)	32 (8.3%)	96 (10.9%)
Can people reduce their chance of getting cataract? β					
Knowledge prevention of cataract	**N= 79**	**N= 313**	**N= 126**	**N= 384**	**N = 902**
Yes	7 (9.5%)	39 (12.6%)	36 (29.7%)	216 (54.7%)	298 (33.1%)
No	2 (93.5%)	65 (21%)	18 (14.9%)	41 (10.4%)	126 (14%)
Don't know	65 (87.8%)	206 (66.4%)	67 (55.4%)	138 (34.9%)	476 (52.9%)
What is the best treatment if you have cataract? β					
Knowledge treatment of cataractα,	**N= 79**	**N= 313**	**N= 126**	**N= 384**	**N = 902**
Surgery*	48 (61.5%)	120 (38.7%)	66 (52.4%)	228 (57.3%)	450 (49.3%)
Western medicine	21 (26.9%)	129 (41.6%)	63 (50%)	91 (22.9%)	304 (33.3%)

Traditional medicine/ home remedies	31 (39.73%)	132 (43%)	18 (14.4%)	101 (25.4%)	282 (31.1%)
Couching	1 (1.3%)	5 (1.6%)	26 (20.6%)	8 (2%)	40 (4.4%)
Cannot treat	1 (1.3%)	1 (0.7%)	0	5 (1.3%)	7 (0.8%)
Others	20 (26%)	59 (19.1%)	35 (28%)	99 (24.9%)	213 (23.4%)
Don't know	0	0	0	7 (0.2%)	7 (0.1%)

α: Multiple responses allowed
β: Includes only respondents who reported to have heard about cataract (N=902)
*Denotes good knowledge of the disease

Onchocerciasis:

Fifty-one per cent of the respondents reported that they had heard about onchocerciasis (locally known as black fly disease). The knowledge was particularly strong in Bonthe, where over 80% of participants knew about the disease.

With regards to disease manifestation, over half of the sample referred to itching (51.5%), although this proportion was lower in Bonthe (38.5%). In contrast, the majority of those in Bonthe (58.5%) associated onchocerciasis with blindness, while in the overall sample only one in five participants reported the same. Other symptoms of the disease were less commonly reported, including skin problems (16.5%), skin nodules (11%), and depigmentation (5%).

Nearly 65% of the sample knew that river blindness could be prevented, and the same proportion said that it could be prevented by avoiding black flies' bite. Approximately a third of all respondents correctly reported that onchocerciasis can be prevented by avoiding proximity with rivers (36%) and less than a third said that it could be prevented by taking drugs (31%). One in five participants pointed out to wearing protective clothes (21%) as a measure of prevention (**Table 11**).

Western medicine was mentioned as a way to treat onchocerciasis by two thirds of study participants, while nearly one in six referred to traditional medicine; this proportion was higher in Bonthe (33%).

Table 11. Awareness and knowledge about Onchocerciasis

1. Have you ever heard of an illness called onchocerciasis or river blindness?					
Awareness about onchocerciasis	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Rural (N=506)**	**Total (N=1099)**
Yes	65 (80.2%)	158 (48.9%)	99 (56.6%)	225 (45.4%)	547 (50.9%)

No	16 (19.7%)	165 (51.8%)	76 (43.4%)	270 (54.5%)	527 (49.07%)
Missing	7	6	1	11	25
2. What are the symptoms/manifestations of onchocerciasis or river blindness? β					
Knowledge symptoms of onchocerciasis α	**N= 65**	**N= 158**	**N= 99**	**N= 225**	**N = 547**
Itching*	25 (38.5%)	79 (49.4%)	49 (50%)	128 (57.4%)	281 (51.5%)
Blindness*	38 (58.5%)	20 (12.5%)	34 (34.7%)	27 (12.1%)	119 (21.8%)
Swelling/inflammation	24 (37.5%)	31 (19.4%)	29 (29.6%)	22 (9.9%)	106 (19.4%)
Skin problems*	8 (12.3%)	23 (14.4%)	39 (39.8%)	20 (9%)	90 (16.5%)
Nodules*	12 (18.5%)	13 (8.1%)	4 (4%)	29 (13%)	58 (10.6%)
Fever	1 (1.5%)	3 (1.9%)	10 (10.2%)	8 (3.6%)	22 (4%)
Depigmentation*	12 (18.7%)	1 (0.6%)	13 (13.3%)	1 (0.4%)	27 (5%)
Pain	1 (1.5%)	4 (2.5%)	6 (6.1%)	5 (2.2%)	16 (2.9%)
Others	14 (21.9%)	50 (31.2%)	32 (33.3%)	61 (27.5%)	157 (29%)
3. Can people reduce their chances of getting onchocerciasis or river blindness? β					
Knowledge prevention of onchocerciasis	**N= 65**	**N= 158**	**N= 99**	**N= 225**	**N = 547**
Yes	32 (49.2%)	79 (49.7%)	52 (53%)	193 (84.6%)	356 (64.7%)
No	1 (1.5%)	26 (13.3%)	8 (8.16%)	5 (2.2%)	40 (7.3%)
Don't know	32 (49.2%)	54 (34%)	38 (38.8%)	30 (13.2%)	154 (28%)
4. How can you prevent onchocerciasis or river blindness? δ					
Knowledge how to prevent onchocerciasis α	**N= 32**	**N= 79**	**N= 52**	**N= 193**	**N = 356**

Avoid black fly bite*	32 (100%)	32 (38.5%)	25 (44.6%)	152 (77.9%)	241 (65.8%)
Avoid Proximity with river*	17 (53.1%)	27 (32.5%)	27 (48.2%)	61 (31.4%)	132 (36.2%)
Taking drugs*	29 (90.6%)	33 (39.8%)	29 (51.8%)	24 (12.3%)	115 (31.4%)
Wearing protective cloths*	8 (25%)	22 (26.5%)	12 (21.4%)	35 (18%)	77 (21%)
Good personal hygiene	8 (25%)	5 (6.1%)	16 (28.6%)	7 (3.6%)	36 (9.9%)
Avoid insect bite	2 (6.2%)	3 (3.6%)	2 (3.6%)	2 (1%)	9 (2.5%)
Use of bed nets	1 (3.1%)	3 (3.7%)	3 (5.4%)	5 (2.6%)	12 (3.3%)
Avoid sun scorching	0	2 (2.4%)	0	2 (1%)	4 (1.1%)
Good nutrition	0	1 (1.2%)	0	2 (1%)	3 (0.8%)
Don't Know	0	6 (7.2%)	5 (8.9%)	28 (14.4%)	39 (10.7%)
Others	0	2 (2.5%)	2 (3.8%)	14 (7.2%)	18 (5%)
What are the treatments if you have onchocerciasis? β					
Knowledge treatment of onchocerciasis α	**N= 65**	**N= 158**	**N= 99**	**N= 225**	**N = 547**
Western medicine*	49 (83%)	129 (82.7%)	68 (70.1%)	99 (44.6%)	345 (64.6%)
Surgery	9 (15.2%)	10 (6.4%)	6 (6.2%)	90 (40.7%)	115 (21.6%)
Traditional medicine/ home remedies	20 (33.9%)	6 (3.8%)	9 (9.2%)	41 (16.5%)	76 (14.2%)
Cannot treat	0	3 (1.9%)	1 (1%)	13 (5.9%)	17 (3.2%)
Don't know	10 (15.9%)	18 (11.3%)	24 (24.7%)	64 (28.4%)	116 (21.2%)
Others	0	1 (0.6%)	0	7 (3.1%)	8 (1.5%)

α: Multiple responses allowed,
β: Includes only respondents who reported to have heard about onchocerciasis (N=547)
δ: Includes only respondents who believe that onchocerciasis can be prevented (N=356)
*Denotes good knowledge of disease

Glaucoma:

Glaucoma was the least known eye condition in these communities mentioned by only five per cent of respondents. The proportion was slightly higher in Kenema (8.8%), while in Koinadugu no one had heard about glaucoma. Among 53 people who said they knew about glaucoma, only two said they had been diagnosed with the disease.

Among those who had heard about glaucoma, 86.5% correctly reported that it could cause vision loss and blindness; about a third said that vision loss from glaucoma could be prevented (33%) and another third thought that, once detected, the disease could be treated. Over 39% of the respondents with the knowledge of glaucoma said that Western medicine was the way to treat the disease; 20% mentioned eye drops and 9.8% referred to surgery (including laser surgery), as a type of treatment (table 12).

Table 12: Awareness and knowledge about Glaucoma

1. Have you ever heard about an illness called Glaucoma?					
Awareness about Glaucoma	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Rural (N=506)**	**Total (N=1099)**
Yes	2 (2.4%)	29 (8.8%)	0	22 (4.4%)	53 (4.9%)
No	80 (97.6%)	300 (91.2%)	174 (100%)	477 (95.6%)	1031 (95.1%)
Missing	6	0	2	7	15
2. I will now read some statements about Glaucoma. Please tell me if you think statement is true or false. If you are note sure, please tell me: β					
Participants indicating correct responses δ	**N= 2**	**N= 29**	**N=0**	**N=22**	**N=53**
Glaucoma can cause vision loss or blindness (=YES)	2 (100%)	25 (89.3%)	-	18 (81.9%)	45 (86.5%)
There are early warning signs for Glaucoma (=NO)	0	1 (3.6%)	-	2 (9.1%)	3 (5.8%)
Glaucoma can be treated once detected (=YES)	1 (50%)	9 (32.1%)	-	10 (47.6%)	20 (36.2%)
Vision loss from Glaucoma can be prevented (=YES)	1 (50%)	3 (10.7%)	-	13 (59.1%)	17 (32.7%)

Vision loss from Glaucoma can be restored (=NO)	1 (50%)	2 (7.4%)	-	3 (13.6%)	6 (11.8%)
3. What is the treatment if you have Glaucoma? β					
Knowledge treatment of Glaucoma α	**N= 2**	**N= 29**	**N=0**	**N=22**	**N=53**
Western medicine*	0	15 (51.7%)	-	6 (28.6%)	20 (39.2%)
Eye drops*	1 (50%)	4 (14.3%)	-	5 (23.8%)	10 (19.6%)
Surgery (incl. laser) *	1 (50%)	2 (7.2%)	-	2 (9.5%)	5 (9.8%)
Traditional medicine/ home remedies	0	2 (7.1%)	-	0	2 (3.9%)
Couching	0	1 (3.6%)	-	0	1 (2%)
Cannot treat	0	0	-	1 (4.8%)	1 (2%)
Don't know	1 (50%)	11 (39.3%)	-	12 (60%)	24 (48%)
4. Have you ever been diagnosed with Glaucoma? β					
Yes	0	2 (7.1%)	-	0	2 (3.8%)
No	2 (100%)	25 (89.3%)	-	22 (100%)	50 (94.4%)
Don't know	0	1 (3.6%)	-	0	1 (1.9%)
Missing	0	1	-	0	1

α: Multiple responses allowed
β: Includes only respondents who reported to have heard about Glaucoma (N=53)
δ: Participants who agreed with the correct statement (correct response is given in brackets)

Refractive errors:

About half of the respondents (54%) reported that they knew about refractive errors (RE). Respondents associated refractive errors mainly with blurred vision (73%). Some also mentioned loss of vision (14%) or falling/bumping into objects (12%).

The majority of the respondents knew that it was possible to restore good sight if refractive errors were treated (73.5%). The most frequently cited treatment was wearing spectacles (46%), followed by contact lenses (25%) and eye surgery (15%). However, there were some district variations. Contact lenses were primarily known in the Western Area followed by Bonthe. Eye surgery was mentioned more frequently in Kenema and Koindugu. Nearly one in ten respondents (9.2%) reported not knowing what treatment was available to restore sight affected by refractive errors (**Table 13**).

Table 13: Awareness and knowledge about refractive error

1. Have you ever heard of refractive error problems? *Probe for myopia, hyperopia, presbyopia and astigmatism*					
Awareness about refractive error	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Rural (N=506)**	**Total (N=1099)**
Yes	43 (53.1%)	176 (54%)	107 (60.8%)	253 (50.8%)	579 (53.6%)
No	38 (49.9%)	150 (46%)	69 (39.2%)	245 (49.2%)	502 (46.4%)
Missing	7	3	0	8	18
2. How do you know if you have refractive error problems? [β]					
Knowledge symptoms of uncorrected refractive error[α]	**N=43**	**N=176**	**N=107**	**N=253**	**N=579**
Blurred vision	40 (97.6%)	113 (64.2%)	66 (61.7%)	199 (79.6%)	418 (72.8%)
Loss of vision	3 (7%)	20 (11.4%)	10 (9.3%)	40 (16.2%)	73 (13.6%)
Falling or bumping into objects	2 (4.6%)	28 (16%)	4 (3.7%)	30 (12.1%)	64 (12%)
Pain in the eye(s)	0	0	4 (3.7%)	19 (7.7%)	23 (4.3%)
Watery eye(s)	0	6 (3.4%)	8 (7.5%)	7 (2.8%)	21 (3.9%)
Red eye(s)	1 (2.3%)	1 (0.6%)	8 (7.5%)	4 (1.6%)	14 (2.6%)
Headache	0	2 (1.1%)	1 (0.9%)	2 (0.8%)	5 (0.9%)
Others	0	16 (9.1%)	7 (6.5%)	5 (2%)	27 (5.1%)
3. Is it possible to restore good sight if you have refractive error problems? [β]					
Knowledge treatment of refractive error[α]	**N=43**	**N=176**	**N=107**	**N=253**	**N=579**
Yes	35 (75.5%)	110 (62.1%)	72(67.9%)	211 (82.7%)	428 (73.5%)

No	0	13 (7.3%)	2 (1.9%)	10 (3.9%)	25 (4.3%)
Don't know	9 (20.5%)	54 (30.5%)	32 (30.2%)	34 (13.3%)	129 (22.2%)
4. How can you restore good sight if you have refractive error problems? δ					
Knowledge how to treat refractive error	**N=35**	**N=110**	**N=72**	**N=211**	**N=428**
Spectacles	24 (68.6%)	37 (35.6%)	29 (39.2%)	106 (50%)	196 (46.1%)
Contact lenses	10 (28.6%)	3 (2.9%)	4 (5.4%)	91 (42.9%)	108 (25.4%)
Surgery	1 (2.9%)	26 (25%)	36 (48.6%)	1 (0.5%)	64 (15.1%)
Don't know	0	22 (21.1%)	5 (6.8%)	12 (5.7%)	39 (9.2%)
Others	0	16 (15.4%)	0	2 (0.9%)	18 (4.2%)

α: Multiple responses allowed

β: Includes only respondents who reported to have heard about refractive error (N=579)

δ: Includes only respondents who believe that onchocerciasis can be prevented (N=428)

4.1.5.3. Knowledge of the Free Health Care Initiative

In April 2010, the Government of Sierra Leone introduced the Free Healthcare Initiative (FHCI), abolishing user fees for pregnant and lactating mothers and children under five, at any government facility in the country. FHCI covers a package of basic healthcare services which includes eye care (i.e. the treatment of eye infections and injuries)[5] for the eligible patients.

