KNOWLEDGE, ATTITUDES AND PRACTICE (KAP) SURVEY - 2010

TAKEO PROVINCE, CAMBODIA

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Final Report

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Centre for Eye Research Australia

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TAKEO EYE HOSPITAL
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ACKNOWLEDGEMENTS

The Knowledge Attitude and Practice (KAP) was a CBM Cambodia/Australia project, conducted with Takeo Eye Hospital in Takeo Province, Cambodia. CERA was commissioned through CBM Australia to conduct the KAP. This was a newly designed survey to target three groups of participants - older people, parents of children and people with disabilities.

This report was prepared by Ms Anna-Lena Arnold and Ms Gail Ormsby in consultation with Professor Jill Keeffe and Dr Manfred Mörchen.

Statistical technical advice was provided by Dr Lucy Busija.

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SUMMARY

METHOD

A cross-sectional population-based survey using a semi-structured questionnaire for knowledge, attitudes and practices associated with eye disease, was conducted in Takeo Province. An expected total of 600 people were surveyed from 30 randomly selected villages from across three districts.

KNOWLEDGE OF EYE DISEASES

Most participants reported having heard of eye problems such as eye injury/foreign body, pterygium, red eye, cross-eyed, trichiasis and cataract. Fewer participants reported having heard of refraction related problems, trachoma, corneal ulcer, age-related macular degeneration (AMD), glaucoma and diabetic eye disease. Knowledge of eye diseases differed between the participant groups with the 30-49 year age group and parents group having a higher level of knowledge about eye diseases in comparison to the ≥50 year age group.

Most participants did not know the cause of trachoma despite many having heard of trichiasis. There may have been confusion about translation. However, a higher proportion of the older group had heard of trachoma compared to the other age groups - this could be an indicator of trachoma having once been more of a problem in the past for the older generation than it is now for the younger generations.

Regression analysis was used to control for confounders of disability, age, and education. It was found that older age and limited education were the main predictors of knowledge and not disability.

Many participants (47%) reported not knowing how someone can become blind and only two-thirds of participants believed blindness can be prevented. Fewer participants from the 50+ year group believed blindness can be prevented when compared to the other participant groups, and fewer participants with a disability believed that blindness can be prevented when compared to those without a disability.

Nearly half (49%) of participants reported not knowing the best treatment for cataract. Twelve percent believed traditional medicine to be the best treatment for cataract, and 9% stated that steam of boiling rice is the best treatment for cataract. A higher proportion of participants from Donkeo district (25%) believed traditional medicine to be the best treatment for cataract compared to 3.1% from Bati district and 1.5% from Kirivong district.

The main source of eye information for participants was relatives/family members.

ATTITUDES

Forty-three percent of participants reported that a child with vision impairment cannot go to school. A lower proportion of participants from the 50+ year age group believed a child with vision impairment could go to school compared to the other participant groups, and a lower proportion of participants with a disability believed a child with vision impairment could go to school compared to participants without a disability.

The most trusted source for eye information was health centre staff. This was followed by the radio.

PRACTICE

Nearly two thirds (62%) of participants reported having had an eye problem. A higher proportion of males (68.7%) reported having had a problem than women (58.4%). This could be as a result of a higher proportion of males reporting having a trauma related disability. A higher proportion of participants from Donkeo district (72%) reported eye problems compared to Bati (59%) and Kirivong (56%). The most commonly reported eye problems were red eye and refractive errors.

Of those with eye problems only 23% reported having had an eye examination for their eye problems. A higher proportion of women sought care for their eye problems compared to males. A higher proportion of parents sought care for their children's eye problems compared to the other participants groups and a higher proportion of participants from Donkeo sought care for their eye problems compared to the other districts. Of those who had an eye examination for their eye problem, 41% of participants sought care from health centre staff and 37% sought care from Takeo Eye Hospital.

Of those who have had their health checked (n=412), 70% (290/412) have never had their eyes checked. The results suggest that participants understand the importance of having their health checked but not of having their eyes checked.

Parents reported health centre staff could provide the best treatment for their children followed by Takeo Eye Hospital.

Twelve percent of participants reported traditional medicine to be the best treatment for cataract and interestingly 9% of participants specifically reported steam from boiling rice to be the best treatment for cataract. A much higher proportion of participants from Donkeo district reported traditional medicine as the best treatment for cataract with a much lower proportion reporting surgery as the best treatment.

Nineteen percent of participants reported wearing glasses, and two thirds of the glasses worn were self-selected from the market. Sixty-eight percent of those reported their vision improved when wearing glasses.

Using clean water, *regular hand washing* and *not sharing face clothes* were the most common preventive methods reported by participants to prevent red eye. This illustrates that previous trachoma campaigns have been effective in changing knowledge.

ACCESSIBILITY AND AFFORDABILITY

Two thirds of participants reported not being able to travel to the eye institute alone. This was more of a problem for people aged ≥ 50 years, for participants with a disability and for females.

Nearly two thirds (63%) of participants found the cost of transportation to the eye institute not expensive. However this was different for the 50+ year age group, with 10% reporting that transportation was too expensive and beyond what they could afford and 42% reporting transportation to be expensive but affordable.

Seventy percent of all participants reported the examination fee as not expensive; however 63% of participants reported not knowing the cost of the examination fee at Takeo Eye Hospital. Seventy percent of participants found glasses not expensive (from the market).

RECOMMENDATIONS

Given that the prevalence of eye diseases throughout the world remains a concern and the majority of these are avoidable or curable, gaining an understanding of the community's knowledge, attitude and practices related to avoidable eye disease and conditions is important (WHO 2010).

1. Implement an educational campaign to increase the awareness of people about the nature of eye diseases and the importance of early detection and treatment.
2. Promote focused messages to increase awareness of common eye diseases, eg. cataract, corneal ulcer, trachoma, glaucoma, diabetic eye disease.
3. Promote messages throughout the community using culturally appropriate media including: radio, public forums, clubs and watts, disability people's organisations, schools, health centre staff, village volunteers. Remember not everyone is literate.
4. Promote awareness around the community of the cost of the examination fees.
5. Promote simple messages so that people find it easier to learn about and remember eye health information.
    - If you have an eye infection or an eye injury, consult health workers immediately.
    - If there's a change in your vision, consult health workers immediately.
    - If eye problems are detected in infants or children consult health workers immediately.

- Children who are blind or have low vision should go to school.
- Most blindness can be prevented and treated, but early diagnosis and treatment is essential.

BACKGROUND

Avoidable blindness remains a major cause of morbidity in developing countries despite the efforts to control it, and it's estimated that worldwide 39.8 million people are blind and 285 million are vision impaired with 90% of blind people living in developing countries (1). To aid in the elimination of visual impairment, timely and appropriate treatment is essential.

A Rapid Assessment for Avoidable Blindness (RAAB) was conducted across Cambodia during 2007. The total sample was 6,000 people ≥ 50 years. Key results are:

- The prevalence of blindness (best corrected BCVA <3/60 in better eye) was 2.81% (CI 95%; 2.3-3.3%), which calculates out to be 43,800 people. The prevalence in males (2.0%) was significantly lower than in females (3.4%).
- Assuming that 20% of all blindness occurs in people younger than 50 years, the prevalence of blindness in the total population can be estimated at 0.38%.
- Cataract is the most common cause of bilateral blindness (74%), followed by corneal scars (8.0%) and glaucoma (3.1%), other posterior segment diseases (4.9%), and refractive errors (2.7).
- 90.2% of all blindness is considered to be avoidable: 79.1% is curable and 11.1% is preventable.
- Severe vision impairment (presenting VA <6/60 - 3/60 in the better eye) - cataract remains the main cause (74%), followed by uncorrected errors (16.9%).
- Vision impairment (presenting VA <6/18 - 6/60 in the better eye) refractive errors are the main cause (52.8%), followed by cataract (43.0%).

A RAAB is planned to be conducted in Takeo Province in early 2012.

To better understand the community's knowledge, attitudes, and practices (KAP) regarding eye health and barriers to services and behaviours to health care, CBM Australia/Takeo Eye Hospital conducted a population based KAP survey across Donkeo, Bati and Kirivong districts of Takeo Province, Cambodia in 2010. The findings will be used to refine health promotion messages.

Knowledge

Knowledge as possessed by individuals refers to their understanding of a topic.

Example:

- People's knowledge about eye disease and its prevention.
- A teacher's knowledge about the use of low vision devices to assist students with low vision.

Attitude

Attitude refers to peoples' feelings, as well as any preconceived ideas they may have.

Example:

- Attitudes about the use of traditional medicine and eye care.

Practice

Practice refers to the ways in which people demonstrate attitudes and practices; that is, use of eye-care services.

Example:

- Where mothers commonly take their children with eye injury for treatment.
- Practices used to treat specific eye diseases.

METHODOLOGY

The sample population was sampled across three age groups:

1. ≥50 years
2. 30-49 years
3. Parents with children aged ≥ 5 years

The ≥50 year age group was selected because this is where vision loss is most prevalent. The 30-49 year age group was selected to obtain an understanding of behaviour towards eye care from a younger age group's perspective. Economically this younger age group is the most important, since having a disability could mean not being able to contribute to the family livelihood which could have a deleterious effect on the whole family. This age-group is mainly affected by work-related injuries and uncorrected refractive error. While the prevalence of blindness is not high in children aged ≥ 5 years, every child suffering from blindness has it their whole life. Further, there is also evidence to suggest that life-expectancy of blind children <5 years is very low (2), therefore it is important to establish an understanding about whether parents with young children know to seek early treatment for eye problems. Data were collected from the community using a questionnaire.

INTERVIEWERS

A team of 9 Interviewers were trained for four days. They were health care workers (2 from each district) selected for the selected districts- three staff from Takeo Eye Hospital (2 eye nurses from Takeo Eye Hospital, and 1 supervisor from Takeo Eye Hospital), 2 health workers from Dunkeo Operational District, 2 health workers from Bati Operational District, 2 health workers from Kirivong Operation District. There were 3 teams, with each team visiting a village per day to interview 20 participants. Each team had a supervisor who collected all surveys and checked them at the end of the day.

SAMPLING

An expected sample of 600 was planned (200 per district), and a total of 599 people were surveyed from 30 randomly selected villages from across 3 districts in Takeo province to give a sample of 200 people per district, to gain a spread of villages across the whole 3 districts, 10 villages were selected from each of the districts. From these villages 20 people in each were surveyed. This meant 6 or 7 people from each age group were sampled from each village. It was important to include people with disabilities. To find 1 or 2 people with a disability within each village, convenience sampling was used which meant asking the village leaders where people in the sample with disabilities lived. Subsequently the number of people with a reported disability is high but does not reflect the prevalence of disability. For this survey, a disability was defined in the questionnaire as someone having either a difficulty with: seeing, hearing, walking, or understanding, as participants report according

to their own subjective assessment. The villages were randomly selected from each district, not proportional to size, so that a selection of small, medium and large sized villages could be obtained.

For each village the interviewers selected a random landmark to start from, and called in at consecutive houses until the required number of participants from each age group was obtained.