The majority of individuals in our sample were aware of the FHCI (85.5%). The proportion was lower in Koinadugu (60%). Most participants were also aware of the eligible groups of patients, although one in five (with the exception of Bonthe) thought that the package was available to all.

The main factors associated with awareness of the FHC, after controlling for other variables, were the district of residence and education. The level of awareness in Koinadugu was 76% lower compared to the Western Area [OR= 0.24; CI 95%: 0.14-0.41; p-val= 0.000]. Respondents with formal education were more than five times more likely to be aware of the FHCI than those without education [OR= 5.57; CI 95%: 3.54-8.77; p-val= 0.000]. We did not find any difference by sex FHCI [p-val=0.856], although the scheme is targeted at pregnant or lactating women and children under five.

Among the respondents who were aware of the initiative, nine out of ten had a correct understanding that the FHCI provides free care for pregnant/lactating mothers and children under five years of age. However, more than one in five (23%) participants believed that everyone was eligible to receive free health care. Also, only one in five respondents (20%)

[5] Government of Sierra Leone, Basic Package of Essential Health Services for Sierra Leone, March 2010.

were aware that the FCHI could be used to get free eye care services for the eligible groups (Table 14).

Table 14: Awareness and knowledge about the Free Healthcare Initiative

1. Have you ever heard of the government Free Health Care Initiative (FHCI)?					
Awareness about FHCI	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Rural (N=506)**	**Total (N=1099)**
Yes	76 (86.4%)	291 (88.7%)	104 (59.8%)	474 (92.4%)	918 (85.5%)
No	11 (12.5%)	33 (10.1%)	65 (37.4%)	33 (6.8%)	142 (13.2%)
Don't know	1 (1.1%)	4 (1.2%)	5 (2.9%)	4 (0.8%)	14 (1.3%)
Missing	0	1	2	22	25
2. I will now read some statements about FHCI. Please tell me if you agree or disagree with each one: α					
Participants agreeing with the statementβ	**N=76**	**N=291**	**N=104**	**N=474**	**N=918**
FHCI for Everyone	4 (5.4%)	72 (24.5%)	21 (20.2%)	119 (25.5%)	216 (23%)
FHCI for age 5 and less*	74 (97.4%)	244 (83%)	97 (92.4%)	453 (97%)	868 (92.1%)
FHCI for Pregnant and breastfeeding mothers*	74 (97.4%)	244 (83%)	96 (91.4%)	450 (96.6%)	864 (91.8%)
FHCI covering eye care services*	4 (11.8%)	37 (12.6%)	33 (31.4%)	110 (23.5%)	184 (20.4%)

α: includes only respondents who have heard about FHCI (N=918).

β: responses recorded as 'agree' or 'agree somewhat' were combined into one category; column percentages indicated take as denominator the total number of individuals who responded to the question.

* denotes correct knowledge of the initiative

4.1.6. Health seeking behaviour

4.1.6.1. Eye examinations

Routine eye screening was not a common practice for study participants; 80% of our sample reported that they had never had their eyes examined by a health care provider.

The most important reason given for not having an eye examination was that they did not have any problems with their eyes or that they did not feel the need (84.5%). Another commonly cited barrier was the long distance to the closest facility (38.5%). This barrier was reported in Bonthe (60%), Kenema (40%) and Koinadugu (38.5%). No one in the Western Area reported “long distances” as a problem. The lack of money was named by 5% of the respondents across the sample with slightly higher proportions in Kenema (7.5%) and Koinadugu (7.8%).

Among individuals who had their eyes examined (19% of sample): over half reported an eye examination within the past month (26%) or the past year (24.5%). About a third had their eye examined more than two years ago. The main reasons for getting an eye examination was feeling pain in the eye (40%), trouble seeing (38.5%), an eye infection, disease or injury (13%).

Most of the respondents had their eyes examined at public facilities (76%), mainly at government hospitals (56%). About 7.5% visited health centres and 6.6% had an examination by mobile clinics, but there were some regional variations. Health centres were more commonly visited in Kenema (15.5%), while mobile clinics were more common in Bonthe (25%).

More than a third of the sample reported seeking eye care in the private sector (38%). This was more common in the Western Area (57.5%) and Bonthe (43.7%). The most common private providers were private hospitals/clinics, including faith-based organisations (28.3%) followed by private doctors (6.6%).

The main factors associated with receiving an eye examination were vision problems and poverty status. Respondents with poor vision [OR= 20.85; CI 95%: 9.63-45.2; p-val= 0.000] and fair vision [OR= 11.63; CI 95%: 7.17-18.9; p-val= 0.000] were ten to twenty times more likely to have had an eye examination compared to individuals with very good vision. The odds also increased with household wealth with the individuals belonging to the middle wealth quintile [OR_{Q3}= 4.11; CI 95%: 2.21-7.65; p-val=0.000], the second richest quintile [OR_{Q4}= 2.61; CI 95%: 1.32-5.15; p-val=0.006], and the richest quintile [OR_{Q5}= 3.54; CI 95%: 1.87-6.70; p-val=0.000] being 2.6 to four times more likely to have had an eye examination compared to the poorest individuals (Q1). For more details please see **Annex 3**.

Table 15: Eye examination practices

1. Have you ever had your eyes examined by a health care provider?					
Eye examination(s) by health care provider	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Yes	16 (19.5%)	63 (19.1%)	20 (11.4%)	113 (22.4%)	212(19.4%)
No	65 (79.3%)	266 (80.8%)	156 (88.6%)	392 (77.6%)	879 (80.5%)
Don't know	1 (1.2%)	0	0	0	1 (0.1%)
Missing	6	0	0	1	7
2. When is the last time that you had your eyes examined? [α]					
Time elapsed since last eye examination	**N=16**	**N=63**	**N=20**	**N=113**	**N=212**
Within past month	6 (37.5%)	19 (31.1%)	7 (38.9%)	21 (23.8%)	53 (26%)
Within past year	7 (43.7%)	15 (24.6%)	2 (11.1%)	26 (23.8%)	50 (24.5%)
Within past two years	0	10 (16.4%)	3 (16.7%)	17 (15.6%)	30 (14.7%)
More than two years ago	3 (18.7%)	17 (27.9%)	6 (33.3%)	44 (40.4%)	70 (34.3%)
Don't know	0	0	0	1 (0.2%)	1 (0.1%)
Missing	0	2	2	4	8
3. Where did you get your eyes examined? [α]					
Type of facilities visited for eye examination(s) [β]	**N=16**	**N=63**	**N=20**	**N=113**	**N=212**
Public Sector	**10 (62.5%)**	**60 (95.2%)**	**16 (80%)**	**76 (67.2%)**	**162 (76.4%)**
Government Hospital	6 (37.5%)	48 (76.2%)	12 (60%)	53 (46.9%)	119 (56.1%)
Government health centre	0	10 (15.9%)	2(10%)	4 (3.5%)	16 (7.5%)
Mobile clinic	4 (25%)	0	1 (5%)	1 (1.4%)	14 (6.6%)

Community health post	0	2 (3.2%)	0	2 (2.7%)	4 (1.9%)
Field worker	0	0	0	1 (1.4%)	1 (0.5%)
Another public	0	0	1	7	8 (3.8%)
Private Sector	**7 (43.7%)**	**4 (6.3%)**	**4 (20%)**	**65 (57.5%)**	**80 (37.7%)**
Hospital/clinic (incl. FBO)	7 (43.7%)	2 (3.2%)	4 (20%)	47 (41.6%)	60 (28.3%)
Private doctor	0	0	0	14 (12.4%)	14 (6.6%)
Pharmacy	0	1 (1.6%)	0	1 (0.9%)	2 (0.9%)
Mobile clinic	0	0	0	3 (2.6%)	3 (1.4%)
Other private	0	1 (1.6%)	0	0	1 (0.5%)
Other sources	**0**	**4 (6.3%)**	**0**	**0**	**4 (1.9%)**
4. What was the main reason for having your eyes examined last time? α					
Reason for getting an eye exam	**N=16**	**N=63**	**N=20**	**N=113**	**N=212**
Pain in the eye	2 (13.3%)	26 (44%)	8 (44.4%)	36 (40%)	72 (39.6%)
Trouble seeing	9 (60%)	24 (40.7%)	7 (38.9%)	30 (33.3%)	70 (38.5%)
Eye infection/injury/disease	3 (20%)	7 (11.9%)	3 (16.7%)	10 (11.1%)	23 (12.6%)
New glasses/contact lenses	1 (6.7%)	1 (1.7%)	0	3 (3.3%)	5 (2.7%)
Advice from family/friends	0	0	0	4 (4.4%)	4 (2.2%)
Headaches	0	1 (1.7%)	0	3 (3.3%)	4 (2.2%)
Advice on radio	0	0	0	2 (2.2%)	2 (1.1%)
Referred by health staff	0	0	0	2 (2.2%)	2 (1.1%)
Missing	1	4	2	23	30
5. Is there any particular reason why you never had your eyes examined? δ					
Reason for not getting an eye exam β	**N=65**	**N=266**	**N=156**	**N=392**	**N=879**
No problem/No need	57 (86.4%)	223 (83.5%)	111 (70.7%)	362 (90.3%)	753 (84.5%)

Distance to health facility	9 (60%)	24 (40.7%)	7 (38.9%)	0	70 (38.5%)
No money	3 (4.5%)	21 (7.9%)	12 (7.6%)	8 (2%)	44 (4.9%)
No time/never got around it	1 (1.5%)	4 (1.5%)	1 (0.65)	6 (1.5%)	12 (1.3%)
Don't know/ No particular reason	0	1 (0.4%)	3 (1.9%)	10 (2.5%)	14 (1.6%)
Not referred by medical staff	0	5 (1.9%)	1 (0.6%)	5 (1.2%)	11 (1.2%)
Other more important problems	0	6 (2.2%)	2 (1.3%)	0	8 (0.9%)
Can cope well with eye problem	2 (3%)	0	1 (0.6%)	2 (0.5%)	5 (0.6%)
Fear doctor/examination/results	1 (1.5%)	1 (0.4%)	1 (0.6%)	4 (0.7%)	7 (0.8%)
Not willing to take time off work	0	2 (0.7%)	1 (0.6%)	0	3 (0.3%)
Not sure where to go	0	0	5 (3.2%)	2 (0.5%)	7 (0.8%)
Others	0	4 (1.5%)	0	2 (0.5%)	6 (0.7%)
Missing	1	4	2	23	30

α: Includes only respondents who had their eyes examined by a healthcare provider (N=212)
β: Multiple responses allowed
δ: Includes only respondents who believe that onchocerciasis can be prevented (N=879)

Survey respondents were also asked about the sources of information that could influence their decision about an eye examination. The majority of respondents said that they would be very likely to get an eye examination if they were told to do so by a health worker (85%) or a family member/relative (68%). Around 48% would very likely follow an advice of a religious leader and about a third would follow the advice of a village chief (34%). An opinion of an informal drug seller would be important for about a quarter of participants (26%). However, there were some regional variations. Peddlers, religious leaders and village chiefs were much more influential in Bonthe and Koinadugu, than in the two other districts.