QUESTIONNAIRE

Data were collected from participants using a structured questionnaire. The questionnaire was translated into Khmer and administered by trained interviewers. The questionnaire collected information on: demographics, knowledge of common eye diseases, practice and prevention of eye problems, knowledge and practice on prevention and treatment of children's eye diseases, accessibility and affordability of eye care services, attitudes of the interviewee to eye diseases and people with disabilities.

THE SAMPLE POPULATION

RESPONDENTS

A total of 599 participants out of an expected total 600 participants were interviewed. The mean age for the respondents from the ≥50 years age group was 63, for the 30-49 year age group was 41 years, and the parents group was 31 years. There was an even distribution of males and females across the groups with the exception of the parent's group, of which the majority of the group was female (Table 1).

The intended design of the survey was to select 200 people from each district. Thirty-four percent (n=201) of the participants were from Donkeo district, 33% from Bati district (n=198) and 33% (n=200) from Kirivong district. All participants were of Khmer origin; however 3% (20/599) reported to be of Islamic religion. Overall, most of the participants were from rural areas (*Table 1*). This did differ slightly between the districts with a higher proportion of the participants (13.6%) from Bati district living in town areas (*Table 2*).

The majority of the participants were farmers (82%, 492/599) which was similar across all the districts (81% Donkeo, 83% Bati, 82% Kirivong). A higher proportion of females were farmers (63.6%, 313/385) compared to males (36.4%, 179/214).

Table 1. Demographic characteristics of participants in the KAP survey Takeo Province.

		≥ 50 years % (n=201)	30-49 years % (n=202)	Parents % (n=196)	Significance
Gender	Male	49.8 (100)	48.5 (98)	8.2 (16)	χ^2 (2) = 96.5, P =<0.01
	Female	50.2 (101)	51.5 (104)	91.8 (180)	
Location	Rural	87.5 (175)	92.1 (186)	93.4 (183)	χ^2 (6) = 49.5, P = <0.01
	Town	9.0 (18)	3.0 (6)	6.6 (13)	
	Flooded area	3.5 (7)	5.0 (10)	0 (0)	
District	Donkeo	33.3 (67)	36.6 (74)	30.6 (60)	
	Bati	31.8 (64)	33.7 (68)	33.7 (66)	
	Kirivong	34.8 (70)	29.7 (60)	35.7 (70)	

Table 2. Proportion of participants living in rural, town and flooded areas from Donkeo, Bati and Kirivong districts.

	Donkeo % (n)	Bati % (n)	Kirivong % (n)
Rural	89.1 (179)	86.4 (171)	97.5 (194)
Town	4.5 (9)	13.6 (27)	0.5 (1)
Flooded area	6.5 (13)	0 (0)	2.0 (4)
Total	100 (201)	100 (198)	100 (199)

1 response missing, χ^2 *(4) = 46.0, P < 0.001*

EDUCATION

Participants were asked about their basic education level: 52% (314/599) had attended primary school, 26% (156/599) reported secondary school and 22% (129/599) reported they had never been to school. There was a difference between the participant groups, with a higher proportion of the ≥50 age group never having been to school (*Figure 1*). There was a difference in the level of education attained by gender, with a higher proportion of males having completed secondary school education (34% vs 22%, χ^2 (2) = 13.0, P 0.002), and a higher proportion of females never having gone to school (24% vs 16%, χ^2 (2) = 13.0, P 0.002). There was also a difference by district with a higher proportion of participants (32%) from Kirivong district never having gone to school (*Figure 2*).

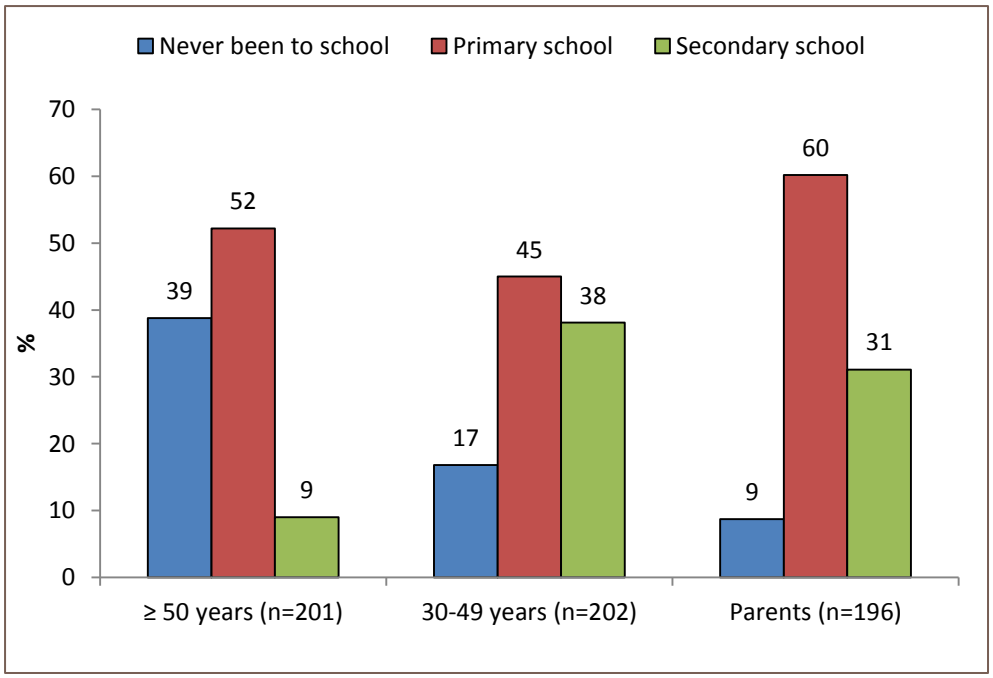

Figure 1. Level of education obtained by participants by groups, χ2 (4) = 85.1 P <0.01

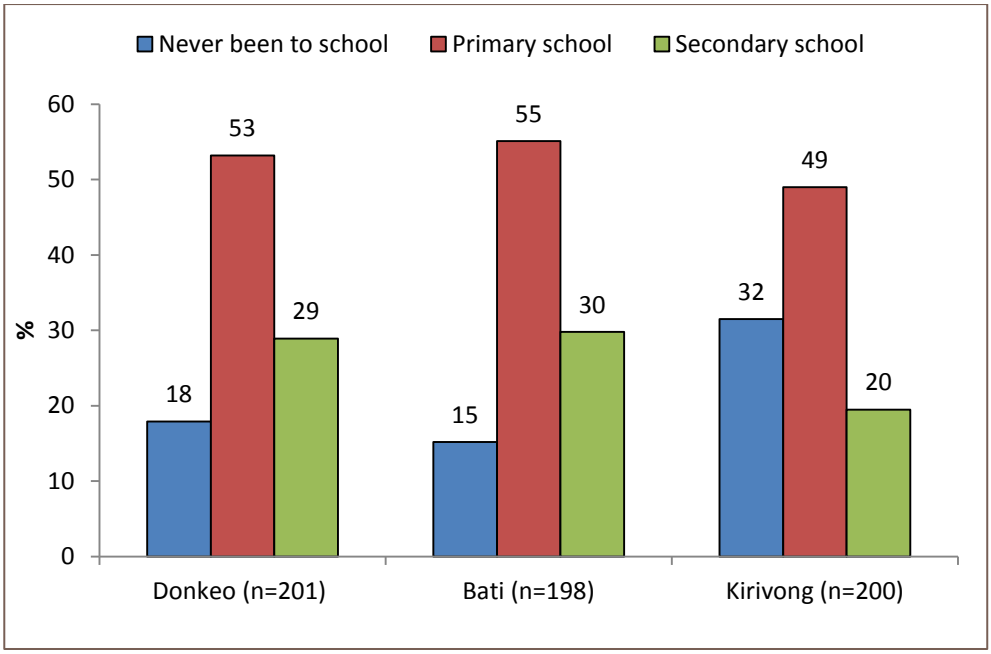

Figure 2. Level of education obtained by district, χ^2 (4) = 19.9, P = 0.001

INCOME

When participants were asked about their family monthly income, 47% (281/599) reported earning $30 US - $70 US; 40% (240/599) below $30 US; 9% (51/599) between $70 US - $100 US; 3% (16/599) > $100 US and 2% (11/599) reported having no family income. Distribution of family income among the participant groups differed slightly with the parents having a higher overall family income compared to the other groups (*Figure 3*). There was no difference by gender but there was a difference by district, with Donkeo district reporting an overall higher income (*Figure 4*).

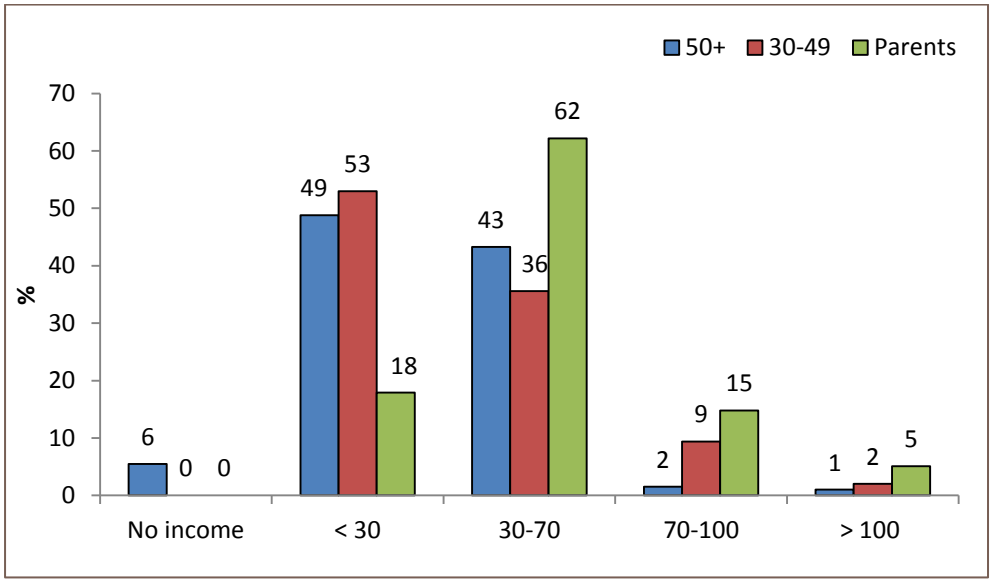

Figure 3. Monthly family incomes (US$) of participants by groups, χ^2 (8) = 102, P <0.001

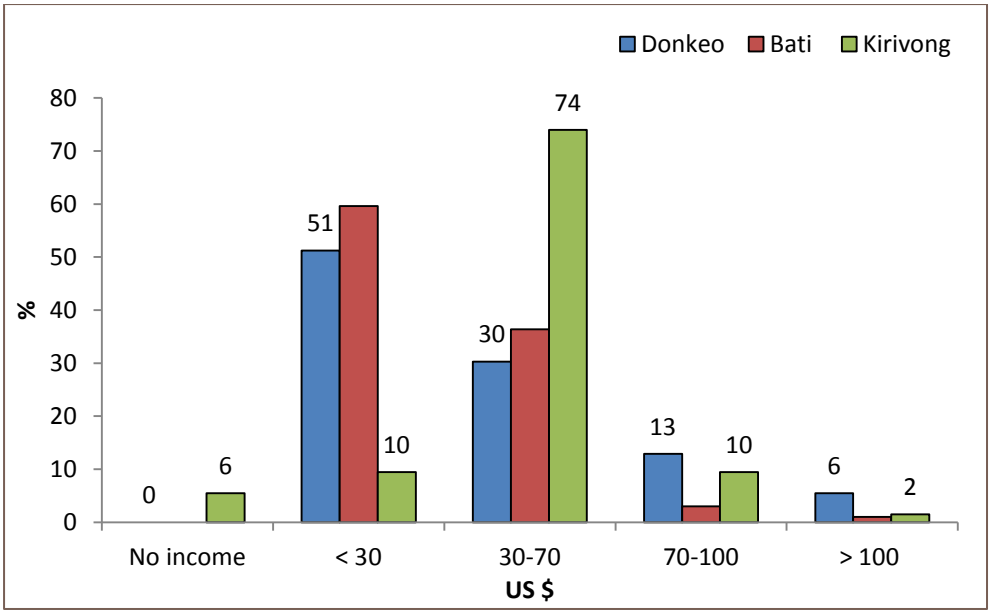

Figure 4. Reported monthly family incomes of participants by districts, χ^2 (8) = 162.2, P <0.001

INSURANCE

Only 6% (37/599) of participants reported having health insurance. There was a difference between the participant groups, 11% (22/201) of the 50+ year group reported having health insurance compared to 4% (8/202) of the 30-49 year group and the parents group (4%, 7/196) (χ^2 (2) = 12 P <0.01). Interestingly, despite having an overall lower monthly income, a higher proportion of participants from Kirivong district reported having health insurance (11%, 21/200), compared to Donkeo district (8%, 15/201) and Bati district (0.5%, 1/198, χ^2 (2) = 18.0, P <0.001). It should be noted that while these number are small. Reporting of *'having insurance'* could have been understood as having an *'equity card'*, which is allocated by the government for people whose income has been assessed to be below the poverty line.

The main reasons for not having health insurance were '*not knowing there was health insurance'* and '*not being able to afford it'* (*Table 3)*.

Table 3. Reasons reported by participants for not buying health insurance.

Reason for not buying health insurance	% (n)
Don't know there is health insurance	39.6 (222)
Too expensive	24.3 (136)
Not necessary	16.1 (90)
Don't know where to buy	14.6 (82)
Other	5.4 (30)
Total	100 (560)

2 responses missing

DISABILITY

Participants were asked if they had any of the following impairments; seeing, hearing, walking, understanding, or other(Figure 5). Twenty-five percent (148/599) of participants reported having at least one impairment.

It is important to note however that this does not represent the prevalence of disability in these districts as participants were not randomly selected, and convenience sampling was used to find one person with a disability from each cluster.

Males had significantly higher odds of reporting a disability compared females (OR 2.0, 95% CI: 1.4% - 2.9%). The mean age of participants with a disability was 57 years and 41 years for those without a disability. A higher proportion of participants from Bati district reported a disability (43%, 85/198) compared to Donkeo district (29%, 58/143) and Kirivong (3% 5/195, χ^2 (2) = 90.0, P <0.001).

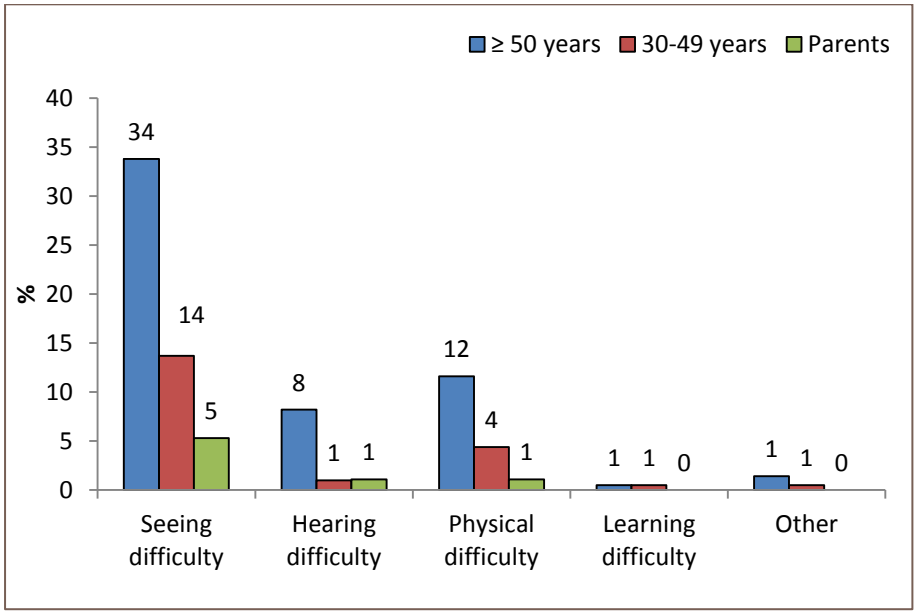

Figure 5. Type of reported disability by group

Key Findings:

- 94% of participants from rural areas.
- 82% farmers and unpaid workers.
- Majority have only a primary school education.
- A high proportion of participants from Kirivong district have not attended school.
- A higher proportion of participants from Kirivong report earning a lower monthly income.
- Practices used to treat specific eye diseases?
- Males have higher odds of reporting having an impairment.
- Most commonly reported impairment is seeing difficulty.

KNOWLEDGE OF EYE DISEASES

Most participants had heard of the following eye problems: eye injury/foreign body, pterygium, red eye, cross eyed, trichiasis and cataract. Knowledge of refractive error was reported by 2/3 of the participants. Fewer participants had heard of refraction related problems, trachoma, corneal ulcer, age related macular degeneration (AMD), glaucoma and diabetic eye disease (*Figure 8*). When participants were asked what causes trachoma 96% said they didn't know.

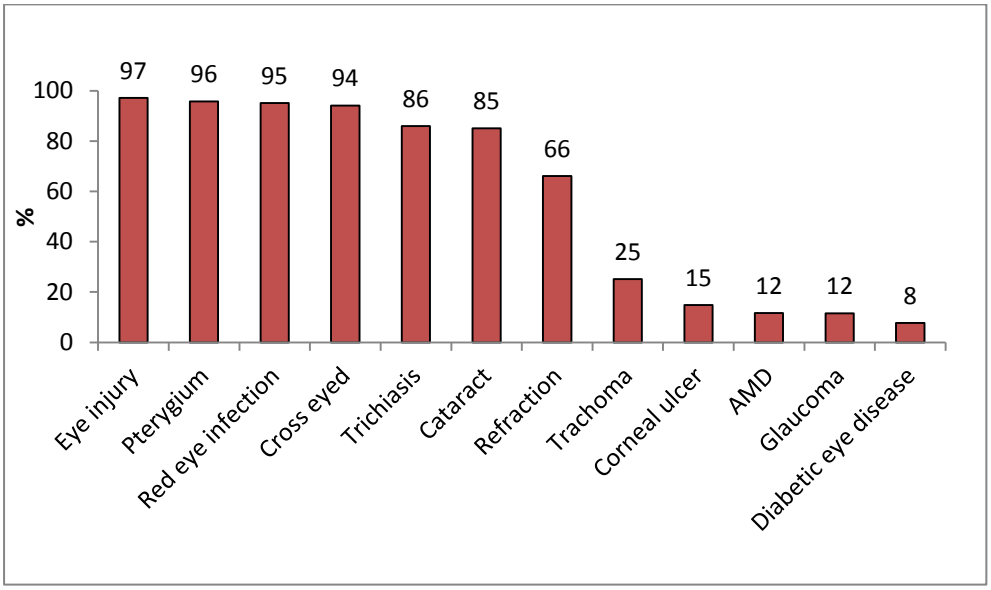

Figure 8. Proportion of participants who have heard of the above eye problems.

A higher proportion of the 30-49 year and parents group had heard of red eye, refraction related problems, cataract, cross-eyed, pterygium, and trichiasis compared to the 50+ year group (Table 4). In contrast, a higher proportion of the 50+ year group had heard of trachoma compared to the 30-49 year and parents groups. There was no significant difference between having heard of eye injury/foreign body between the participant groups (*Table 4*). Corneal ulcer, AMD, glaucoma and diabetic eye disease were excluded from this analysis. A higher proportion of the older participants had heard of trachoma compared to the other age groups - this could be an indicator of trachoma having been more of a problem in the past for the older generation than it is now for the younger generations.

Trachoma was better known among the older age group (35.5%) as compared to the parents of young children group (10.7%) (Table 4). This is likely to be associated with early trachoma campaigns. A higher proportion of females (33%) had heard of trachoma compared to males (21%, χ^2 (1) = 11.9, P = 0.001). There was no other significant difference by gender and having heard of the other eye diseases.

Table 4. Proportion of participants who had heard of the following eye disease by group.

Eye diseases	≥ 50 years %	30-49 years %	Parents %	Significance
Red eye	88.6	98.5	98.0	χ^2 (2) = 26.4, P < 0.001
Refraction related problems	46.3	81.2	70.9	χ^2 (2) = 57.8, P <0.001
Cataract	66.5	91.6	97.4	χ^2 (2) = 84.9, P <0.001
Trachoma	35.5	28.9	10.7	χ^2 (2) = 34.6, P <0.001
Cross-eyed	89.5	94.6	98.5	χ^2 (2) = 14.5, P =0.001
Pterygium	90.0	98.5	98.5	χ^2 (2) = 22.9, P <0.001
Trichiasis	87.4	90.0	81.6	χ^2 (2) = 6.2, P = 0.045
Eye injury/foreign body	95.5	97.0	99.0	χ^2 (2) = 5.3, P = 0.070

Table 5 shows the distribution of the proportion of participants who had heard of different eye diseases. There is no great difference across districts.

Table 5. Proportion of participants who had heard of the following eye disease by district.

Eye diseases	Donkeo %	Bati %	Kirivong %	Significance
Red eye	92.5	98.5	94.0	χ^2 (2) = 8.0, P = 0.01
Refraction related problems	60.7	74.2	63.5	χ^2 (2) = 9.1, P = 0.01
Cataract	80.0	91.9	83.5	χ^2 (2) = 11.8, P = 0.003
Trachoma	28.1	25.3	22.0	χ^2 (2) = 2.0, P = 0.36
Cross-eyed	95.0	88.4	99.0	χ^2 (2) = 20.7, P = <0.001
Pterygium	96.5	92.9	97.5	χ^2 (2) = 5.5, P = 0.06
Trichiasis	79.7	86.9	92.5	χ^2 (2) = 13.9, P = 0.001
Eye injury/foreign body	96.5	96.5	98.0	χ^2 (2) = 1.0, P = 0.59

KNOWLEDGE OF EYE DISEASES (BY DISABILITY)

A higher proportion of participants without a disability had heard of cataract, cross eyed, pterygium, and eye injury/foreign body compared to people with a disability (*Table 6*).

Table 6. Proportion of participants who had heard of the following eye disease by disability.