Table 16: Likelihood to get an eye examination by source of health information

What would you do if the following people said that you should have an eye examination? Would you get it?					
Likelihood to get an eye examination (by source)	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Family members/relatives					
Very likely	62 (77.5%)	156 (48.4%)	138 (78.4%)	379 (75.6%)	735 (68.1%)
Somewhat likely	17 (21.2%)	133 (41.3%)	33 (18.7%)	84 (16.8%)	267 (24.7%)
Not likely at all	1 (1.2%)	33 (10.2%)	5 (2.8%)	33 (6.6%)	72 (6.7%)
Don't know	0	0	0	5 (1%)	5 (0.5%)
Missing	8	7	0	5	20
Health worker					
Very likely	78 (96.3%)	238 (73.9%)	151 (85.8%)	448 (89.4%)	915 (84.7%)
Somewhat likely	2 (2.5%)	71 (22%)	23 (13%)	38 (7.6%)	134 (12.4%)
Not likely at all	1 (1.2%)	13 (4%)	2 (1.1%)	14 (2.8%)	30 (2.8%)
Don't know	0	0	0	1 (0.2%)	1 (0.1%)
Missing	7	7	0	5	19
Peddler (street pharmaceutical sellers)					
Very likely	39 (49.4%)	30 (9.3%)	86 (48.9%)	127 (25.6%)	282 (26.3%)
Somewhat likely	31 (39.2%)	73 (22.6%)	41 (23.3%)	86 (17.3%)	231 (21.5%)
Not likely at all	9 (11.4%)	215 (66.6%)	48 (27.3%)	233 (47%)	505 (47%)
Don't know	0	5 (1.5%)	1 (0.6%)	50 (10.1%)	56 (5.2%)
Missing	9	6	0	10	25

What would you do if the following people said that you should have an eye examination? Would you get it?					
Religious leader					
Very likely	67 (83.7%)	62 (19.3%)	127 (72.6%)	260 (52.2%)	516 (48%)
Somewhat likely	11 (13.7%)	124 (38.6%)	39 (22.3%)	130 (26.1%)	304 (28.3%)
Not likely at all	2 (2.5%)	134 (41.7%)	9 (5.1%)	92 (18.5%)	237 (22.1%)
Don't know	0	1 (0.3%)	0	16 (3.2%)	17 (1.6%)
Missing	8	8	1	8	25
Village chief					
Very likely	66 (82.5%)	42 (13%)	128 (73.6%)	132 (26.4%)	368 (34.2%)
Somewhat likely	12 (15%)	111 (34.5%)	37 (21.3%)	147 (29.5%)	307 (28.6%)
Not likely at all	2 (2.5%)	165 (51.2%)	9 (5.2%)	180 (36.1%)	356 (33.1%)
Don't know	0	4 (1.2%)	0	40 (8%)	44 (4.1%)
Missing	8	7	2	7	24

4.1.6.2. Use of optical devices

Sixteen per cent of individuals in our sample rated their vision as either fair or poor, but only 7.7% used any devices to improve their vision.

Among the 84 individuals who were using devices, the majority were wearing spectacles (77%), but also contact lenses (21.5%). Ninety-one per cent of them rated their vision as good or very good when using their device and 60% indicated that these were either prescribed or recommended by a health worker.

The use of optical devices was associated with age and vision as anticipated. It was also significantly higher for the wealthiest individuals [ORQ5= 4.94; CI 95%: 1.54-15.79; p-val=0.007] and respondents with formal education [OR= 4.18; CI 95%: 1.93-9.02; p-val=0.000]. Interestingly we did not find any significant association with occupation, after controlling for other variables.

Table 17: Use of optical devices among respondents

1. Without using any device, would you say that eyesight is:					
Self-reported quality of vision without using optical device	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Very good	55 (67.1%)	139 (42.4%)	106 (60.6%)	243 (49.4%)	543 (50.4%)
Good	15 (18.3%)	117 (35.7%)	44 (25.1%)	187 (38%)	363 (33.7%)
Fair	11 (13.4%)	64 (19.5%)	20 (11.4%)	39 (7.9%)	134 (12.4%)
Poor	1 (1.2%)	8 (2.4%)	5 (2.9%)	23 (4.7%)	37 (3.4%)
Missing	6	1	1	14	22
2. Do you use any device to help you see better?					
Usage of optical device to improve vision	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Yes	4 (4.9%)	22 (6.7%)	10 (5.7%)	48 (9.5%)	84 (7.7%)
No	78 (95.1%)	303 (92.9%)	165 (94.3%)	456 (90.5%)	1002 (92.2%)
Don't know	0	1 (0.3%)	0	0	1 (0.1%)
Missing	6	3	1	2	12
3. If yes, what device do you use?					
Type of optical used to improve vision	**N= 4**	**N=22**	**N=10**	**N=48**	**N=84**
Spectacles	3 (75%)	19 (86.4%)	9 (100%)	30 (68.2%)	61(77.2%)
Contact lenses	1 (25%)	3 (13.6%)	0	13 (29.5%)	17 (21.5%)
Magnifying loop	0	0	0	1 (2.3%)	1 (1.3%)
Missing	0	0	1	4	5
4. Did a health worker prescribe or recommend this device?					
Prescription of optical device by medical staff	**N= 4**	**N=22**	**N=10**	**N=48**	**N=84**
Yes	2 (50%)	8 (36.4%)	5 (55.6%)	33 (73.3%)	48 (60%)

No	2 (50%)	14 (63.6%)	3 (33.3%)	12 (26.7%)	31 (38.7%)
Don't know	0	0	1 (11.1%)	0	1 (1.2%)
Missing	0	0	1	3	4
5. When using this device, would you say that eyesight is:					
Self-reported quality of vision when using optical device	**N= 4**	**N=22**	**N=10**	**N=48**	**N=84**
Very good	2 (50%)	6 (28.6%)	6 (66.7%)	15 (34.1%)	29 (37.2%)
Good	2 (50%)	10 (47.6%)	2 (22.2%)	28 (63.6%)	42 (53.8%)
Fair	0	3 (14.3%)	1 (11.1%)	1 (2.3%)	5 (6.4%)
Poor	0	2 (9.5%)	0	0	2 (2.6%)
Missing	0	1	1	4	6

α: Includes only respondents who are using an optical device to improve vision (N=84)

4.1.7. Findings about disability

The purpose of this part of the study was to assess the general population's knowledge about the disability related legislation, as well explore the attitudes towards disability and persons with disability.

4.1.7.1. Knowledge and attitudes towards disability in the general population

Respondents were asked to rate how they believe various types of impairment would impact their day-to-day life on a scale from 1 to 5 (with 1 having the least impact and 5 having the greatest impact on daily activities). Overall, respondents perceived that both vision loss and memory loss would have the biggest impact on their daily activities (mean scores = 4.3), followed by loss of a limb (mean = 3.7), loss of speech (mean = 3.5), and loss of hearing (mean = 3.3). Nearly two out of three respondents attributed a '5' (highest impact) to vision loss (65.6%) and memory loss (65.5%) (**Table 18**).

Table 18: Public perception of the impact of different impairments on day-to-day activities

I will now ask about how you think certain conditions will affect your day-to-day life. how would you rate the loss of the following functions on a scale of 1 to 5 (with 1 having the least impact and 5 having the greatest impact on your daily life)?					
Impact on day to day life score (scale of 1-5)	**Vision (N=1064)**	**Memory (N=1061)**	**Limb (N=1062)**	**Speech (N=1061)**	**Hearing (N=1062)**
1 (lowest impact)	75 (7%)	77 (7.3%)	124 (11.7%)	119 (11.2%)	155 (14.6%)
2	33 (3.1%)	26 (2.4%)	101 (21.2%)	134 (12.6%)	158 (14.9%)
3	68 (6.4%)	77 (7.3%)	174 (16.4%)	240 (22.6%)	235 (22.1%)
4	190 (17.9%)	186 (17.5%)	245 (23.1%)	235 (22.1%)	217 (20.4%)
5 (greatest impact)	698 (65.6%)	695 (65.5%)	418 (39.4%)	333 (31.4%)	297 (28%)
Mean value	**4.3**	**4.3**	**3.7**	**3.5**	**3.3**

About 78% of respondents reported that they personally knew someone with a disability, usually a relative, a friend or an acquaintance.

When the respondents were asked to articulate the first word that came to their mind when thinking of people with disabilities, the overwhelming response was compassion and/or empathy (80%). Less than one in ten participants associated persons with disability with a need for care/support (9%) and 6.5% associated disability with an illness.

The vast majority of respondents agreed with the statement that “people with disability are equal members of society” (86%) and that “government and communities should do everything in their power to ensure equal opportunities for people with disabilities regardless of the costs” (86%).

Interestingly, more than a third of respondents (37%) disagreed with the statement that “government and communities were not able to significantly help people with disability no matter how hard they try”. They believed that the community could support persons with disability by giving alms (65%), providing home care and personal services (40%), providing education or training (21.5%), ending discrimination (16%), giving work/employment opportunities (15%), and through inclusion of persons with disability in community activities (13.5%) (**Table 19**).

Table 19: Knowledge of and attitudes towards disability in the general population

Do you know someone with a disability (relative, friend, acquaintance)?					
Knowing someone with a disability	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Yes	67 (82.7%)	221 (71.8%)	120 (69.4%)	390 (84%)	798 (77.8%)
No	13 (16%)	81 (26.3%)	48 (27.7%)	73 (15.7%)	215 (21%)
Don't know	1 (1.2%)	6 (1.9%)	5 (2.9%)	1 (0.2%)	13 (1.3%)
Missing	7	21	3	42	73
What is the first idea or word that comes to your mind when you think of people with disability?					
Ideas/words associated with people with disabilities	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Compassion/empathy	74 (91.4%)	279 (88.3%)	77 (44.8%)	418 (85.3%)	848 (80.1%)
Need care/help/support	0	16 (5.1%)	36 (21%)	41 (8.4%)	93 (8.8%)
Diseases/illness/sickness	5 (6.2%)	13 (4.1%)	39 (22.7%)	12 (2.4%)	69 (6.5%)
Accident/evil faith	2 (2.5%)	6 (1.9%)	9 (5.2%)	3 (0.6%)	20 (1.9%)
Stigma/discrimination/exclusion	0	2 (0.6%)	7 (4.1%)	9 (1.9%)	18 (1.7%)
Others	0	0	1 (0.6%)	6 (1.2%)	7 (0.7%)
Don't Know	0	0	3 (1.7%)	1 (0.2%)	4 (0.4%)
Missing	7	13	4	16	40
How can the community/society support people with disability?					
Community/society support to people with disabilities[α]	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Give alms	37 (46.8%)	203 (64.2%)	121 (68.7%)	333 (67.7%)	694 (65.3%)
Providing home care/services	69 (85.2%)	140 (44.3%)	53 (30.1%)	160 (32.4%)	422 (39.6%)

Provide education/training	25 (31.2%)	63 (19.9%)	29 (16.5%)	112 (22.7%)	229 (21.5%)
End discrimination	25 (30.9%)	8 (2.6%)	25 (14.2%)	112 (22.7%)	170 (16%)
Give work/employment opportunity	26 (32.1%)	53 (16.8%)	10 (5.7%)	72 (14.6%)	161 (15.1%)
Include them in community activities	16 (19.7%)	6 (1.9%)	37 (21%)	85 (17.2%)	144 (13.5%)
Don't know	8 (9.9%)	17 (5.4%)	4 (2.3%)	22 (4.5%)	51 (4.8%)
Cater for their basic needs	0	23 (7%)	1 (0.6%)	33 (6.5%)	57 (5.2%)
Others	0	9 (2.7%)	1 (0.6%)	19 (3.8%)	29 (2.6%)
I will now read you statements about people with disability. Please tell me if you agree or disagree with each one:					
a. *Government and communities should do everything in their power to ensure equal opportunities for people with disability regardless of the costs* β					
Agree	62 (76.5%)	264 (83.5%)	125 (71%)	466 (94.1%)	917 (85.9%)
Agree somewhat	13 (16%)	47 (14.9%)	44 (25%)	16 (3.2%)	120 (11.2%)
Disagree	0	1 (0.3)	5 (2.8%)	11 (2.2%)	17 (1.6%)
Don't know	6 (7.4%)	4 (1.3%)	2 (1.1%)	2 (0.4%)	14 (1.3%)
b. *People with disability are equally valuable members of society as anyone else* β					
Agree	58 (71.6%)	293 (93.3%)	113 (64.2%)	452 (91.3%)	916 (85.9%)
Agree somewhat	16 (19.7%)	11 (3.5%)	60 (34.1%)	34 (6.9%)	121 (11.3%)
Disagree	1 (1.2%)	7 (2.2%)	3 (1.7%)	8 (1.6%)	19 (1.8%)
Don't know	6 (7.4%)	3 (1%)	0	1 (0.2%)	10 (0.9%)
c. *The government and communities are not able to significantly help people with disability, no matter how hard they try* β					
Agree	39 (48.1%)	28 (8.9%)	20 (11.4%)	129 (26.2%)	216 (20.3%)
Agree somewhat	2 (2.5%)	82 (26%)	63 (36%)	155(31.4 %)	302 (28.4%)

Disagree	1 (1.2%)	172 (54.4%)	67 (38.3%)	151 (30.6%)	391 (36.7%)
Don't know	39 (48.1%)	34 (10.8%)	25 (14.3%)	58 (11.8%)	156 (14.6%)

α: multiple responses allowed

β: Column percentages take as denominator the total number of individuals who responded to the question (excl. missing values).

4.1.7.2 Attitudes towards social inclusion of people with disabilities

As a way to assess the level of social stigma associated with disability, we asked respondents what type and level of interaction they would find acceptable with regard to people with sensory, physical or mental disability.

Most of the respondents demonstrated relatively positive attitudes towards relatives with disability stating that they would not want to keep it secret if a family member had a disability (89%) and that they would be willing to take care of someone with disability in their household (92.5%).

Relative wealth was the main factor associated with respondents' attitudes towards family members with disability, after controlling for another variable (see Annex 4). Individuals from wealthier households were more likely to be willing to care for a family member with a disability. The odds of taking care for someone with a disability increased 8.4 times for individuals belonging to the middle wealth quintile [OR_{Q3}= 8.44; CI 95%: 2.36-30.2; p-val=0.001], by a factor of 22.1 for individuals in the second richest quintile [OR_{Q4}= 22.07; CI 95%: 2.76-175.98; p-val=0.003], and by a factor of 14.4 for those in the richest quintile [OR_{Q5}= 14.38; CI 95%: 3.05-67.81; p-val=0.001] compared to the poorest individuals (Q1). However, the wealthier individuals were more likely to hide disability in their household. those who would be the least wiling to disclose someone with a disability in their households. Wealthier respondents (Q5) were 4 times more likely to keep disability in their household as secret [OR= 4.37; CI 95%: 1.61-11.80; p-val=0.004] compared to those in the poorest quintile (Q1).

Another important finding from the survey is that the level of social stigma associated with disability varied by the type of impairment. We found that negative attitudes and stigma were systematically higher towards persons with mental health related impairment than towards those with physical or sensory impairments (figure 2).

Thus, over 90% of respondents would live in the same street or settlement as a person with physical or sensory impairment (93.6% and 90.9% respectively) but only 42% would accept living near someone with mental health impairment or disease.

Similarly, over 80% of respondents would accept their child socializing with a friend with physical or sensory impairment (86% and 80% respectively), while only 14% would accept it with a child with mental health disability.

With regards to marriage, half of the respondents (50%) reported that they would consent if a member of their family wanted to marry a person with physical impairment, 39.5% for a person with sensory impairment, and only 7.6% for a person with mental health disability.

The proportion of positive responses was lower when the respondents were asked if they themselves would marry someone with a disability, including physical disability (40%), sensory disability (33%), and mental health disability (4%) (table 22).

Figure 2: Attitudes towards social interactions with people with disabilities

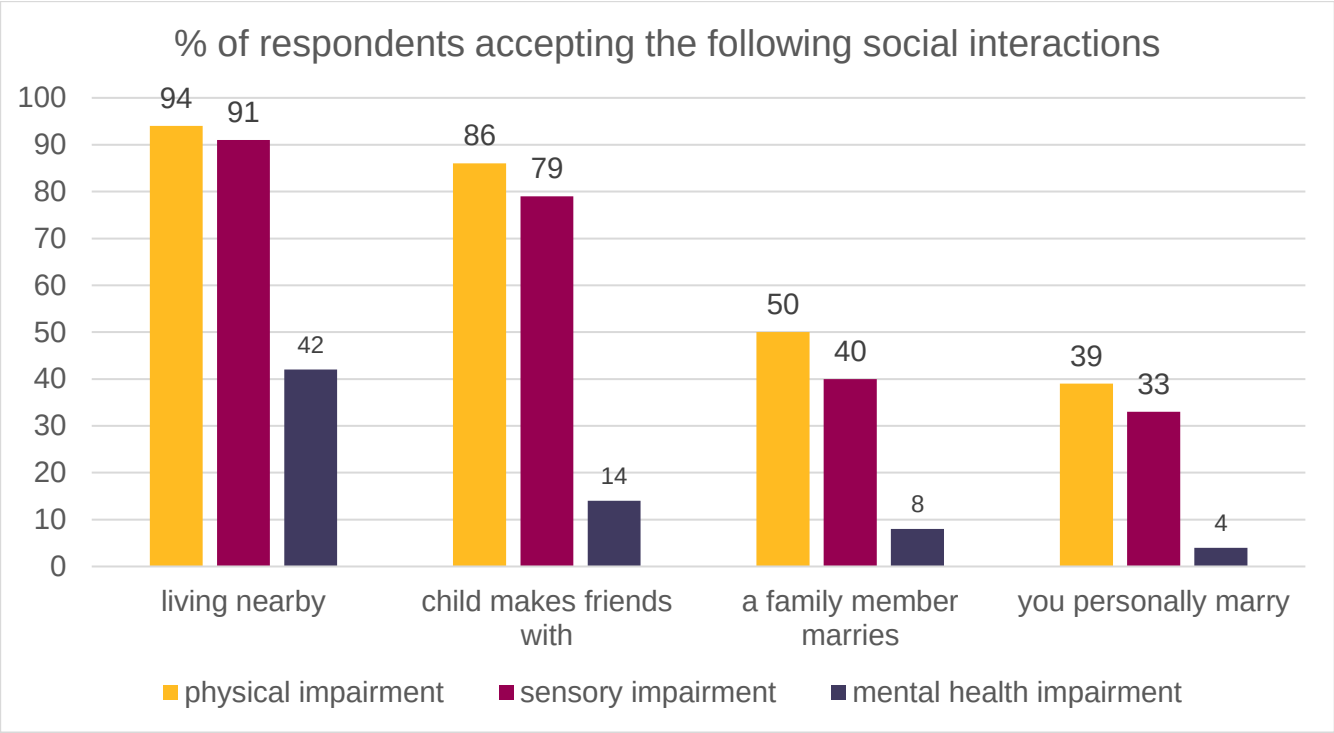

Table 20: Attitudes towards social inclusion of people with disabilities in the general population

If a member of your family had a disability, would you want it to remain a secret or not?					
Willing to keep secret about family member with disability	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Yes	1 (1.3%)	13 (4.1%)	7 (4%)	40 (8.1%)	61 (5.7%)
No	80 (98.8%)	290 (92%)	167 (94.9%)	413 (83.3%)	950 (89%)
Don't know/Not sure/depends	0	12 (3.8%)	2 (1.1%)	43 (8.7%)	57 (5.3%)
Missing	7	14	0	10	31
If a member of your family had a disability, would you be willing to care for her/him in your own household?					
Willing to care for disabled family member in own household?	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**

Yes	71 (87.6%)	282 (92.2%)	139 (81.3%)	471 (97.5%)	963 (92.5%)
No	0	6 (2%)	22 (12.9%)	4 (0.9%)	32 (3.1%)
Don't know/Not sure/depends	10 (12.3%)	18 (5.9%)	10 (5.9%)	8 (1.7%)	46 (4.4%)
Missing	7	23	5	23	58
Please tell me if it would be acceptable for you to live in the same street or settlement as someone who has:					
Accepting to live in same street/settlement α	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Physical impairment	76 (93.8%)	278 (89.1%)	169 (96.6%)	470 (95.3%)	993 (93.6%)
Sensory impairment	67 (82.7%)	280 (89.7%)	165 (94.3%)	449 (91.8%)	961 (90.9%)
Mental impairment	9 (11.1%)	147 (47.1%)	66 (38.1%)	221 (45.3%)	443 (42%)
Please tell me if it would be acceptable for you if your child is socializing/playing with another child who has:					
Accepting child to socialise/play α	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Physical impairment	70 (86.4%)	237 (75.7%)	161 (91.5%)	452 (91.1%)	920 (86.3%)
Sensory impairment	59 (72.8%)	236(75.4%)	148 (84.6%)	395 (80.6%)	838 (79.1%)
Mental impairment	0	66 (21.1%)	22 (12.6%)	58 (11.9%)	146 (13.8%)
Please tell me if it would be acceptable for you if a member of your family is marrying someone who has:					
Accepting family member to marry α	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Physical impairment	19 (23.5%)	137 (43.5%)	110 (63.2%)	271 (54.7%)	537 (50.4%)
Sensory impairment	11 (12.6%)	109 (34.7%)	98 (56.3%)	201 (40.8%)	419 (39.5%)

Mental impairment	0	18 (5.7%)	26 (14.9%)	37 (7.5%)	81 (7.6%)
Please tell me if it would be acceptable for you to marry someone who has:					
Accepting for themselves to marry α	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Physical impairment	12 (14.8%)	95 (30.2%)	97 (55.7%)	215 (43.3%)	419 (39.3%)
Sensory impairment	7 (8.7%)	72 (22.9%)	92 (52.6%)	183 (37%)	354 (33.2%)
Mental impairment	0	13 (4.1%)	6 (3.4%)	24 (4.9%)	43 (4%)

α: only showing number of positive responses 'yes' for each statement; 'no' or 'don't know/not sure/it depends' responses are not reported here.

4.1.7.3. Attitudes towards education and employment of people with disabilities

Over two thirds (76%) of respondents reported that they would employ a person with disability, if they had relevant skills and qualifications.

With regards to children, 87% of respondents indicated that they would be willing to send their child to school, if their child had a disability. When prompted about the type of schooling for children with disability, respondents gave a diverse range of answers (more than one option was allowed. Over 76% of respondent would be willing to send their child to the mainstream school, if the curriculum and materials were adjusted; 68% would be willing for their child to go to mainstream school and have the same curriculum and activities, as other children; 55% would want their child to go to mainstream school with separate classes for children with disabilities, while 66% would send their child to a special school. One in ten respondents said that children with disabilities should not go to school at all (**Figure 3, Table 21**).

Figure 3: Supported types of education for children with disability among survey respondents

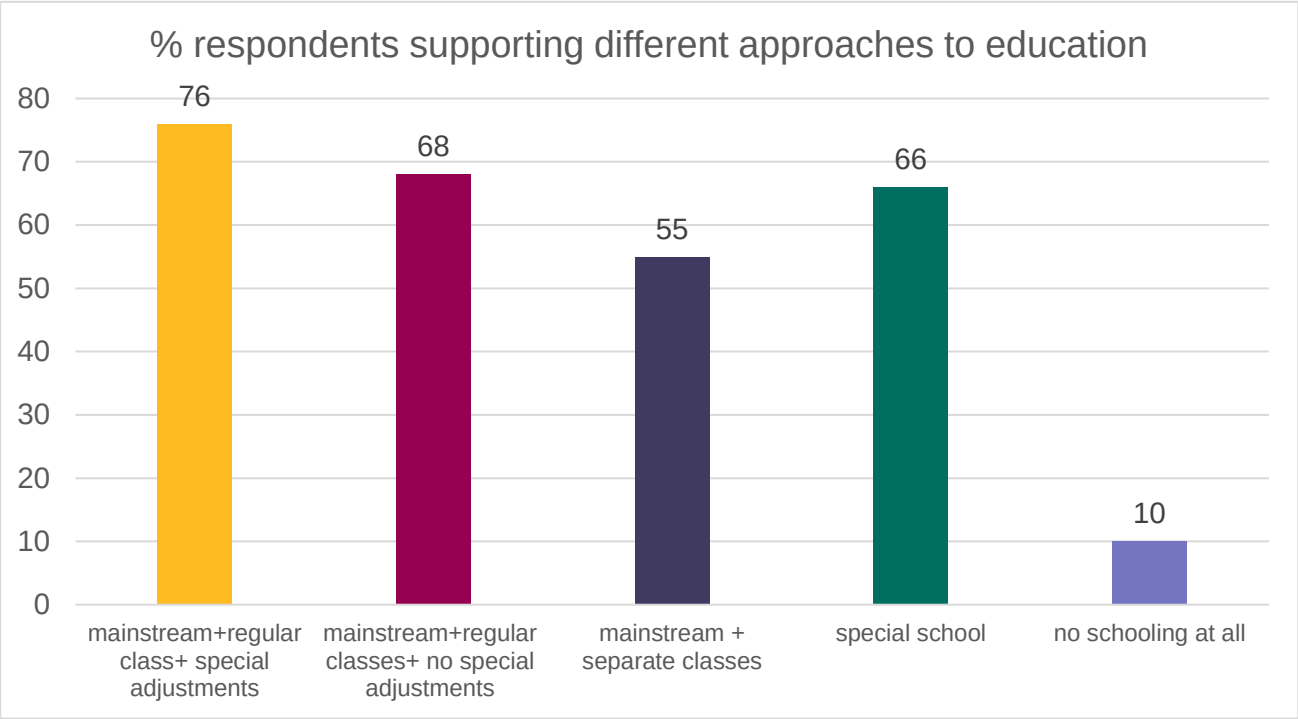

Table 21: Attitudes towards education and employment of people with disabilities

If you were in a position to employ someone to work for you, would you be ready to employ a person with disability with the required skills and classifications?					
Willing to employ someone with disability	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Yes	50 (62.5%)	195 (69.6%)	124 (77%)	378 (81.8%)	747 (76%)
No	9 (11.2%)	77 (27.5%)	30 (18.6%)	80 (17.3%)	196 (19.9%)
Don't know	21 (26.2%)	8 (2.9%)	7 (4.3%)	4 (0.9%)	40 (4.1%)
Missing	8	49	15	44	116
If you had a child with disability, would you be willing to send him to school?					
Willing to send own child with disability to school	**N=88**	**N=329**	**N=176**	**N=506**	**N=1099**
Yes	52 (64.2%)	263 (84.8%)	158 (90.8%)	437 (91.4%)	910 (87.2%)

No	15 (18.5%)	46 (14.8%)	14 (8%)	40 (8.4%)	115 (11%)
Don't know	14 (17.3%)	1 (0.3%)	2 (1.1%)	1 (0.2%)	18 (1.7%)
Missing	7	19	2	28	56
Please tell me if you agree or not with the following statements:					
a. A child with disability should not go to school at all					
Agree	14 (17.3%)	49 (15.7%)	16 (9.1%)	32 (6.4%)	111 (10.4%)
Disagree	51 (63%)	258 (82.7)	159 (90.9%)	463 (93.2%)	931 (87.4%)
Don't know	16 (19.7%)	5 (1.6%)	0	2 (0.4%)	23 (2.2%)
Missing	7	17	1	9	34
b. A child with disability should go to special schools, in which program and access would be adjusted to their needs					
Agree	38 (46.9%)	240 (76.7%)	115 (65.7%)	314 (63.2%)	707 (66.3%)
Disagree	26 (32.1%)	62 (19.8%)	56 (32%)	178 (35.8%)	322 (30.2%)
Don't know	17 (21%)	11 (3.5%)	4 (2.3%)	5 (1%)	37 (3.5%)
Missing	7	16	1	9	33
c. A child with disability should go to regular schools in separate classes, where the teaching would be adjusted to their needs					
Agree	39 (48.1%)	170 (54.7%)	121 (69.1%)	254 (51.2%)	584 (54.9%)
Disagree	24 (29.6%)	127 (40.8%)	49 (28%)	238 (48%)	438 (41.2%)
Don't know	18 (22.2%)	14 (4.5%)	5 (2.9%)	4 (0.8%)	41 (3.9%)
Missing	7	18	1	10	36
A child with disability should go to regular schools in regular classes, and treated the same way as other children					
Agree	36 (44.4%)	190 (61.1%)	98 (56%)	397 (79.9%)	721 (67.8%)
Disagree	28 (34.6%)	108 (34.7%)	75 (42.9%)	92 (18.5%)	303 (28.5%)

Don't know	17 (21%)	13 (4.2%)	2 (1.1%)	8 (1.6%)	40 (3.8%)
Missing	7	18	1	9	35
A child with disability should go to regular schools in regular classes, but program and methods of teaching should be adjusted (e.g. teachers would be trained to provide specific support)					
Agree	57 (71.2%)	237 (76.7%)	122 (73.5%)	385 (77.8%)	801 (76.3%)
Disagree	6 (7.5%)	60 (19.4%)	39 (23.5%)	88 (17.8%)	193 (18.4%)
Don't know	17 (21%)	12 (3.9%)	5 (3%)	22 (4.4%)	56 (5.3%)
Missing	8	20	10	11	49

4.1.7.4. Knowledge of disability related legislation and Disabled People's Organisations

Few respondents in our sample had heard about any disability related legislation or Disabled Persons' Organisations (DPOs). Nearly seven out of 10 respondents (68%) reported that they had never heard of the Disability Act which was adopted by the Parliament in March 2011**.** Only one in four respondents (28%) indicated that they had heard about DPOs (**Table 22**). The organisations most often cited by the respondents were School for the Blind, Future in our hands, Handicap international, Sightsavers, Sierra Leone Union for Disability Issues (SLUDI), and Sierra Leone Association for the Blind (SLAB). There was little difference in the knowledge of the disability legislation between the districts, but there were more people who were aware of DPOs in the Western Area compered to three other districts (43.7%). In Kenema in particular, only 10% of respondents reported that they had heard about DPOs.