Eye diseases	No disability %	Disability %	Significance
Red eye	95.6	93.2	χ^2 (1) = 1.3, P = 0.26
Refraction related problems	67.8	60.8	χ^2 (1) = 0.12, P = 0.11
Cataract	88.4	75.0	χ^2 (1) = 15.9, P < 0.001
Trachoma	24.9	25.9	χ^2 (1) = 0.05, P = 0.81
Cross-eyed	97.6	83.7	χ^2 (1) = 38.8, P = < 0.001
Pterygium	97.8	89.2	χ^2 (1) = 19.8, P = < 0.001
Trichiasis	87.1	84.1	χ^2 (1) = 0.8, P 0.36
Eye injury/foreign body	98.0	93.9	χ^2 (1) = 6.4, P = 0.012

To test for confounding effects, the data were analysis using logistic regression using the variables age, education and disability. Our findings showed the following:

Knowledge of red eye

After putting disability, age and education into the regression model, having a secondary education came out as the significant predictor of having knowledge of red eye - having a secondary school education increased the odds of having heard of red eye.

Knowledge of refraction related problems

After putting disability, age and education into the regression model, only younger age was a significant predictor of whether a participant had knowledge about refraction related problems with odds of having knowledge.

Cataract

Age and education were both independently associated with knowledge of cataract -having a secondary education increased the odds of having heard of cataract and being older decreased the odds of having heard of cataract, disability was no longer a significant predictor.

Trachoma

Age and education were both independently associated with having heard of trachoma with older people having higher odds of having heard of trachoma and having a secondary education was associated with higher odds of having heard of trachoma.

Cross-eyed

After putting disability, age, and education into the regression model - not having a disability was the only significant predictor having heard of cross-eyed - people without a disability had higher odds of having heard of being cross-eyed compared to those without a disability.

Pterygium

After putting disability, age, and education into the regression model - not having a disability was the only significant predictor having heard of pterygium - people without a disability had higher odds of having heard of being pterygium compared to those without a disability.

Trichiasis

After putting disability, age, and education into the regression model - being older was significantly associated with higher odds of having heard of trichiasis.

Eye injury/foreign body

After putting disability, age, and education into the regression model - there was no difference between those with or without an education, those with or without a disability, being older or younger and having heard of eye injury.

HOW A PERSON CAN BECOME BLIND

Participants were asked what diseases caused a person could become blind. The most commonly reported reasons were '*don't know*', '*injury to eye*', '*lack of vitamin A*' and '*cataract*' (*Table 7*). Participants had the opportunity to report '*other*' reasons on how they believe a person can become blind that weren't pre-recorded onto the survey. These are shown in *Table 8*. One of the most commonly reported '*other*' reason was '*because of old age*' and interestingly '*dust*'.

Table 7. Reasons reported by participants on what could cause a person to become blind reported (Multiple answers).

Reason	% (n)
Don't know	46.7 (236)
Because of disease	34.2 (38)
Because of old age	31.5 (35)
Injury to eye	25.5 (129)
Lack of vitamin A	12.3 (62)
Dust	12.6 (14)
Poor nutrition	12.6 (14)
Cataract	9.9 (50)
Refraction related problem	2.4 (12)
Infection in eye	1.8 (9)
Work too hard	8.1 (9)
Trichiasis	0.9 (5)
Glaucoma	0.4 (2)

CAN SOME BLINDNESS BE PREVENTED?

When participants were asked if they thought some blindness could be prevented, 65% (388/597) reported 'yes', 10% (61/597) reported 'no' and 25% (148/597) reported 'don't know'. Fewer participants from the 50+ group believed that some blindness can be prevented compared to the other groups (χ^2 (4) = 125.3 P <0.001) (*Figure 9*). There was no difference between males and females, but there was a considerable difference between disability status, with a much lower proportion of participants with a disability status believing that blindness can be prevented (χ^2 (2) = 41.4 P <0.001) (*Figure 10*).

Some of the people with visual impairment suffer from non-avoidable eye diseases, so it's understandable that fewer people with a disability consider blindness as being preventable.

A higher proportion of participants from Donkeo district believed that some blindness could be prevented (78%, 155/200) compared to Kirivong (59%, 117/199) and Bati (59%, 116/198, χ^2 (4) = 30.8, P <0.001).

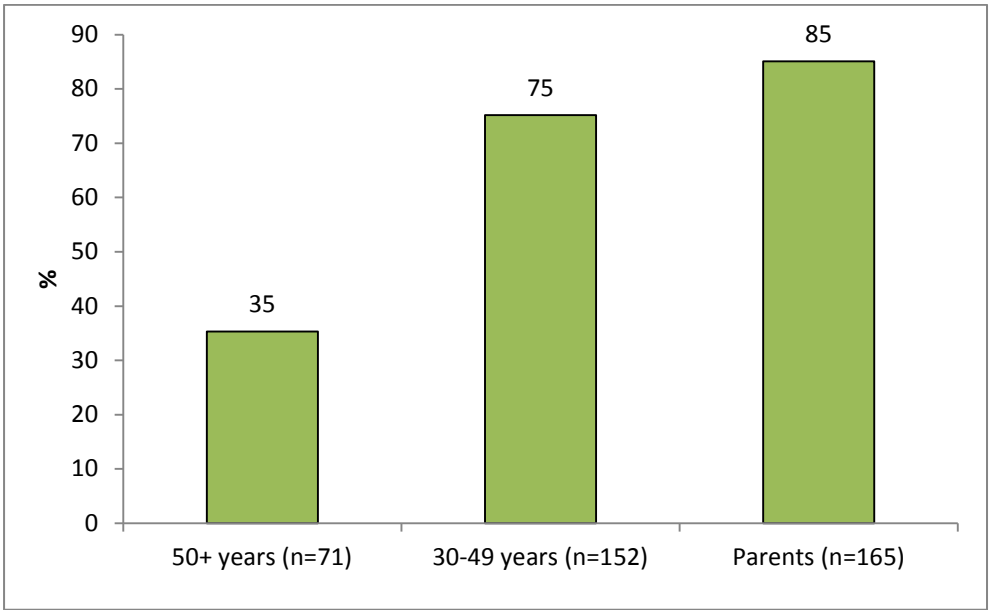

Figure 9. Proportion of participants who believe some blindness can be prevented by participant group, *χ^2 (4) = 125.3 P <0.001*

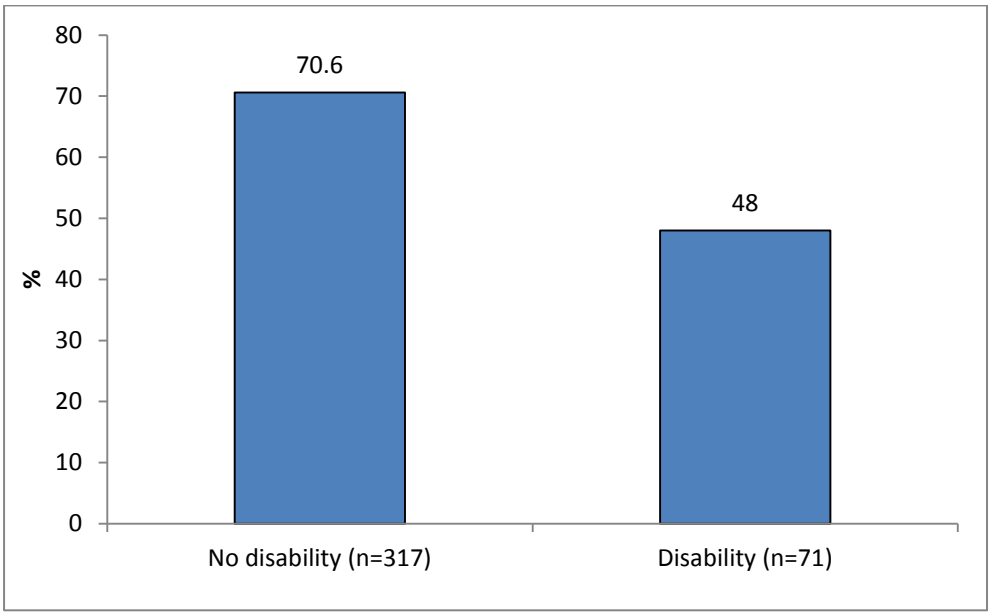

Figure 10. Proportion of participants who believe some blindness can be prevented by self-reported disability and participants without disability, *χ^2 (2) = 41.4 P <0.001*

BEST TREATMENT FOR CATARACT

Forty-nine percent of participants reported not knowing what the best treatment for cataract is. Twelve percent reported traditional medicine to be the best treatment for cataract and interestingly 9% of participants specifically reported steam from boiling rice to be the best treatment for cataract (*Table 8).* These results indicate improved awareness around the best treatment for cataract surgery is required.

Table 8. Reported best treatment for cataract.

Treatment	**% (n)**
Don't know	49.2 (291)
Surgery	18.6 (110)
Traditional medicine	12.2(72)
Eye drops	10.0 (59)
Steam from boiling rice	9.1 (54)
Antibiotic	0.5 (3)
Cannot treat	0.3 (2)
Total	100 (591)

8 responses missing,

There was a difference by participant group with a lower proportion of the parents' groups reporting 'don't know' and a higher proportion reporting 'eye drops' as the best treatment for cataract (*Table 9).*

Table 9. Reported best treatment for cataract by participant group.

Treatment	≥ 50 years % (n)	30-49 years % (n)	Parents % (n)
Don't know	54.8 (108)	53.0 (106)	39.7 (77)
Traditional medicine	23.9 (47)	18.5 (37)	21.6 (42)
Surgery	17.3 (34)	20.0 (40)	18.6 (36)
Eye drops	3.6 (7)	7.0 (14)	19.6 (38)
Antibiotic	0 (0)	1.0 (2)	0.5 (1)
Cannot treat	0.5 (1)	0.5 (1)	0 (0)
Total	100 (197)	100 (200)	100 (194)

8 responses missing, χ^2 (10) = 38.0, P <0.001

Reported best treatment for cataract by gender is shown in Table 10. Overall, few reported surgery to be the best treatment for cataract (males 18.3% and females 18.8%) which indicates more awareness around the best treatment for cataract is required.

Table 10. Reported best treatment for cataract separated by gender.

Treatment	Male % (n)	Female % (n)
Don't know	52.9 (110)	47.3 (181)
Traditional medicine	23.6 (49)	20.1 (77)
Surgery	18.3 (38)	18.8 (72)
Eye drops	4.8 (10)	12.8 (49)
Antibiotic	0 (0)	0.8 (3)
Cannot treat	0.5 (1)	0.3 (1)
Total	100 (208)	100 (383)

8 response missing, χ^2 (5) = 12.1 P = 0.03

There was a difference by district with a higher proportion of participants from Donkeo district who reported traditional medicine as the best treatment for cataract and a much lower proportion reporting surgery as the best treatment. A higher proportion of participants from Donkeo and Kirivong reported cataract as being untreatable compared to participants from Bati (*Table 11*).

Table 11. Reported best treatment for cataract by district.