After controlling for other factors, the level of awareness about disability legislation was associated with relative wealth, education, age and self-reported vision. Knowledge about DPOs was associated with being a male, education, relative wealth and a history of disability in the household. People in the wealthiest economic quintile (Q5) were three times more likely to know about both the disability legislation and DPOs than those in the poorest quintile (Q1). Those with some form of education were nearly two times more likely to know about the legislation and 2.7 times more likely to know about DPOs than those without education. People with self-reported poor vision[6] were 2.7 times more likely to know about the Disability Act compared to those with very good vision (OR = 2.67; CI 95%: 1.25-5.68). Male respondents and those with a history of disability in the household were 1.4-1.5 times more likely to know about DPOs, compared to women and those without disability in the household (OR = 1.38; CI 95%: 1.02- 1.86 and OR = 1.5; CI 95%: 1.11-2.03, respectively). For details, please see **Annex 4**.

[6] This category excludes respondents who were considered as having a disability (i.e. any respondent who reported having 'a lot of difficulties' to see or who were blind 'cannot see at all')

Table 22: Knowledge about Disability Act, Disability Peoples Organization and Person with disability

Have you ever heard about the Disability Act?					
Awareness about Disability Act	**Bonthe (N=88)**	**Kenema (N=329)**	**Koinadugu (N=176)**	**Western Area (N=506)**	**Total (N=1099)**
Yes	15 (18.5%)	69 (22%)	38 (21.8%)	177 (37.1%)	299 (28.6%)
No	59 (72.8%)	231 (73.8%)	130 (74.7%)	298 (62.5%)	718 (68.7%)
Don't know	7 (8.6%)	13 (4.1%)	6 (3.4%)	2 (0.4%)	28 (2.7%)
Missing	7	16	2	29	54
Have you ever heard about Disabled People Organisations (DPOs)?					
Awareness about DPOs	**N = 88**	**N=329**	**N=176**	**N=506**	**N=1099**
Yes	22 (27.2%)	32 (10.1%)	33 (19%)	215 (43.7%)	302 (28.4%)
No	53 (65.4%)	259 (82%)	127 (73%)	265 (53.9%)	704 (66.2%)
Don't know	6 (7.4%)	25 (7.9%)	14 (8%)	12 (2.4%)	57 (5.4%)
Missing	7	13	2	14	36

4.2. Findings from in-depth interviews with people with disabilities

4.2.1. Characteristics of people with disabilities interviewed

We conducted in-depth interviews with people with disabilities in order to complement and validate the findings of the survey. Forty-two people with disabilities were purposefully selected from the survey sample.

Out of 42 participants, 19 were female (45.2%). Seventeen participants had vision impairment (40.5%); 10 had mobility difficulties (23.8%). Frequency of other types of disabilities among these participants is shown in **Table 23**.

Table 23: Characteristics of participants with disabilities selected for in-depth interviews

Disability	Bonthe	Kenema	Koinadugu	Western Area	Total
Females	7	5	4	3	19
Hearing	1	0	0	0	1
Mobility	2	0	2	0	4
Self-care	1	1	0	0	2
Vision	2	4	0	2	8
Multiple	1	0	2	1	4
Males	4	10	5	4	23
Cognitive	0	0	0	2	2
Communication	0	0	0	1	1
Mobility	3	2	1	0	6
Vision	1	3	4	1	9
Multiple	0	5	0	0	5
All	**11**	**15**	**9**	**7**	**42**

4.2.2. Perceived impact of disability

4.2.1.1. Limitation of daily activities

One of the key impacts of disability reported by the interviewees was limitation of their daily activities. Respondents often reported not being able to do basic activities, such as getting dressed, preparing food, fetching water, go to the toilet or handling money without assistance:

> *"When I was having my eyesight, I would normally go to the farm and do a lot of activities by myself but now I cannot even fetch water for myself as a result of the sickness. As a blind person, if I want to walk around I will need somebody to lead me so that I can walk around the community (…) like going to the toilet, walk around the community, go to the main road, somebody will have to lead me" (male, visual impairment, Koinadugu)*

> *"I do not see myself in the mirror. I do not even know when I have long nails unless those with better eyes tell me. I cannot cut my nails or shave my beard. These are the troubles that are causing me pain [tormenting me]. If an eye problem is not solved, someone regress, like I am. Everything I used to get money from has come to a standstill. I cannot see anything as I used to. I worry that I cannot even count money on my own" (Male, visual impairment, Kenema)*

The role of spouses and children was described as very important to help people with disabilities to cope with their basic daily activities and secure basic necessities such as food, water, shelter and clothing. Participants often mentioned that their survival solely depended on others and many were concerned about the burden that they represented for their close relatives in the household:

> *"I used to feed people but I have now to rely on others for everything that will keep me in this world" (Male, multiple impairments, Kenema)*

> "*I cannot do anything unless I get help from my children. I feel discouraged [because] I used to do things on my own before and now I am an inconvenience for my children. They hardly carry out their own business because they have to look after me" (Female, self-care, Kenema)*

4.2.1.2. Impact on livelihoods

The majority of people interviewed in this study said that they could not carry out any income generating activities due to their disability. Many reported having to stop working. This was particularly true for physical activities such as farming, wood cutting and selling products at the market:

> *"It is actually difficult for me now, because I cannot work anymore. As I have mentioned before, I am a farmer so I used to go to my farm every day, go to the periodic market centre to sell and buy goods. I was involved in honey [sweet] beans production. Those were the activities I was involved in before becoming blind" (Male, visual impairment, Koinadugu)*

Some respondents reported that they managed to continue to work and earn an income despite their impairment; it was usually in the cases where respondents had specific skills and were engaged in skilled work such as cobbler, blacksmith or weaver. Those who reported being employed or having another stable economic activity had the least support needs; some respondents with disability even said that they were the main bread winner in their family:

> *"As I grew up, I had no work to do so I learned how to be a cobbler. I earn money from that [activity] to help my family members (…) I thank God because I can do things on my own [I am independent]. My parents don't have the upper hand and it is thanks to my cobbler job that I am able to assist them" (Male, mobility impairment, Kenema)*

Most respondents however said that although they used to contribute to the family earnings or subsistence in the past; they now solely depended on others for their livelihood. Some even reported that they had to resort to begging to earn a living:

> *"Yes, it troubles my mind. Now, when it is time for farm work, I would like to help my family by going to the farm… especially with the palm kernels as I used to be responsible for that work...but I no longer do it now" (Female, mobility impairment, Bonthe)*
>
> "*I became blind three years ago. Since then I cannot do any active job again, I have to beg for my living" (<ale, visual impairment, Koinadugu)*

4.2.1.3. Reduced role and involvement in the community

Respondents often mentioned that they were excluded from community life because of their impairment. However, individuals who were involved in decision-making for their community usually continued to play a role, although in many instances it was physically challenging and required assistance from others:

> *"I was and still remain a leader here [in this community]. As the year goes round, names are taken for tax to be paid. I am not able to carry out these functions as I used to. I have lost my sight, and so when meetings are called, I cannot make it until someone leads me [there]" (male, visual impairment, Kenema).*
>
> *"(…) we were the head of Islam activities in this community and all the work for the mosque you see there were done by us. I was leader in that mosque before, but relinquished my position when I became blind" (male, visual impairment, Kenema)*

A number of respondents indicated that they had stopped taking part in social and community events because of their impairment. The reasons given by the participants included:

- Lack of financial means
- Having other more urgent priorities
- Limited mobility and a need for someone to accompany them
- Feeling ashamed because of looking or behaving differently
- Fear of negative attitudes, stigma and rejection

"I do not participate in any activities in this community due to my blindness. If I was not blind, I would take part in community activities (…) When I had my eyesight, I was involved in a lot of activities with my family but now I don't have that chance. … I don't have that ability anymore" (male, visual impairment, Koinadugu)

"*I do not participate in any activities because I do not have the means; I cannot provide for myself except somebody has pity for me and gives something" (male, visual impairment, Koinadugu)*

"*Well formerly when dancing was organized in this town, I used to be one of the chairladies. [But] that is not happening now because of this sickness. In fact, most of the times when dancing is organized here, I decide to go to bed early that night because I am ashamed of myself (female, mobility impairment, Bonthe)*

The only social activity several respondents continued to take part in was attending church or mosque for prayers:

"Well even if I have problems with my eyes, I always perform ablutions and walk to the mosque to pray, after which I return home using the same route (…) Apart from this, there is no other occasion that I attend" (female, visual impairment, Bonthe)

4.1.2.4. Negative feelings and low self-esteem

The loss of independence and ability to socialise and contribute to the community had a negative impact on the levels of confidence and self-esteem among people with disabilities. Many reported feelings sad and ashamed; some felt they had been defeated and had no purpose in life:

"Well. To me, this condition is pathetic. I do feel sorry for myself. My current condition is sorrowful (…) because I am not working any longer as I used to. I have to be assisted by people for everything presently, do you understand?" (Male, visual impairment, Bonthe)

"I do not feel happy because I remember my old days. I used to control money and did everything by myself. Now people render me such assistance. I have no means to fend for myself. I feel discouraged about that. I stay in this room disheartened. I surrender my life to God" (Male, mobility impairment, Kenema)

"I am ashamed because of my present condition, I am here permanently doing nothing, while people in my age group continue to do the business [activities] that we used to do; and because I am no longer interacting with them. When I observe their activities, I feel ashamed of myself, and it makes me cry" (Female, mobility impairment, Bonthe)

"*I am feeling very bad about myself. Whenever I think of what I used to do, I feel sad and discouraged (…) there is nothing I can do about that, except look up to God" (Male, visual impairment, Koinadugu)*

4.1.3. Views on social attitudes towards people with disability

4.1.3.1. Attitudes of the community

People with disabilities who were interviewed as part of this study had mixed experiences with regards to social attitudes and interactions with other people in their communities. Some respondents said that they were treated nicely, and that people showed sympathy or kindness to them:

> "*[In this community] they are very kind to me; my friends come and visit me and then we do things together. If I am sitting lonesome, they will come to me and say let's spend time together (…) No one has said any bad word to me" (Female, mobility impairment, Koinadugu)*

Others were more nuanced and said that although people had a positive attitude in general, many people with disabilities had very little or no social interactions with other members in the community and felt excluded:

> *"The only thing between us is greetings (…) whether they like me or not, people will always say, yeah K. 'morning', then away they go. That is all." (Female, hearing impairment Bonthe)*

> *"Some do sympathise with me but majority don't spend time with me. In fact my best friend deserted me because of my condition" (Male, visual impairment, the Western area)*

Some participants were talking about "hidden" stigma and discrimination, where typically, people are nice and polite, but would prefer to avoid close social interactions and not to have people with disabilities around on special or intimate occasions, as one interviewee described:

> *"Well, they [projects] do sensitise some of our companions but they still don't have an open mind for us … Some of them, when they are with their fiancée, they will not want you to move along" (Male, mobility impairment, Koinadugu)*

Some respondents also shared stories when they experienced provocations or mockery because of their impairment. In many cases, these episodes involved local children from the community, who behaved irresponsibly and were abusive, as one female participant described:

> "*The town Chief gives all the respect … to me, but some children do provoke me, when moving around. No elderly person has yet provoked me so far. When in their midst, they accord me my utmost respect. Provocation by the children makes me discouraged and angry" (Female, visual impairment, Kenema)*

There was evidence from the interviews that people with disabilities had very different experiences with regards to stigma and discrimination in their communities and often, these experiences depended on other individual characteristics, such as a person's age, social position, prior involvement in the community and sometimes, the type of impairment:

> "*I am a decision maker on community matters and [people in this community] they listen to me (…) nobody has shunned me or discriminated against me. I am respected in everything, even though I am disabled" (Male, mobility impairment, Kenema).*

4.1.3.2. Attitudes of family members

Respondents generally described good relationships with their family members, including close relatives and their extended family. In fact, a number of participants said that the only social interactions and support they received had been from their family. This included help with daily activities and financial support.

> *"My family does not have any problem; they do not treat me differently because of my disability. They take good care of my clothing, feeding and shelter" (Male, visual impairment, Koinadugu)*

> *"There is a common understanding between me and my family that they will always help me when I need it. I have grandchildren who love to be around me and children who make sure that I am doing fine. I am not neglected as this is my home and I have done so many good things when I was [still] able to see" (Male, multiple impairments, Kenema)*

Some respondents however did experience stigma and discrimination in their family, which often came from the relatives outside their immediate household, as one female described:

> "*I think my mother and my husband are the only people treating me well, but the rest of my relatives are pushing me because of my condition (…) they are not treating me well" (Female, mobility impairment, Koinadugu)*

It was also reported that sometimes, the family of the spouse had negative attitudes, which in many cases resulted in separation:

> *"I was shunned by the woman's family because of my condition (…) the woman left me. She is being supported by her family on that. I think she is ashamed to stay with me because of my condition. Her family talk a lot about my disability. That is the trouble" (Male, mobility impairment, Kenema)*

4.1.4. Access to health care services

4.1.4.1 Information channels

Data from the interviews suggests that knowledge about where to access health care services is not a major issue for people with disabilities interviewed. Most people knew where and how to access basic health care services; the knowledge of more specialised services, such as eye care, mental health services and rehabilitation services, was more limited.

The main source of health information cited by the respondents was the radio; but many participants also received information from their family and their community. This was particularly common when outreach health activities were organised or when drugs were available at a nearby facility.

"Whenever there are supplies available, we have our chairman that will announce to us that we should go to the government hospital to collect our medication" (Male, mobility impairment, Koinadugu)

"People usually inform me about such information [health information] or we can also hear it from the radio" (Male, mobility impairment, Bonthe)

Perception of health care services

People with disabilities interviewed in this study had mixed experiences when visiting health care facilities. Some reported being treated with respect by health care personnel:

"I was seated in a wheelchair. The nurses helped me a lot (…) even the doctor assisted in pushing the wheelchair for me" (female, multiple impairments, Kenema).

Others were not satisfied with the way they were treated. Some felt that the health care personnel were disrespectful and inattentive. This feeling however seemed to be caused not so much by patient's disability but their inability to pay for the services or medicines. It was not clear from the interviews whether it was the perception of the health care staff that people with disabilities were unable to pay, or because the people with disabilities did indeed not have money to pay for the treatment:

"Well as a disabled, when you go to the hospital for treatment, they will sometimes look at you as if you were not a human being because you do not have the money or perhaps because of your disability" (Female, mobility impairment, Koinadugu)

"They will tell us that there is no drug supply at the hospital, or they will say that if you do not have money to pay for your treatment you should just forget about it, they are not going to treat you. We will have to return home and buy drugs from peddlers" (Male, mobility impairment, Koinadugu)

Participants with mobility difficulties pointed out inaccessible infrastructure of health facilities, for example steep stairways, uneven surfaces and the absence of ramps:

"Someone leads me there. The young child I told you about lead me by hand ... For me, to climb the steps to the consultation room entails a lot of suffering" (Female, visual impairment, Kenema)

"I was kindly treated [at the hospital]. It is actually difficult to climb up the stairs and I used to crawl when climbing. To avoid the strain, I think they should make sure that no one should have to climb" (Male, visual impairment, Kenema)

"I had to hire the service of a commercial bike rider [motorcycle taxi] to take me to the hospital (…) he did accompany me inside and was very helpful throughout. There were steps at the entrance (…) even with that young man by my side, it was not easy. It is very difficult to climb something, when you are not seeing it" (Male, multiple impairments, Kenema)

Barriers to accessing health services

It was pointed out during the interviews that the barriers to accessing health services for people with disabilities were not different from those for other people in the community; however the presence of an impairment and the poor economic circumstances of people with disabilities exacerbated their effect.

Financial difficulties were the most important reason given by people with disability for not accessing services. Many respondents said that they did not go to health facilities because they did not have money to pay for transportation and could not pay for consultations and treatments prescribed:

> *"As of now, I would have to suffer if I decided to go to the government hospital. I do not have money to hire an Okada [motorcycle taxi]. I have no one I can get a loan from because they know I will not be able to pay back. That is why I do not bother going there. I only walk short distances. The distance is far more than one mile" (Male, multiple impairments, Kenema)*

> *"When at the hospital, if you don't have money, they will not attend to you. Even as a person with disability. It has happened to me at the government hospital. Once I had fever and went to see the doctor for assistance (…). The nurses categorically told me that it would be difficult to access services if I have no money" (Male, mobility impairment, Kenema)*

People with disabilities also said that they could not go to health facilities because they were usually located far from their home and they needed someone to accompany them during the visit. It means that had to rely on the availability of a relative or a friend or hire a motorcycle taxi to go to the health facility. Many participants said that they could only access health services when their family members or others in the community were willing to provide transport, accompany them to the facility and pay their consultation fees.

4.1.4.2. Use of traditional medicine and treatments

Many study respondents said that they used traditional medicines and treatments practiced in their communities. In some cases, traditional medicines were used because patients believed their impairment was caused by supernatural causes; in other cases, the doctors who consulted the patient said that their condition could not be cured and the patients viewed traditional medicines as their last resort. Several participants said that the traditional treatment they used was not effective, but they believed they had no choice:

> *"The nurse told me that they cannot help me out (…) the only treatment I used were drops of native medicine in my eyes or smoking of the eyes [fumigation]. You know I was informed by someone that native medicines and smoking of the eyes are not good at all. H. [respondent's daughter] has spent so much money for this already (…) but I have not regained my sight" (Female, visual impairment, Bonthe)*

"Well I have used mende [traditional medicine] for a long time (…) but I did not see much improvement that is why I have now decided to visit the hospital for treatment" (female, mobility impairment, Bonthe)

"The doctor who diagnosed me said … I will not be cured so I had to go the native way. … They gave me concoctions to drink and others to rub" (Male, multiple impairments, Kenema)

4.1.5. Support available to people with disabilities

4.1.5.1. Government initiatives

Many people with disabilities were not aware of any support available to people with disabilities from the government. The majority of the interviewees had never heard about the Disability Act or the National Commission for Persons with Disability, established to monitor the implementation of the law and promote equal opportunities for persons with disabilities.

The respondents who were aware of the Disability Act said that they had heard about it on the radio or from their relatives or friends:

"Yes, I am aware [about the Disability Act], there are always radio discussions about such things. I have heard that whenever anyone deprives us from our rights, that person should be taken to face the law. And we are all equal, whether you are a disabled person or not. We are all equal in this country" (Male, mobility impairment, Bonthe)

Few participants however reported that they had benefited from the disability legislation in any way, except that the government paid particular attention to the participation of people with disabilities in the last general elections in 2012.

When the content of the articles included in the Disability Act was read to the respondents; they usually had a positive view on the Act and believed that this law was an important step to promote the rights and inclusion of people with disabilities in Sierra Leone:

"I *am convinced that if the government implements most of the laws that are in the [Disability] Act, the situation of people with disabilities will improve (…); the implementation of the Act will empower people with disabilities to have a better life in the future" (Female, multiple impairments, Koinadugu)*

However, participants also expressed numerous concerns about the implementation of the Act and the capacity of the government and other stakeholders to effectively monitor its implementation:

"*These laws are good, provided they are well implemented. Mostly, Sierra Leoneans tell more than what they actually do" (Male, mobility impairment, Kenema)*

"*…the government should make every effort to enforce it. Monitoring system should be improved to ensure transparency or else the benefits*

would not reach us. The government should implement the Act to the fullest" (Male, visual impairment, Kenema)

4.1.5.2. Community support

Respondents also noted the lack of systems to support and promote the inclusion of people with disabilities at the community level. Many indicated they received no help from the community:

> "*People in the community] they are not supporting me. Apart from ordinary greetings, they don't have time because they are always busy with their farm work" (Female, visual impairment, Bonthe).*

The only community support described during the interviews was in the form of donations, mainly to cover the costs of health care:

> "*Well, first when we were going to the clinic, they [the community] contributed and gave to us – praise them - so that we could pay for transport. Since we returned, people come intermittently to offer me 100,000 or 200,000 Leones for medication" (Male, visual impairment, Kenema)*

Most participants said that their family was their primary source of support at the community level, as described by man with visual impairment from Kenema:

> *"With regards to medication, I can say thanks and appreciate what my family is doing for me (…) they provide food for me; make sure that I have water when I want to take a bath. They do make sure that I eat when the sun rises in the morning. The community is not doing anything to help me, same for the government. I have not seen anyone from the government to provide me help of any sort regarding my illness. I consider I am totally left out by the community, as I have begged several times for their help, and nothing happened. I am not too happy about the behaviour of the community and the government" (Male, visual impairment, Kenema)*

In some cases, the support provided to people with disabilities by their families was challenging, particularly, when the carers themselves were old and fragile, as one participant from Koinadugu described:

> "*My grandmother is taking good care of me since I became blind three years ago. She is doing everything for me, but she is getting old and she cannot continue to care for me. Presently, she is also not working, and she relies on handouts for her survival" (Male, visual impairment, Koinadugu)*

4.1.4.3. NGOs and Disabled People's Organisations

Several respondents referred to disability inclusion initiatives and projects supported by NGOs. However, participants' knowledge of these initiatives varied and there was a general lack of understanding of what exactly these organisations do. Only a few respondents said

they had directly benefited from these projects. Some vaguely remembered some interactions with NGOs and no follow up; some had no knowledge of NGOs or their projects:

> *"I do not know of such groups or organizations; you are the first person to talk to me about my disability" (Male, visual impairment, Koinadugu)*

> "*One time we were taken to M. where elderly and people with disabilities were asked to go to register. We went there to do the registration. Our names were recorded but since then, Amen, we have not heard from them. We spent money to go there and back to our homes" (Female, mobility impairment, Bonthe)*

A few respondents however pointed out to the work of DPOs and self-help groups (SHGs). Those, who were directly involved in these organisations and disability activist movements more broadly, had a positive view on the role of DPOs and said that they had a positive impact on their lives.

4.1.4.4. Expectations and recommendations expressed by people with disabilities

Disability was generally perceived as a personal condition that should be either cured or cared for through assistance from the government or charitable institutions. When asked about the type of support expected, study participants spoke primarily about financial aid, access to medical treatment and provision of basic necessities (food, housing, clothing):

> "*I want to be cured and drugs given to me. Also feeding is a concern. Let the government take care of us in these areas" (Female, visual impairment, Kenema)*

It also appeared from the interviews that sustainable livelihoods and financial independence were most critical, and many respondents indicated that they wanted to be trained in business management, get access to finance and start a small business. Most respondents believed that having an opportunity to work and earn money would help to change the public perception of people with disabilities; it was thought to be a good way to earn respect and be better accepted by the local communities:

> "*I am ready to do any work and earn a living together with my children. That would make me feel good, even if I am disabled (…) I would like the government to assist us, even if it is for doing business; so as to earn respect in society" (Male, mobility impairment, Kenema)*

Study participants also called for more support in accessing education and not only for themselves but also for their children; specifically, respondents wanted financial support to pay school fees and education materials:

> *"They need to let us be educated, so that we will contribute to the development of the nation…so that we will be able to earn money, because with money, you can do anything that you would like to do" (Male, mobility impairment, Koinadugu)*

> *"I did not go to school, but my children are going to school, therefore my appeal to the government is to help my children to continue with their education, because I am now disabled" (Female, mobility impairment, Bonthe)*

Finally, a number of respondents called for the government to further raise awareness about the Disability Act and ensure that the articles of this law were effectively implemented across the country:

> *"I am convinced that if the government implements most of the laws that are in the [Disability] Act, the situation of people with disability will improve (…) the implementation of the Act will empower people with disabilities to have a better life in the future" (Female, multiple impairments, Koinadugu)*

4. Conclusions

The study has identified a number of implications for both eye health and disability policies and programmes.

The findings suggest that most people in Sierra Leone are aware of blindness and common eye conditions. The knowledge of cataract is particularly strong; at least half of the population are also aware of river blindness and refractive errors, but very few know about glaucoma. Interestingly, river blindness is more commonly associated with skin problems than vision loss, possibly due to the effect of the long-standing prevention programmes and resultant drop in the prevalence of visual impairments caused by the disease.

Routine eye examinations however are not common in this population. People visit health care practitioners only when they experience deterioration in vision, infections, injuries or pain. Asymptomatic eye conditions are not viewed as priorities, not least because health care facilities are located far away and require financial resources to pay for transport and consultations.

The findings call for awareness raising campaigns, particularly around glaucoma and the benefits of routine eye examinations. The most effective channels of communication in these communities are likely to be radio and word of mouth. Radio programmes and community champions spreading messages about routine screening could be trialled in these settings. Similarly to other studies, awareness of eye conditions and a need for eye examinations was higher for individuals with formal education and from wealthier households. It is therefore important that awareness raising campaigns target specifically population sub-groups, which are least exposed to health information, i.e. those, who are illiterate and from the poorest households.

However, it is important not to underestimate the effect of user fees and long distances as barriers to the uptake of eye care services. It is, therefore, crucial to continue providing programmes, supported by iNGOs and other external donors, which provide outreach services to the poorest and more remote communities, and either fully or partially subsidise the costs of transportation and treatment. It is also important to raise awareness of the opportunities for receiving free eye care for eligible populations (pregnant and lactating women and children under the age of five) under the Free Health Care Initiative. It is also important to explore other options of moving at least some of the basic eye care services closer to the communities. Sierra Leone has recently piloted task shifting in eye care with the new role of ophthalmology community health officers. This strategy may not be able to address the problem of visual impairment caused by more complex eye conditions but may raise public awareness and promote routine screening practices.

Prevalence of disability, as measured by the Washington Group questions, was similar to the studies in other similar settings showing that at least 17% of the adult population in these communities experience significant functional limitations. Likewise, to other studies, our findings suggest that the majority of the general population in the studied districts have positive attitudes towards people with disabilities and support equal opportunities and social inclusion. However, it is well known that social attitudes expressed in such population-based studies are rarely indicative of the social behaviours, and our qualitative findings show that

the experiences of stigma and social neglect vary between and within the communities. Such experiences are also influenced by other individual characteristics of people with disabilities, including sex, age, social status and type of impairment. People with intellectual or mental health disabilities appear to be particularly at risk of social stigma and discrimination.