Treatment	Donkeo % (n)	Bati % (n)	Kirivong % (n)
Cannot treat	51.3 (102)	42.0 (81)	54.3 (108)
Traditional medicine	25.1 (50)	3.1 (6)	1.5 (3)
Surgery	8.0 (16)	32.1 (62)	24.1 (48)
Eye drops	15.6 (31)	20.7 (40)	19.6 (39)
Antibiotic	0 (0)	0.5 (1)	0.5 (1)
Don't know	0 (0)	1.6 (3)	0 (0)
Total	100 (199)	100 (193)	100 (199)

8 responses missing, χ^2 (10) = 108.9, P <0.001

A higher proportion of participants with a reported disability did not know the best treatment for cataract, and a lower proportion of participants with a disability reporting traditional medicine and eye drops as the best treatment for cataract (*Table 12*).

Table 12. Reported best treatment for cataract by disability status.

Treatment	No disability % (n)	Disability % (n)
Don't know	46.0 (205)	59.3 (86)
Traditional medicine	22.9 (102)	16.6 (24)
Surgery	18.2 (81)	20.0 (29)
Eye drops	12.1 (54)	3.4 (5)
Antibiotic	0.4 (2)	0.7 (1)
Cannot treat	0.4 (2)	0 (0)
Total	100 (446)	100 (145)

8 responses missing, χ^2 (5) = 15.2, P = 0.01

CAUSES OF DISABILITY

Participants were asked what the main causes of disability were in their community; most participants reported accidents (traffic, work or home) to be the main cause of disability (*Figure 11*). Reported injuries caused during the war and injuries from bomb/mines left from the war total 16%.

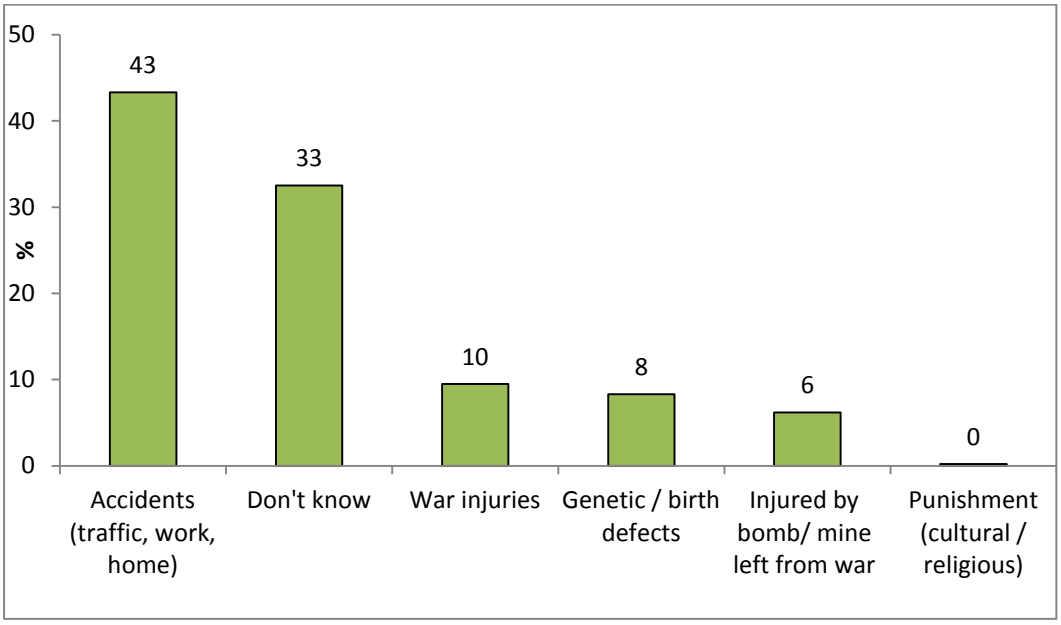

Figure 11. Reported causes of disability reported by participants.

PREVENTIVE MEASURES FOR RED EYE

When participants were asked how red eye could be prevented '*using clean water*', '*regular hand washing'* and '*avoiding sharing face cloths'* were the most commonly reported prevention methods (*Figure 12*).

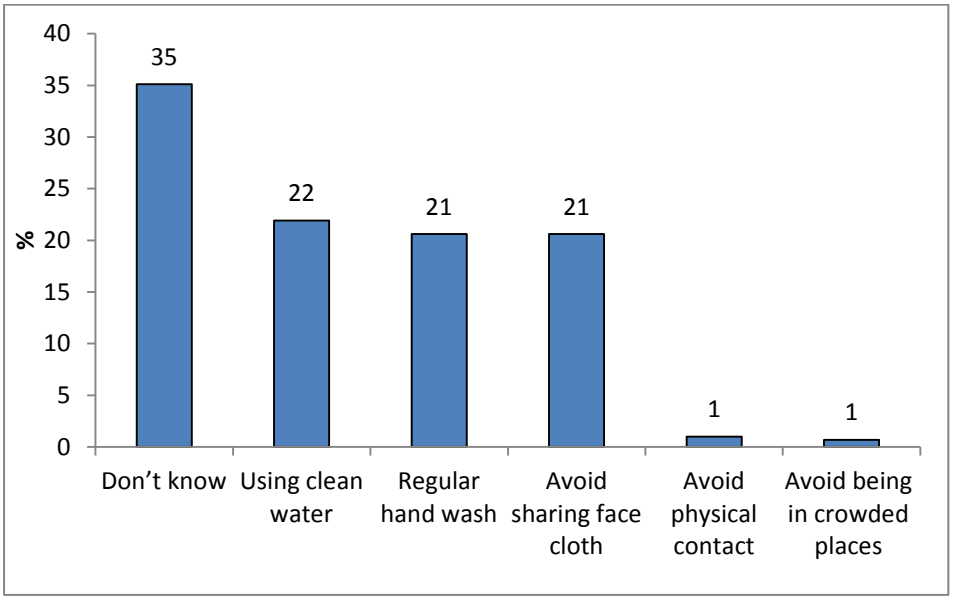

Figure 12. Preventive measures for red eye reported by participants.

INFORMATION SOURCES

Relatives and family members were reported to be the main source of information (41%) for eye related problems, followed by health centre staff (24%) and the radio (12%) (*Table 13)*.

Table 13. Sources of information related to eye problems reported by participants.

Source of information	% (n)
Relatives/family members	41.2 (303)
Health centre	23.5 (95)
Radio	11.8 (87)
Friends	13.1 (96)
TV	7.8 (57)
Takeo Eye Hospital	5.9 (43)
Village health workers	2.4 (18)
Posters	1.2 (9)
Referral hospital	1.0 (7)
Newspapers	0.5 (4)
Leaflets	0.4 (3)
Other	1.9 (13)

Multiple responses were allowed.

Key Findings:

- High proportion of participants had heard of the more common eye problems such as: eye injury/foreign body, cataract, pterygium, red eye, and trichiasis.
- Few participants had heard of refraction related problems, trachoma, corneal ulcer, AMD, glaucoma and diabetic eye disease.
- Using clean water, regular hand washing and avoiding sharing face clothes were the most common preventive methods reported by participants to prevent red eye.
- Almost half of participants (47%) reported not knowing how someone can become blind.
- Two-thirds (65%) of participants believe blindness can be prevented.
- Almost half of participants (65%) reported not knowing the best treatment for cataract.
- 21% of participants from Donkeo reported traditional medicine as the best treatment for cataract.
- The most common source for eye information was friends and family.

ATTITUDES

The survey explored attitudes of the participants to beliefs on whether a child with vision impairment can go to school and on what they consider to be the most trustworthy source for information on eye health.

CAN CHILDREN WITH VISION IMPAIRMENT GO TO SCHOOL?

When participants were asked if a child with vision impairment could go to school, 52% (310/598) reported 'yes', 43% (257/598) reported 'no' and 5% (31/598) reported 'don't know'. A lower proportion of participants from the 50+ group believed that a child with vision impairment could go to school (*Figure 13*). A higher proportion of females believed that a child with vision impairment could attend school compared to males (55% vs 46%, (χ^2 (1) = 11.9 p = 0.003). Having a disability made a difference to how participants answered; a much lower proportion of participants with a disability (34%) believed that a child with vision impairment could go to school compared to participants without a disability (58%) (*Figure 14*). There was no difference by district.

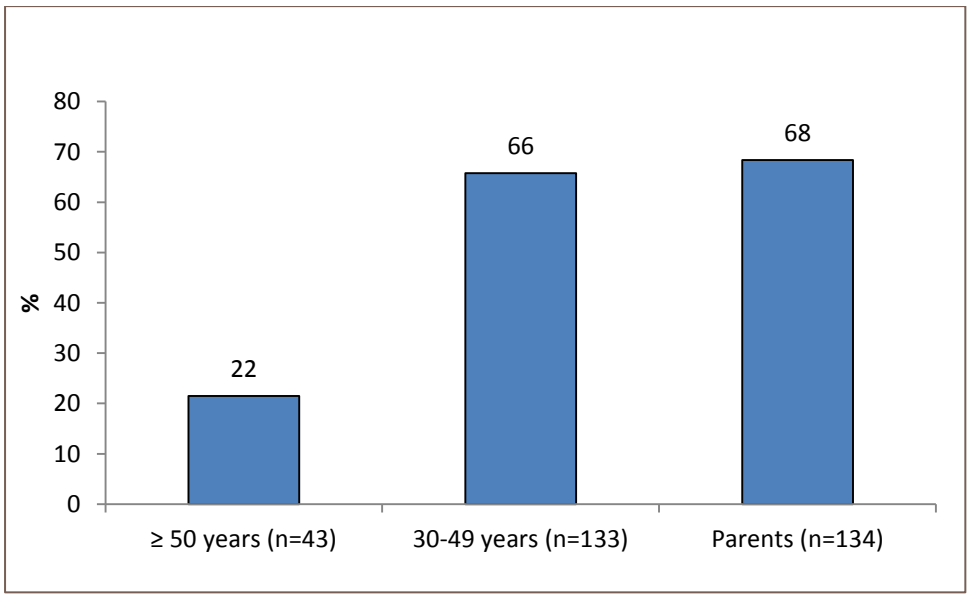

Figure 13. Proportion of participants by age group who reported a child with vision impairment could go to school, χ^2 (4) = 115.7, P < 0.001

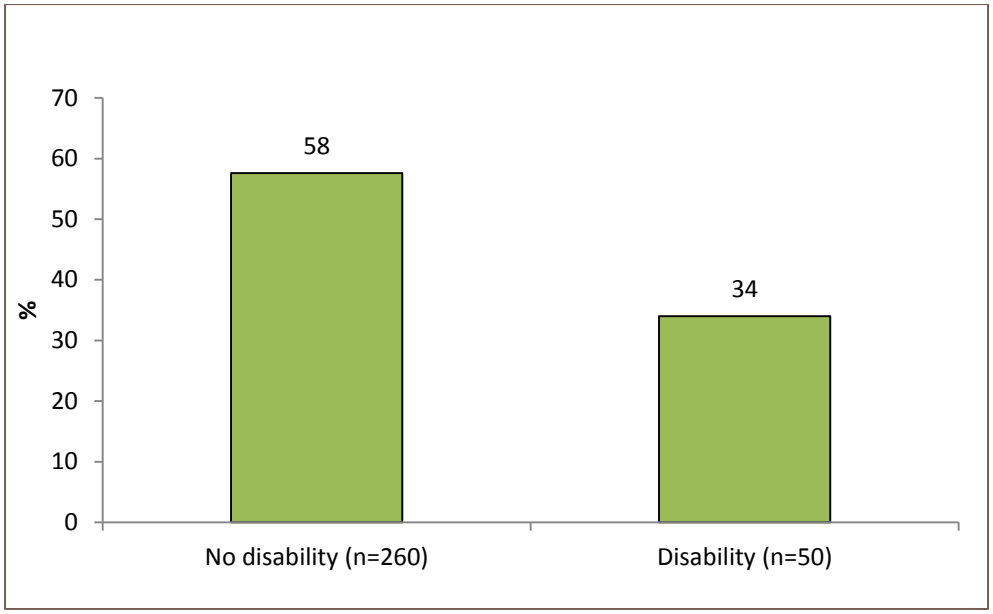

Figure 14. Proportion of participants with a disability and without who reported a child with vision impairment could go to school, χ^2 (2) = 25.3, P < 0.001

Similar numbers of participants reported the most trusted sources for eye information were health centre staff and radio (*Table 15*).