Our findings also show that there is limited knowledge of the Disability Act and organisations supporting people with disabilities in Sierra Leone; this knowledge is equally limited in the general public and among people with disabilities. We also found a significant gap between the formally articulated disability policies and their implementation in practice. It is therefore critical that future social inclusion programmes raise awareness of the disability legislation alongside effective accountability mechanisms, which monitor the implementation of the disability laws.

The study suggests that despite the progressive legal framework adopted by the Government of Sierra Leone, people with disabilities experience significant challenges in their day to day life, including poverty, limited access to education and employment opportunities and unaffordable health care services. There is no doubt that addressing these issues in the challenging context of Sierra Leone is an extremely difficult task. Future social inclusion programmes need to try to develop and test locally appropriate solutions, which can be delivered and sustained in the socio-economic and political realities of the country.

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Annexes

Annex 1: Sample size and sampling procedures for the household survey

Sample size

The following formula was used to determine the minimum number of participants, in each selected district in order to obtain reliable estimates for the key parameters:

$$n = D\,[(Z_\alpha + Z_\beta)^2 * (P_1(1-P_1) + P_2(1-P_2))/(P_2-P_1)^2]$$

- n = required minimum sample size per survey round or comparison group
- D = design effect (Default value = 2 is commonly used)
- P_1 = the estimated level of an indicator measured as a proportion at the time of the first survey or for the control area
- P_2 = the *expected* level of the indicator either at some future date or for the project area such that the quantity ($P_1 – P_2$) is the size of the magnitude of change it is desired to be able to detect
- Z_α = the Z-score corresponding to the degree of confidence with which it is desired to be able to conclude that an observed change of size (P_2-P_1) would not have occurred by chance (α – the level of statistical significance)
- Z_β = the Z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size (P_2-P_1) if one actually occurred (β – statistical power)

The formula is adequate to calculate the sample size requirement to be able to detect the level of changes/differences in a selected indicator (expressed as proportions) e.g. the proportion of respondents who have heard about a specific eye condition. Sample sizes obtained for each round or each comparison group e.g. baseline and endline surveys.

A total sample size of 1,030 individuals was obtained using this formula with 95% confidence interval and 90% statistical power. However, the sample size was increased for non-response leading to a final sample size of 1,100 (see calculation below).

2	D	Design effect (default value = 2 is commonly used)
0.5	P1	Estimated level of the indicator of interest at baseline (default value of 0.5 will ensure an adequate sample size irrelevant of what the actual value of P1 is)
0.6	P2	The expected level of the indicator in at endline (P2 -P1 = magnitude of change we would like to measure before/after intervention, 10% increase in this case)
1.96	Zα	Z-score for a chosen level significance level (95% is sufficient to ensure that changes observed do not occur by chance)

2	D	Design effect (default value = 2 is commonly used)
1.282	Zβ	Z-score for a chosen level of power, it ensures that a program is not judged a failure when in fact it had positive results (value of 90% was used in this case)
1030	N	Minimum sample size required per survey round
1100	n (adj.)	Minimum sample size required per survey round (adjusted for non-response, <10% non-response rate in this case)

Sampling method

The survey will follow a three-stage cluster sampling methodology, with the primary cluster, the district; the secondary cluster, the enumeration area (EA); and third cluster being the household. The method for selecting sampling units at each stage is as follows:

1. **Selection of districts**: Four districts randomly selected from a list of 14 districts in Sierra Leone. Small and large districts having the same chance of being selected
2. **Selection of Enumeration Areas**: We decided to select 100 EAs in total for this study. The number of EAs drawn in each district is proportional to the population of the district (based on projections from the 2004 census). All EAs have about the same population size. This ensures that we end up with large district contributing more to the overall sampling (weighting). We used the list of all EAs for each of the selected districts as a sample frame for drawing the EAs to be surveyed (all necessary data have been provided by the Statistics Sierra Leone).
3. **Selection of Households:** 11 households are selected in each EA using a random walk method as described in the guidelines for selecting households below.

Annex 2: Operational overview of the survey

Team Composition

Technical Team - The technical team comprised of a Principal Investigator from Dalan Consultants and Four Co Investigators (Dalan -1, Sightsavers- 2 and Ministry of Health -1). Using a consultative process, the technical team, took responsibility to finalize sampling strategies, study instruments, train the field team and will also provide leadership for data management and to prepare the report.

Supervisors and Enumerators - Eighteen enumerators were trained and deployed to undertake the survey, in the four districts, including four supervisors, and four enumerators from the Ministry of Health and Sanitation (MoHS). Supervisors and enumerators were organized into district teams so as to reduce the burden of inter-district travel. District teams were of varied sizes depending on the anticipated workload. Team sizes ranged from two (Bonthe) to Eight (the Western Area). Each team had one MoHS representative.

Training & Pretesting - To enhance the field team's competency, Dalan divided the training into two components: i) Supervisors' Brief and ii) General Enumerators' Training

Supervisors' brief

The four supervisors were given a day's brief ahead of the general training to familiarise themselves with the survey instruments and procedures. The purpose of the brief was to make sure that supervisors were adequately equipped to lead practice session during the training and to provide the required leadership in the field.

General Enumerators' training

A combined Dalan/Sightsavers team trained the enumerators and supervisors in a general training for four days, guided by a structured training schedule. This training covered general background about Sightsavers work in Sierra Leone, purpose, objectives and methodology of the study. Substantial time was allocated to allow for group practice sessions, to improve understanding of the content of the tools and application. During the practice sessions, teams were divided into district groupings to take into account linguistic considerations. The training went through the ethics and codes of conduct of research to prepare the teams to conduct themselves professionally while in the field and discussed roles and responsibilities of enumerators and their supervisors. A training manual was developed as a reference guide for enumerators. The guide provides content on all sessions covered during the training. The manual also details expectations of the enumerators and supervisors and their general work plan.

Piloting/Pretesting

The survey instruments were piloted as part of the enumerator training process. The pilot testing exercise was done on Day Three of the training after making sure that team members were fully conversant with the instruments following two days of In-house training. The instruments were tested at two sites in the Western Rural area (Regent and Goderich communities). Western Rural Area was appropriate for pilot testing because the actual survey was planned to be in Western Urban Area. As part of the community entry approach, a written communiqué was provided for the attention of community leaders including women and youth leaders. The content was to alert community stakeholders about the purpose for the exercise and to seek permission to gather data in their respective communities. Oversight was provided by Dalan and Sightsavers representative for the field team members

assigned to work in the Goderich and Regent settlements respectively. The instruments were modified based on the feedback received from the field team and from observations noted by the technical team.

Field Work

Fieldwork lasted for 16 days from December 6th to December 21st, 2013. The fieldwork was supervised, and the feedback was provided to the teams on a daily basis.

Annex 3: Associations between respondent characteristics and knowledge level and practices in eye health

Univariate logistic analysis (dep. var = knowledge/practices in eye health; explan. var = respondent characteristics)

Crude OR (p-value) [β]	Awareness of FHCI	Awareness of cataract	Awareness of onchocerciasis	Awareness of glaucoma	Awareness of RE	Exposure to eye health message	Eye examination	Use of optical device
Age [α]	**0.392**	**0.061***	**0.002*****	**0.015****	**0.036****	**0.000*****	**0.000*****	**0.000*****
15-24	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
25-34	-	1.58* (0.084)	1.28 (0.229)	1.31 (0.580)	0.92 (0695)	1.94*** (0.001)	1.20 (0.499)	1.97 (0.332)
35-44	-	1.95** (0.026)	1.46* (0.086)	0.96 (0.946)	1.12 (0.595)	1.79*** (0.008)	1.17 (0.585)	5.54*** (0.008)
45-55	-	2.35** (0.013)	2.42*** (0.000)	2.44* (0.073)	1.65** (0.035)	2.56*** (0.000)	2.28*** (0.004)	15.3*** (0.000)
55 +	-	1.91* (0.093)	2.11*** (0.007)	4.14*** (0.005)	1.72* (0.055)	2.56*** (0.001)	4.64*** (0.000)	21.74*** (0.000)
Sex [α]	**0.43**	**0.23**	**0.164**	**0.077****	**0.894**	**0.810**	**0.348**	**0.72**
Female	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Male	-	1.22 (0.232)	1.18 (0.164)	1.64 ** (0.078)	0.98 (0.895)	-	-	
Wealth Quintile [α]	**0.000*****	**0.000*****	**0.001*****	**0.151**	**0.004*****	**0.000*****	**0.000*****	**0.000*****
Q1 (poorest)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.

Crude OR (p-value) [β]	Awareness of FHCI	Awareness of cataract	Awareness of onchocerciasis	Awareness of glaucoma	Awareness of RE	Exposure to eye health message	Eye examination	Use of optical device
Q2	2.18*** (0.001)	1.92** (0.028)	1.39* (0.094)	-	1.21 (0.322)	1.07 (0.733)	1.62 (0.117)	4.06** (0.014)
Q3 (middle)	3.67*** (0.000)	1.90** (0.028)	1.01 (0.963)	-	1.22 (0.301)	1.78*** (0.003)	3.69*** (0.000)	5.3*** (0.003)
Q4	9.60*** (0.000)	0.98 (0.95)	1.33 (0.155)	-	1.42* (0.076)	3.98*** (0.000)	2.25*** (0.006)	4.06** (0.015)
Q5 (richest)	6.14*** (0.000)	0.63* (0.059)	0.67** (0.038)	-	0.72* (0.087)	2.67*** (0.000)	3.43*** (0.000)	7.61*** (0.000)
District [α]	**0.000*** **	**0.000*** **	**0.000*** **	**0.012** **	**0.151**	**0.000*** **	**0.011** **	**0.193**
Western Area	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Bonthe	0.51* (0.069)	6.93*** (0.001)	4.87*** (0.000)	0.54 (0.413)	-	0.38*** (0.000)	0.85 (0.597)	
Kenema	0.65* (0.095)	6.33*** (0.000)	1.15 (0.332)	2.09** (0.011)	-	0.48*** (0.000)	0.82 (0.265)	
Koinadugu	0.12*** (0.000)	0.68 * (0.053)	1.56** (0.012)	1 (omitted) [λ]	-	0.61*** (0.006)	0.44 (0.002)	
Education [α]	**0.000*** **	**0.119**	**0.0041*** **	**0.000*** **	**0.896**	**0.000*** **	**0.000*** **	**0.000*** **
No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Yes	7.14*** (0.000)	1.31 (0.118)	1.43*** (0.004)	4.39*** (0.000)	-	2.53*** (0.000)	2.03*** (0.000)	5.77*** (0.000)

Crude OR (p-value) β	Awareness of FHCI	Awareness of cataract	Awareness of onchocerciasis	Awareness of glaucoma	Awareness of RE	Exposure to eye health message	Eye examination	Use of optical device
Visual Acuity α	**0.362**	**0.026****	**0.002*****	**0.002*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****
Very Good	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Good	-	0.97 (0.906)	0.96 (0.768)	1.62 (0.172)	0.68*** (0.005)	1.39** (0.016)	3.12 *** (0.000)	3.61*** (0.002)
Fair	-	2.24** (0.016)	1.99 *** (0.001)	2.35** (0.046)	1.3 (0.185)	1.93*** (0.001)	10.76*** (0.000)	18.4*** (0.000)
Poor	-	2.25 (0.185)	1.37 (0.356)	7.63*** (0.000)	2.18** (0.040)	2.34** (0.020)	19.06*** (0.000)	44.78*** (0.000)
Occupation α	**0.000*****	**0.288**	**0.005*****	**0.064***	**0.896**	**0.000*****	**0.009*****	**0.000*****
Agriculture	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Non-manual worker	5.22 *** (0.001)	-	1.15 (0.533)	2.20* (0.095)	-	4.25*** (0.000)	2.71*** (0.000)	5.08*** (0.000)
Manual worker	2.51** (0.029)	-	0.99 (0.991)	0.73 (0.687)	-	2.72*** (0.000)	1.46 (0.263)	0.67 (0.535)
Petty trader	2.40*** (0.003)	-	0.51*** (0.001)	0.59 (0.374)	-	1.88*** (0.001)	1.34 (0.258)	0.65 (0.349)
Others	2.64 (0.118)	-	0.93* (0.074)	3.63** (0.035)	-	1.88 (0.102)	1.74 (0.230)	1.67 (0.431)

α: p-value for LR test (chi-2); Ho: non-association i.e. OR when considering all categories simultaneously = 1

β: p-value for Wald test for each parameter; Ho: non-significant i.e. true OR for parameter is 1

λ: variable category omitted since OR = 1 (exact match)

Multivariate logistic regressions (with explanatory variable identified through univariate analysis)

Including all significant/relevant factors for all outcomes of interest with the exception of age & occupation (because of the high number of missing observations for these variables). OR for Age & occupation were computed separately by introducing the variable in the selected model.