Table 15. Most trusted source of eye information reported by participants.

Most trusted source	% (n)
Health centre staff	25.3 (145)
Radio	24.1 (138)
Village health workers	12.7 (73)
TV	12.4 (71)
Relatives/family members	11.3 (65)
Eye screening/eye camp	7.2 (41)
Takeo Eye Hospital	3.8 (22)
Other	3.1 (18)

Key Findings:

- The most trusted sources for eye information were health centre staff and radio.
- 43% of participants believe a child with visual impairment cannot go to school.
- A lower proportion of participants from the oldest age group and males believe a child with vision impairment can go to school.
- A lower proportion of participants with a disability believe a child with visual impairment can go to school compared to those without a disability.

PRACTICE

EYE HEALTH

Sixty-two percent (372/599) of participants reported having had an eye problem in the past. The most commonly reported eye problem was red eye followed by difficulty seeing/refraction problems. (*Table 16*). A higher proportion of males (69% 147/214) reported having had a problem compared to females (58% 225/385) (χ^2 (1) = 6.1, P =0.013). This could be as a result of a higher proportion of males reporting having a trauma related disability. A higher proportion of eye problems was also reported in people with a disability compared to those without (79% vs 57% χ^2 (1) = 23.9, P <0.001), this is likely to be due to 'seeing difficulty' being the most commonly reported impairment. A higher proportion of participants from Donkeo district reported having had a problem (72%, 144/201), compared to Bati (59%, 117/198) and Kirivong (56%, 111/200, χ^2 (2) = 12.2, P = 0.002). There was no difference by participant group.

Table 16. Reported eye problems.

Reported eye problem	% (n)
Red eye	37.6 (152)
Difficulty seeing/refractive error	28.7 (116)
Pterygium	18.1 (73)
Injury	5.9 (24)
Cataract	2.7 (11)
Trichiasis	2.7 (11)
Other	2.7 (11)
Age related macular degeneration (AMD)	1.2 (5)
Corneal Ulcer	0.2 (1)

2 responses missing. Multiple problems could be reported.

Key Findings:

- 62% of participants reported having had an eye problem.
- A higher proportion of male participants with an impairment and participants from Donkeo reported having had an eye problem.
- The most commonly reported eye problems were red eye and blurry vision.

Of those with reported eye problems, 23% (142/372) reported having had an examination for their eye problem. A higher proportion of females reported having had an examination for their eye problems compared to males (46% vs 26% (χ^2 (1) = 14.9, P < 0.001). Similarly a higher proportion of participants from the parents group reported having had an examination for their eye problem compared to the other participant groups (*Figure 15*). A higher proportion of participants from Donkeo reported having had an eye examination for their eye problems (56%, 80/142), compared to Bati (42%, 49/117) and Kirivong (12%, 13/111). There was no significant difference between examination rate and having a disability or not (χ^2 (1) = 0.19, P = 0.66).

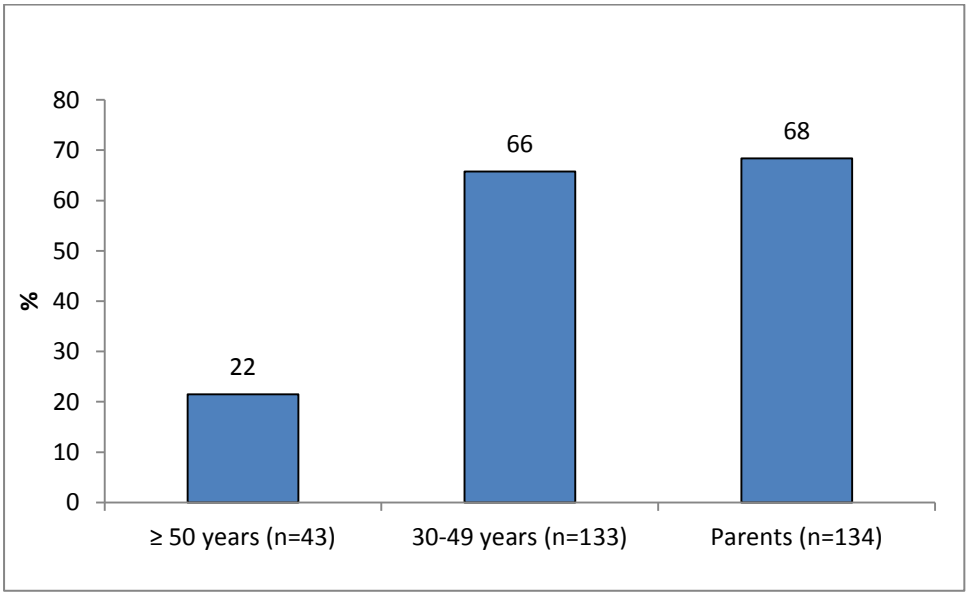

Figure 15. Proportion of participants who went for an eye exam for their reported vision problems by group, *χ^2 (2) = 24.7, P < 0.001*

Key Findings:

- Of those with eye problems, only 23% reported having had an eye examination for their eye problems.
- A higher proportion of females had an eye examination compared to males.
- Parents (68%) and the 30-49 year old group (66%) were similar and higher than the >50 year old group (22%).
- A higher proportion of participants from Donkeo district had had an eye examination compared to participants from other districts. (Closer proximity to Takeo Eye Hospital.)

Health centres followed by Takeo Eye Hospital were the most popular locations for participants to go to for their eye examination for their eye problems (*Tables 17*).

Table 17. Examination location for participants with a reported eye problem.

Examination location	% (n)
Health centre staff	40.8 (58)
Takeo Eye Hospital	36.6 (52)
Pharmacist	7.0 (10)
Self-treatment at home	4.9 (7)
Private doctor	3.5 (5)
Referral hospital	2.8 (4)
Other eye unit	1.4 (2)
Eye-Screening/eye camp	1.4 (2)
Village health workers	0.7 (1)
Private nurse	0.7 (1)
Total	100 (142)

Key Finding:

- A total 78% of participants reported the likelihood of going to health centre or Takeo Eye Hospital for their eye problems.

HEALTH CHECK

Participants were asked if they had a health check. This question was included to see if there was a difference in the pattern to going for health check compared to going for an eye check.

Of those participants who were asked how often they have their health checked, 56% (317/570) reported only getting their health checked when sick, 27% (154/570) reported never having their health checked, 6% (35/570) reported once a quarter, 5%(29/570) reported twice a year, and 3% (18/570) reported having a health check when they felt 'seriously sick'.

A higher proportion of participants from the parents group reported going for health checks. (This could also be influence by their children's health).

A higher proportion of participants of the 30-49 year age group reported never having gone for health checks (T*able 18*).

Table 18. How often participants have their health checked by participant group.

	≥ 50 Years % (n)	30-49 years % (n)	Parents % (n)
Regularly - at least once a year	15.0 (29)	11.7 (23)	16.2 (29)
Whenever sick	53.4 (103)	47.2 (93)	76.5 (137)
Never	31.6 (61)	41.1 (81)	7.3 (13)
Total	100 (193)	100 (197)	100 (179)

2 missing, χ^2 *(4) = 58.1, P < 0.001*

There was a significant difference by gender with a higher proportion of females reporting going for a health check compared to males. A much higher proportion of males reported never having gone for a health check compared to females (*Table 19*).

Table 19. How often participant have their health checked by gender.

	Male % (n)	Female % (n)
Regularly - at least once a year	13.8 (29)	14.5 (52)
Whenever sick	51.4 (108)	62.7 (225)
Never	34.8 (73)	22.8 (82)
Total	100 (210)	100 (359)

2 missing, χ^2 *(2) = 9.8, P =0.007*

A considerably lower proportion of participants from Kirivong district reported having regular health checks compared to the other districts (*Table 20*).

Table 20. How often participants have their health checked by district.

	Donkeo % (n)	Bati % (n)	Kirivong % (n)
Regularly - at least once a year	21.5 (41)	20.0 (39)	0.5 (1)
Whenever sick	56.5 (108)	53.8 (105)	65.6 (120)
Never	22.0 (42)	26.2 (51)	33.9 (62)
Total	100 (191)	100 (195)	100 (183)

2 missing, χ^2 (4) = 43.0, P < 0.001

EYE CHECK

Participants were also asked how often they had their eyes checked; 77% (459/599) reported never having their eyes checked, 16% (93/599) reported only when their eyes are infected, 1.2% (7/599) when seriously infected, 3.0% (18/599) reported only when they have a vision problem, 2.0% (12/599) twice a year, 1.0% (6/599) once a year, 0.5% (3/599) when seriously injured and 0.2% (1/599) once a quarter.

Overall, participants have never had their eyes checked, but a higher proportion of the 50+ groups reported having regular eye checks (*Table 21*).

Table 21. How often participants have their eyes checked by participant group.

	≥ 50 years % (n)	30-49 years % (n)	Parents % (n)
Regularly - at least once a year	7.5 (15)	2.0 (4)	0 (0)
Whenever infected	11.9 (24)	19.0 (38)	29.1 (57)
Never	80.6 (162)	79.0 (158)	70.9 (139)
Total	100 (201)	100 (200)	100 (196)

2 missing, *χ^2 (4) = 34.8, P < 0.001*

A higher proportion of males reported never having their eyes checked compared to females, whereas a higher proportion of females reported getting their eyes checked when they have an infection compared to males (*Table 22*).

Table 22. How often participants have their eyes checked by gender.

	Male % (n)	Female % (n)
Regularly - at least once a year	4.7 (10)	2.3 (9)
Whenever infected	13.6 (29)	23.4 (90)
Never	81.7 (174)	74.2 (90)
Total	100 (213)	100 (384)

2 missing, *χ^2 (2) = 10.0, P =0.007*

A much lower proportion of participants from Kirivong reported having their eyes checked compared to the other districts. A higher proportion of participants from Donkeo reported having regular eye checks (*Table 23*).

Table 23. How often participants have their eyes checked by district.