Adjusted OR (p-value) [β]	Awareness of FHCI (n=1056)	Awareness of cataract *(n= 1051)*	Awareness of onchocerciasis (n=1054)	Awareness of glaucoma (n=891)	Awareness of RE (n=1064)	Exposure to eye health message (n=1063)	Eye examination (n=1070)	Use of optical device (n=1067)
Sex								
Female	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Male	0.96 (0.856)	1.21 (0.296)	1.06 (0.655)	1.61 (0.121)	0.95 (0.664)	0.96 (0.751)	1.15 (0.421)	0.88 (0.624)
Wealth Quintile								
Q1 (poorest)	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Q2	-	1.1 (0.784)	1.64** (0.025)	-	1.24 (0.277)	1.21 (0.387)	1.77* (0.091)	4.08** (0.022)
Q3 (middle)	-	1.26 (0.553)	1.30 (0.269)	-	1.25 (0.249)	2.02*** (0.003)	4.11*** (0.000)	4.10** (0.018)
Q4	-	0.89 (0.804)	2.24*** (0.006)	-	1.52** (0.040)	5.07*** (0.000)	2.61*** (0.006)	2.47* (0.166)
Q5 (richest)	-	0.60	1.10	-	0.78	2.98***	3.54***	4.94***

		(0.241)	(0.746)		(0.200)	(0.000)	(0.000)	(0.007)
District								
Western Area	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Bonthe	1.10 (0.803)	4.92** (0.017)	8.48*** (0.000)	122 (0.802)	-	1.21 (0.546)	-	-
Kenema	1.10 (0.721)	4.58*** (0.000)	1.38 (0.134)	3.58*** (0.000)	-	1.06 (0.789)	-	-
Koinadugu	0.24*** (0.000)	0.50 (0.074)	2.73*** (0.000)	1 (omitted) [λ]	-	2.36*** (0.002)	-	-
Education								
No	*Ref.*		*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Yes	5.58*** (0.000)	-	1.96*** (0.000)	4.03*** (0.001)	-	1.98*** (0.000)	1.43* (0.073)	4.18*** (0.000)
Poor Visual Acuity								
Very Good	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Good	-	0.96 (0.849)	1.11 (0.469)	1.38 (0.381)	0.70* (0.010)	1.39** (0.026)	3.03*** (0.000)	3.44*** (0.002)
Fair	-	1.76 (0.107)	2.21*** (0.000)	1.51 (0.360)	1.34 (0.147)	2.34*** (0.000)	11.63*** (0.000)	19.19*** (0.000)
Poor	-	2.68 (0.114)	1.63 (0.167)	7.42*** (0.000)	2.31** (0.029)	2.27** (0.035)	20.85*** (0.000)	47.03*** (0.000)

Correctly classified	**86.0%**	**82.0%**	**56.4%**	**94.5%**	**47.5%**	**56.3%**	**81.59%**	**92.7%**
Goodness of fit δ	**0.800**	**0.617**	**0.627**	**0.948**	**0.410**	**0.638**	**0.672**	**0.696**
Pseudo R2	**0.183**	**0.108**	**0.067**	**0.107**	**0.022**	**0.083**	**0.178**	**0.266**

β: p-value for Wald test for each parameter; Ho: non-significant

i.e. true OR for parameter is 1

δ: p-value for Hosmer-Lemeshow test for goodness of fit: Ho: good adjustment (observed number = predicted number)

λ: variable category omitted since OR = 1 (exact match)

Adjusted OR (p-value) β	Awareness of FHCI	Awareness of cataract	Awareness of onchocerciasis	Awareness of glaucoma	Awareness of RE	Exposure to eye health message	Eye examination	Use of optical device
Age		**n=736**	**n=743**	**n=655**	**n=746**	**n=752**	**n=752**	**n=750**
15-24	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
25-34	-	1.70* (0.057)	1.34 (0.178)	1.48 (0.446)	0.96 (0.827)	1.99*** (0.002)	1.14 (0.660)	2.13 (0.293)
35-44	-	2.13** (0.018)	1.80** (0.016)	0.79 (0.704)	1.23 (0.376)	1.94*** (0.005)	0.91 (0.779)	4.30** (0.034)
45-55	-	2.04* (0.056)	2.63*** (0.000)	1.55 (0.438)	1.74** (0.033)	2.56*** (0.000)	1.23 (0.522)	9.38*** (0.001)
55 +	-	1.23 (0.630)	2.33*** (0.008)	2.33 (0.153)	1.64 (0.112)	3.23*** (0.000)	2.31** (0.020)	13.77*** (0.000)
Occupation	**n=658**		**n=654**	**n=518**	**n=659**	**n=659**	**n=663**	**n=660**
Agriculture	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Non-manual worker	1.38 (0.572)	-	1.34 (0.371)	2.07 (0.216)	-	1.83* (0.067)	1.06 (0.888)	1.75 (0.312)
Manual worker	1.07 (0.881)	-	1.13 (0.718)	0.71 (0.672)	-	1.46 (0.250)	0.81 (0.633)	0.27* (0.085)
Petty trader	1.51	-	0.67	0.89	-	1.41	0.81	0.35*

Adjusted OR (p-value) β	Awareness of FHCI	Awareness of cataract	Awareness of onchocerciasis	Awareness of glaucoma	Awareness of RE	Exposure to eye health message	Eye examination	Use of optical device
	(0.253)		(0.138)	(0.859)		(0.210)	(0.565)	(0.088)
Others	1.30 (0.695)	-	1.02 (0.968)	2.54 (0.198)	-	1.44 (0.424)	0.84 (0.761)	0.17 (0.143)

β: p-value for Wald test for each parameter; Ho: non-significant i.e. true OR for parameter is 1

Annex 4: Associations between respondent characteristics and knowledge level and attitudes towards disability and people with disabilities

Univariate logistic analysis (dep. var = knowledge/attitude towards disability & persons with disability; explan. var = respondent characteristics)

Crude OR (p-value) β	Awareness of Disability Act	Awareness of DPO	Remain secret if family member with disability	Caring for Family member with disability	Sending children with disability to school	*Employ persons with disability*
Age $^{\alpha}$	**0.037****	**0.595**	**0.730**	**0.515**	**0.703**	**0.154**
15-24	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
25-34	0.99 (0.981)	-	-	-	-	-
35-44	1.48 (0.101)	-	-	-	-	-
45-55	1.50 (0.113)	-	-	-	-	-
55 +	2.07** (0.013)	-	-	-	-	-
Gender $^{\alpha}$	**0.650**	**0.173**	**0.625**	**0.104**	**0.463**	**0.051****
Female	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.

Male	-	-	-	-	-	1.37* (0.053)
Wealth Quintile $^{\alpha}$	**0.000*** **	**0.000*** **	**0.000*** **	**0.000*** **	**0.030** **	**0.003*** **
Q1 (poorest)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Q2	1.27 (0.342)	1.18 (0.569)	0.84 (0.779)	3.35** (0.011)	1.09 (0.764)	0.87 (0.567)
Q3 (middle)	1.53* (0.082)	2.25*** (0.002)	1.92 (0.208)	7.34*** (0.001)	1.95** (0.037)	1.40 (0.181)
Q4	1.75** (0.023)	4.36*** (0.000)	2.79** (0.040)	20.90*** (0.003)	2.52*** (0.009)	1.29 (0.311)
Q5 (richest)	4.40*** (0.000)	6.17*** (0.000)	4.52*** (0.001)	12.60*** (0.001)	1.34 (0.294)	2.23*** (0.002)
District $^{\alpha}$	**0.000*** **	**0.000*** **	**0.004*** **	**0.000*** **	**0.001*** **	**0.004*** **
Western Area	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Bonthe	0.43*** (0.005)	0.51** (0.013)	0.13** (0.045)	1 (omitted) $^{\lambda}$	0.32*** (0.001)	1.17 (0.672)
Kenema	0.50*** (0.000)	0.15*** (0.000)	0.46** (0.019)	0.39 (0.158)	0.52*** (0.005)	0.54*** (0.001)
Koinadugu	0.49*** (0.001)	0.32*** (0.000)	0.43** (0.046)	0.54*** (0.000)	1.03 (0.920)	0.87 (0.574)
Education $^{\alpha}$					**0.215**	
No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.

Yes	2.56*** (0.000)	3.95*** (0.000)	1.86** (0.038)	1.85* (0.088)	-	1.36* (0.059)
Visual Acuity $^{\alpha}$	**0.026****	**0.281**	**0.701**	**0.088***	**0.160**	**0.097***
Very Good	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Good	0.90 (0.516)	-	-	1.75 (0.248)	-	0.83 (0.310)
Fair	1.07 (0.749)	-	-	0.54 (0.188)	-	0.55** (0.011)
Poor	2.83*** (0.005)	-	-	0.35 (0.111)	-	0.95 (0.910)
Occupation $^{\alpha}$	**0.000*****	**0.000*****	**0.112**	**0.004*****	**0.038****	**0.034****
Agriculture	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Non-manual worker	3.64 *** (0.000)	7.35*** (0.000)	-	6.14* (0.079)	2.20* (0.064)	2.85*** (0.004)
Manual worker	2.26*** (0.005)	3.05*** (0.000)	-	2.09 (0.330)	3.42** (0.045)	1.45 (0.306)
Petty trader	0.93 (0.772)	1.77** (0.020)	-	10.74** (0.021)	1.83* (0.054)	1.29 (0.306)
Others	1.57 (0.291)	2.70** (0.024)	-	1 (omitted) $^{\lambda}$	2.29 (0.270)	1.74 (0.330)
HH disability history $^{\alpha}$	**0.08***	**0.002*****	**0.635**	**0.152**	**0.754**	**0.057***

No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Yes	1.28* (0.079)	1.53*** (0.002)	-	-	-	1.38* (0.060)
# impairment reported per HH $^{\alpha}$	**0.181**	1.27*** (0.004)	**0.242**	**0.127**	**0.284**	**0.159**

α: p-value for LR test (chi-2); Ho: non-association i.e. OR when considering all categories simultaneously = 1

β: p-value for Wald test for each parameter; Ho: non-significant i.e. true OR for parameter is 1

λ: variable category omitted since OR = 1 (exact match)

Multivariate logistic regressions (with explanatory variable identified through univariate analysis)

Including all significant/relevant factors for all outcomes of interest with the exception of age & occupation (because of the high number of missing observations for these variables). OR for age & occupation were computed separately by introducing the variable in the selected model.

Adjusted OR (p-value) [β]	Awareness of Disability Act (n=997)	Awareness of DPO (n=1001)	Remain secret if family member with disability (n=1006)	Caring for Family member with disability (n=977)	Sending children with disability to school (n=1022)	Employ persons with disability (n=923)
Gender [α]						
Female	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Male	1.18 (0.269)	1.38** (0.035)	0.98 (0.930)	0.67 (0.292)	0.89 (0.575)	1.43** (0.035)
Wealth Quintile						
Q1 (poorest)	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Q2	1.17 (0.537)	1.32 (0.375)	0.84 (0.777)	3.55** (0.010)	1.30 (0.383)	1.06 (0.811)
Q3 (middle)	1.26 (0.374)	1.96** (0.037)	1.88 (0.237)	8.44*** (0.001)	2.06** (0.040)	1.94** (0.025)
Q4	1.24 (0.430)	2.45** (0.016)	2.74** (0.058)	22.07*** (0.003)	1.99 (0.136)	1.67 (0.155)
Q5 (richest)	3.22*** (0.000)	3.47*** (0.001)	4.37*** (0.004)	14.38*** (0.001)	0.97 (0.963)	3.34*** (0.002)
District						
Western Area	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Bonthe	-	1.51 (0.244)	-	-	0.33** (0.014)	2.24* (0.070)
Kenema	-	0.31*** (0.000)	-	-	0.51** (0.064)	1.09 (0.731)
Koinadugu	-	1.16 (0.668)	-	-	1.23 (0.653)	2.02** (0.048)
Education						

No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Yes	1.88*** (0.000)	2.76*** (0.000)	1.04 (0.899)	0.70 (0.389)	-	1.16 (0.433)
Poor Visual Acuity						
Very Good	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Good	0.79 (0.160)	-	-	1.43 (0.470)	-	0.81 (0.276)
Fair	0.96 (0.862)	-	-	0.54 (0.200)	-	0.47*** (0.003)
Poor	2.51** (0.018)	-	-	0.32* (0.098)	-	0.86 (0.733)
Household disability history						
No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Yes	1.21 (0.214)	1.50*** (0.009)	-	-	-	1.58** (0.012)
Correctly classified	**71.5%**	**70.1%**	**93.9%**	**96.6%**	**88.7%**	**75.1%**
Goodness of fit δ	**0.336**	**0.143**	**0.644**	**0.316**	**0.758**	**0.857**
Pseudo R2	**0.069**	**0.145**	**0.046**	**0.145**	**0.037**	**0.044**

β: p-value for Wald test for each parameter; Ho: non-significant i.e. true OR for parameter is 1

δ: p-value for Hosmer-Lemeshow test for goodness of fit: Ho: good adjustment (observed number = predicted number)

λ: variable category omitted since OR = 1 (exact match)

Adjusted OR (p-value) β	Awareness of Disability Act	Awareness of DPO	Remain secret if family member with disability	Caring for Family member with disability	Sending children with disability to school	Employ persons with disability
Age	**n=706**					
15-24	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
25-34	1.03 (0.905)	-	-	-	-	-
35-44	1.49 (0.125)	-	-	-	-	-
45-55	1.62 (0.095)	-	-	-	-	-
55 +	2.20** (0.019)	-	-	-	-	-
Occupation	**n=620**	**n=616**		**n=511**	**n=636**	**n=566**
Agriculture	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Non-manual worker	1.41 (0.317)	1.77 (0.133)	-	2.33 (0.491)	2.84* (0.067)	2.10* (0.099)
Manual worker	1.06 (0.867)	0.86 (0.733)	-	0.46 (0.387)	3.77* (0.058)	1.24 (0.629)
Petty trader	0.52 (0.037)	0.54* (0.094)	-	2.86 (0.337)	1.93 (0.151)	1.17 (0.644)
Others	0.80 (0.659)	1.14 (0.815)	-	1 (omitted) λ	2.39 (0.279)	1.73 (0.379)

β: p-value for Wald test for each parameter; Ho: non-significant i.e. true OR for parameter is 1

δ: p-value for Hosmer-Lemeshow test for goodness of fit: Ho: good adjustment (observed number = predicted number)

λ: variable category omitted since OR = 1 (exact match)

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