	Donkeo % (n)	Bati % (n)	Kirivong % (n)
Regularly - at least once a year	8.0 (16)	1.5 (3)	0 (0)
Whenever being infected	33.2 (66)	20.2 (40)	6.5 (13)
Never	58.8 (117)	78.3 (155)	93.5 (187)
Total	100 (199)	100 (198)	100 (200)

2 missing, χ^2 *(4) = 74.5, P < 0.001*

A higher proportion of participants with a disability reported having had their eyes checked compared to those without (*Table 24*).

Table 24. How often participant have their health checked by disability.

	No disability % (n)	Disability % (n)
Regularly - at least once a year	0.7 (3)	10.8 (16)
Whenever sick	18.9 (85)	23.0 (34)
Never	80.4 (361)	66.2 (98)
Total	100 (449)	100 (148)

2 missing, χ^2 *(2) = 39.8, P <0.001*

HEALTH CHECK VS. EYE CHECK

A much lower proportion of participants have had their eyes checked compared to those who have had their health checked. Of those who have had their health checked (n=412), 70% (290/412) have never had their eyes checked.

Key Findings:

- The majority of participants reported never having had their eyes checked.
- A higher proportion of males reported never having had their eyes checked compared to females.
- 94% of participants from Kirivong district reported never having their eyes checked.

PREVENTIVE MEASURES TO PROTECT EYES

Participants were asked what they did to protect their eyes. The most common responses were: '*using clean water*', '*wearing a hat in the sun*', '*wearing sun glasses*' and '*wearing safety goggles when working*' (*Figure 16*).

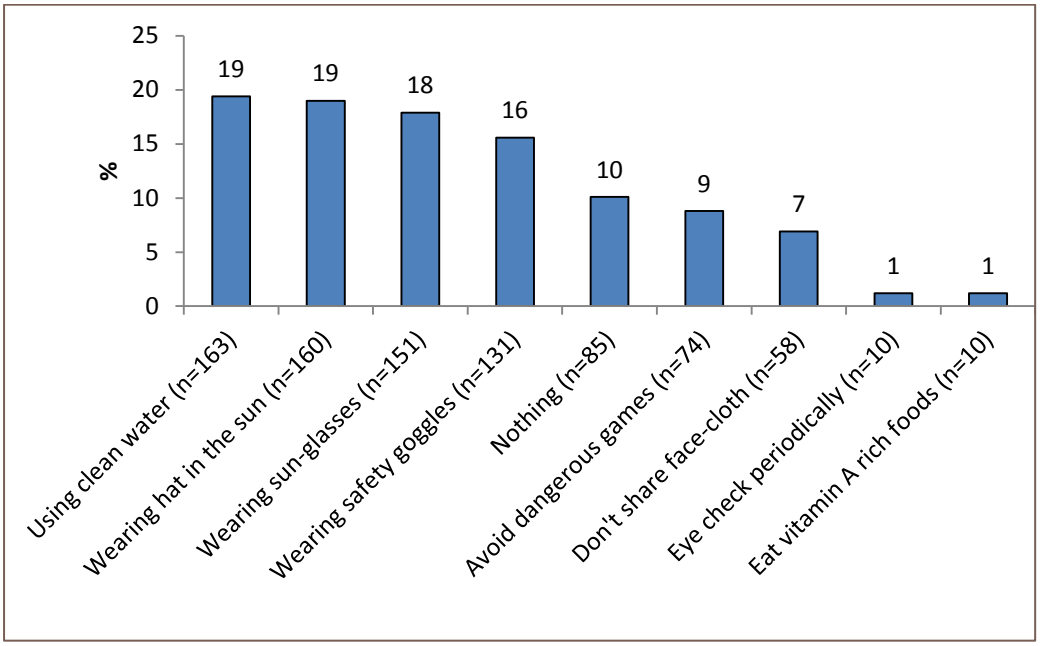

Figure 16. Reported measures used to protect eyes.

DO YOU WEAR GLASSES?

Nineteen percent (114/599) of participants reported wearing glasses. A higher proportion of males reported wearing glasses compared to females (35% vs 10% (χ^2 (1) = 52.2 P <0.001). A higher proportion of participants from the 50+ group reported wearing glasses compared to the other groups (*Figure 17*). This could be explained by the high prevalence of presbyopia among people aged ≥ 50 years. A higher proportion of participants with a disability reported wearing glasses compared to those without a disability (37% vs 13.3% (χ^2 (1) = 38.9 P <0.001). This could be due to the fact that the most commonly reported difficulty was seeing difficulty, or due to the mean age of participants with a disability being 57 years and the mean age for those without a disability being 41 years. There was no difference by district.

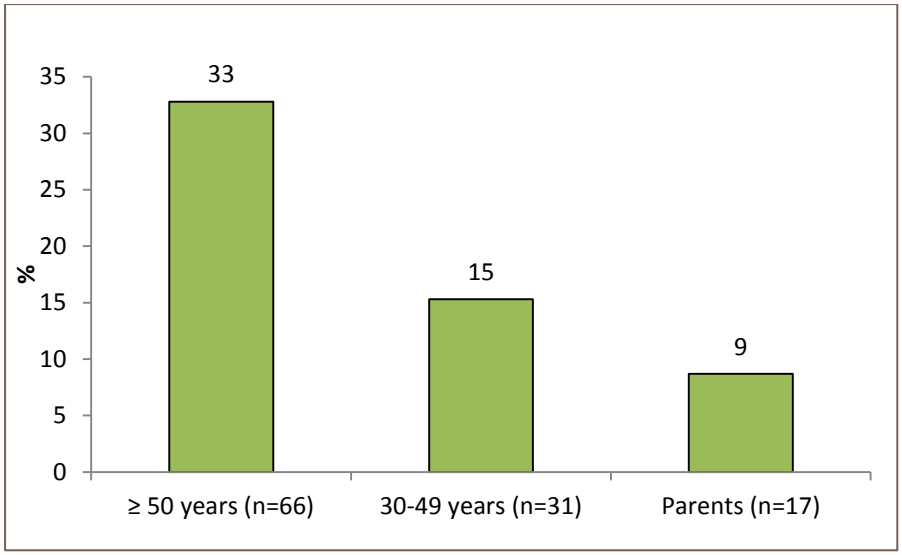

Figure 17. Proportion of participants with glasses by group, χ^2 (2) = 40.3, P < 0.001

Sixty-three percent (59/94) of participants self-selected their glasses from a market, 26% (24/94) purchased their glasses from an optical/glasses workshop, and 10% (9/94) bought their glasses from Takeo Eye Hospital. An extra 16% (15) of participants reported they were given the glasses by a relative. The majority of the glasses purchased were for near vision (*Figure 18*).

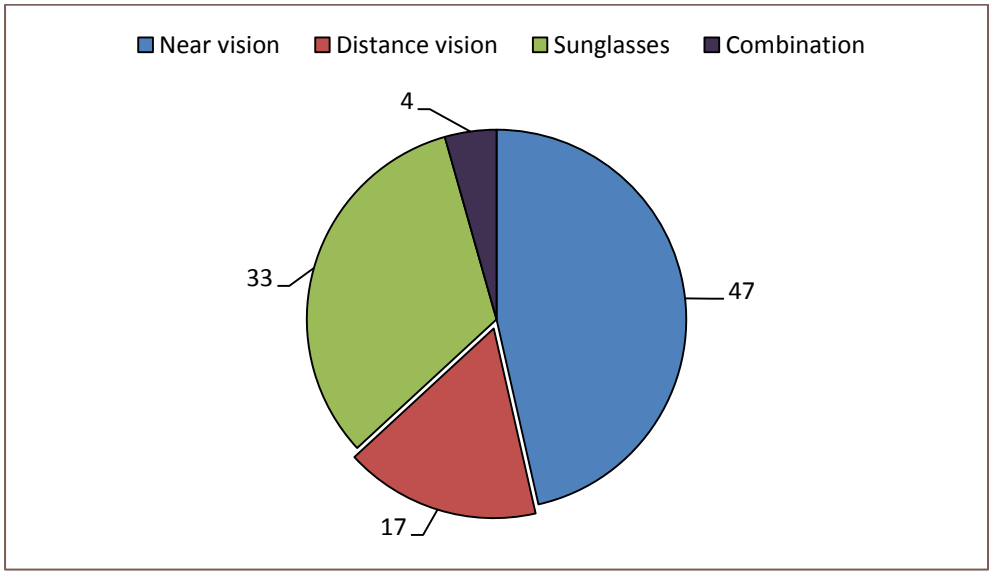

Figure 18. Types of glasses worn by participants.

Sixty eight percent (77/114) of participants reported their vision improved when wearing the glasses. A higher proportion of males reported their vision improved with the glasses compared to females (74% vs. 55%, (χ^2 (1) = 4.4 P = 0.03), this could be because a higher proportion of the males reported the use of corrective lenses and not sunglasses. A higher proportion of participants from the 50+ year group reported that their vision improved when wearing glasses compared to the other groups (80% for 50+, 52% for 30-49, 47% for parents group, (χ^2 (1) = 11.7, P =0.003). There was no difference by district or disability.

When asked if the glasses were expensive in comparison to their income, 70% (79/113) reported that the glasses were not expensive, 19% (21/113) reported they were expensive but affordable, 10% (11/113) reported the glasses were cheap and 2% (2/113) reported the glasses were too expensive. There was no difference by participant groups, gender, disability or district on whether participants thought the glasses were expensive or not.

Key Findings:

- 19% of participants reported wearing glasses, mainly because of presbyopia and 2/3rds were self-selected from the market.
- 68% reported their vision improved when wearing glasses.

SELF-REPORTED CATARACTS

Two percent (11/596) of all participants reported having cataracts, 11% (63/596) reported they didn't know. Four percent (8/198) of the $\geq$ 50 year age group, 0.5% (1/202) of the 30-49 year age group, and 1.0% (2/196) of the parents group reported having cataracts. There was no difference between reported cataracts by gender. A higher proportion of participants with a disability reported having a cataract (6% vs. 1%, (χ^2 (2) = 28.3, P < 0.001).

Of those who reported having cataracts, 64% (7/11) had cataract surgery. All participants reported having had their cataract surgery at Takeo Eye Hospital. The principal reason for not having cataract surgery was '*too expensive'* (75%, 3/4), followed by '*can still see/ not severe enough'* (25%, 1/4).

Key Findings:

- 4% of participants from the $\geq$ 50 year age group reported having cataracts.
- Seven out of eleven with a reported cataract, said they had eye surgery.

ACCESSIBILITY AND AFFORDABILITY

When asked how long it takes to get to the nearest eye institute, 54% (321/598) reported < 1 hour; of those almost a third (101/321) reported < 30 minutes, 27% (160/598) reported < 4 hours, and 2.5% (15/598) said they didn't know.

About two thirds of participants (68%, 404/594) reported not being able to travel to the eye institute alone, mainly people in the ≥ 50 year age group (χ^2 (2) = 36.2 P <0.001) (*Figure 19*). A higher proportion of females reported not being able to travel alone to the eye institute compared to males (74% vs 58%, χ^2 (1) = 15.2 P <0.001) and a higher proportion of participants with a disability reported not being able to travel alone to the eye institute compared to those without a disability (81% vs 64%, (χ^2 (1) = 15.0 P < 0.001). Bati reported not being able to travel to the eye institute alone (73%, 143/196) compared to Kirivong (70%, 140/200) and Donkeo (61%, 121/198, χ^2 (2) = 6.9, 0.03).

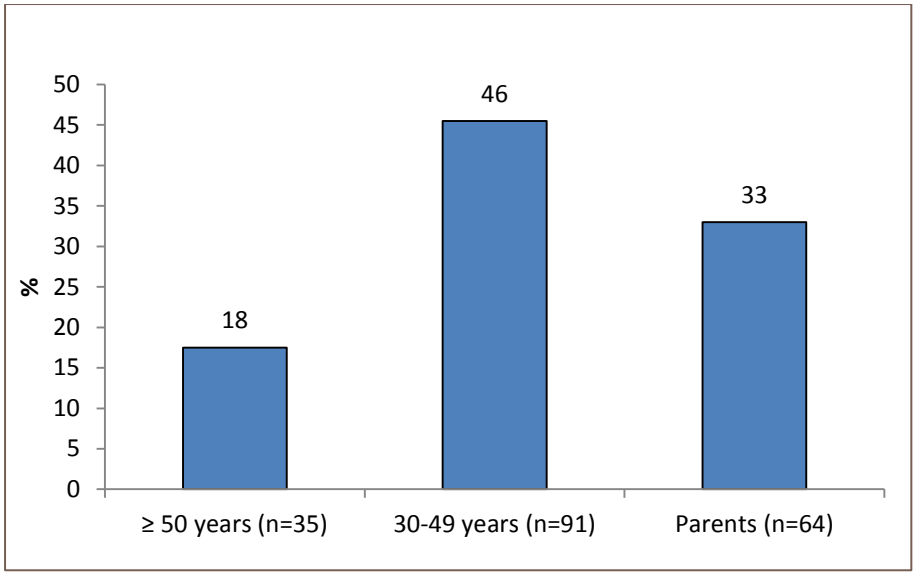

Figure 19. Proportion of participants able to travel to the eye institute alone, *χ^2 (2) = 36.2, P < 0.001*

Key Finding:

- 67% of participants reported not being able to travel to the eye institute alone.

COST OF TRANSPORTATION

When asked if transport to the eye institute was expensive in comparison to their income, only 6% (33/595) reported '*too expensive cannot afford*' .

Participants from the 50+ group found the cost of transportation the most expensive compared to the other groups (*Table 25*). This age group reported earning the lowest overall monthly income which explains why this group found the cost of transportation to be the most expensive.

Table 25. Cost of transportation by group.

	≥ 50 years % (n)	30-49 years % (n)	Parents % (n)
Too expensive, cannot afford	10.1 (20)	1.5 (3)	5.1 (10)
Expensive but affordable	42.2 (84)	13.9 (28)	22.1 (43)
Not expensive	32.7 (65)	82.6 (166)	72.8 (142)
Don't know	15.1 (30)	2.0 (4)	0 (0)
Total	100 (199)	100 (201)	100 (195)

4 responses missing, χ^2 *(6) = 136.8, P < 0.001*

Overall, participants from Donkeo found the cost of transportation the most expensive compared to participants form Bati and Kirivong. A higher proportion of participants from Kirivong found the cost of transportation to be expensive but affordable (*Table 26*).

Participants with a disability found the cost of transportation to be the most expensive compared to those without a disability (*Table 27*), this can be explained by the lower monthly income reported by participants with a disability.

Table 27. Cost of transportation by disability.

	No disability % (n)	Disability % (n)
Too expensive, cannot afford	4.7 (21)	8.2 (12)
Expensive but affordable	25.6 (115)	27.4 (40)
Not expensive	67.0 (301)	49.3 (72)
Don't know	2.7 (12)	15.1 (22)
Total	100 (449)	100 (146)

4 responses missing, χ^2 *(3) = 37.7, P < 0.001*

EXAMINATION FEE

When asked how expensive the examination fee was in comparison to their income, 2% (12/590) reported '*too expensive cannot afford*', 20% (116/590) reported '*expensive but affordable*', 70% (413/590) reported '*not expensive'*, and 8% (49/590) reported '*don't know*'. There was no difference by gender but there was a difference by district, disability and participant group.

Participants from the 50+ group also found the examination fee to be expensive for them compared to the other groups (*Table 28*). This could also be explained by their overall lower monthly income. Interestingly, nearly 1 in 5 participants did not know the cost of treatment. This indicates improved awareness around examination fees may be needed.

Table 28. Cost of examination fee by group.

Treatment	≥ 50 years % (n)	30-49 years % (n)	Parents % (n)
Too expensive, cannot afford	5.1 (10)	0.5 (1)	0.5 (1)
Expensive but affordable	34.4 (67)	7.0 (14)	17.9 (35)
Not expensive	41.5 (81)	86.4 (172)	81.6 (160)
Don't know	19.0 (37)	6.0 (12)	0 (0)
Total	100 (195)	100 (199)	100 (196)

9 responses missing, χ^2 *(6) = 129.9, P < 0.001*

EXAMINATION FEE AT TAKEO EYE HOSPITAL

Participants were asked how expensive they believed the examination fee to be at Takeo Eye Hospital. 62% (374/599) said they didn't know, 34% (206/599) said between 2,000-4,000 Riel.

The examination fee at Takeo Eye Hospital is 4,000 Riel for the first visit, and 2,000 Reil for the second visit. (4,000 Reil is equal to 1USD.)

(There seemed to be some confusion about how participants answered this question. A revision of the question is suggested).

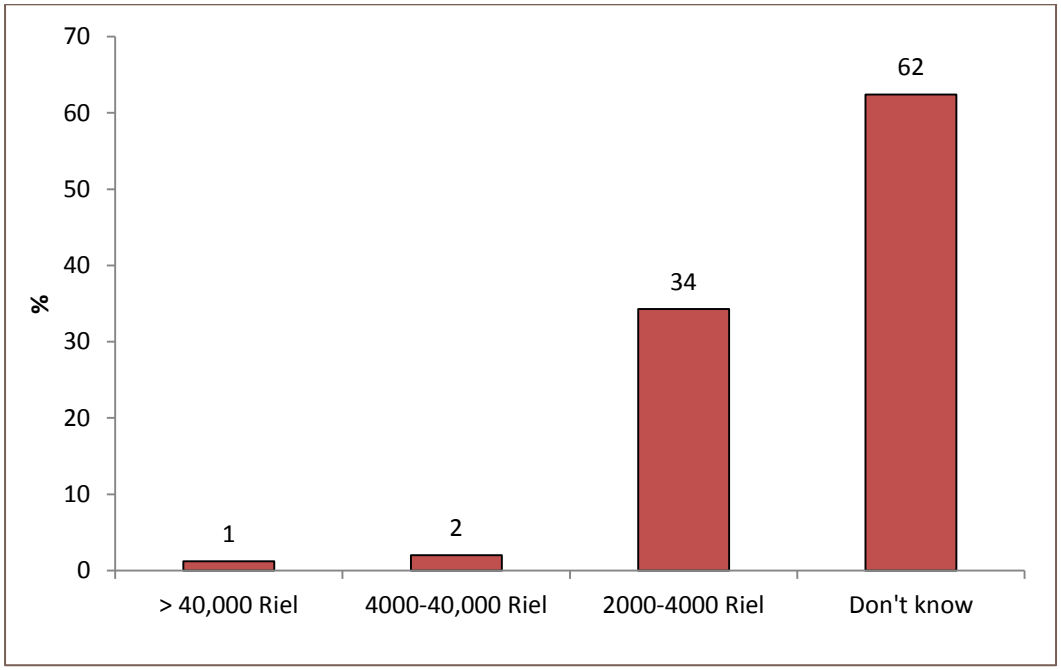

Figure 21. The cost participants believe the examination fee to be at Takeo Eye Hospital.

CHILDREN AND EYE HEALTH

Participants were asked if their children had any eye problems, reporting separately for their boy and girl children. 15% (64/434) reported their girl child had had an eye problem, and 18% (77/434) reported their boy child had had an eye problem. The most common eye problems reported for children were red eye (86%, 493/576), followed by weeping eye (10%, 56/576), injury (4%, 23/576), turned eye/cross eye (0.3%, 2/576) and cloudy eyes/difficult to see (0.2% 1/576).

For children's eye problems, health centre staff, self-treatment at home and Takeo Eye Hospital were the principal sources of eye care (*Figure 22*).

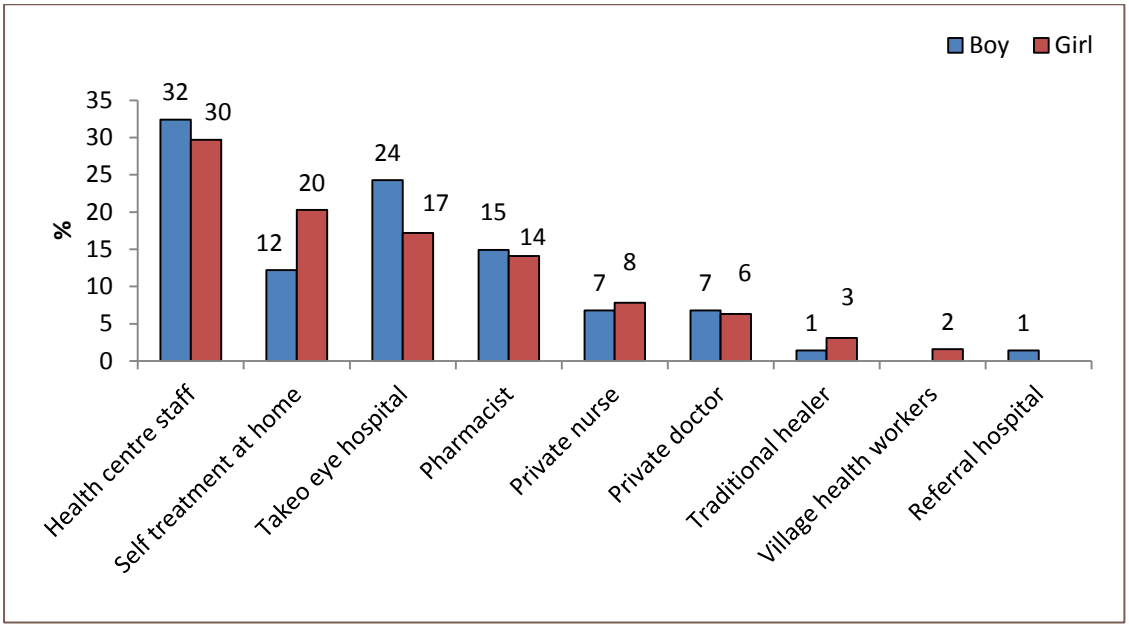

Figure 22. Where parents take their children for treatment for eye problems by gender.

Only 5% (23/434) of parents reported having health insurance for their children.

Parents reported health centre staff could provide the best treatment for their children, followed by Takeo Eye Hospital and friends/family (*Figure 23*).

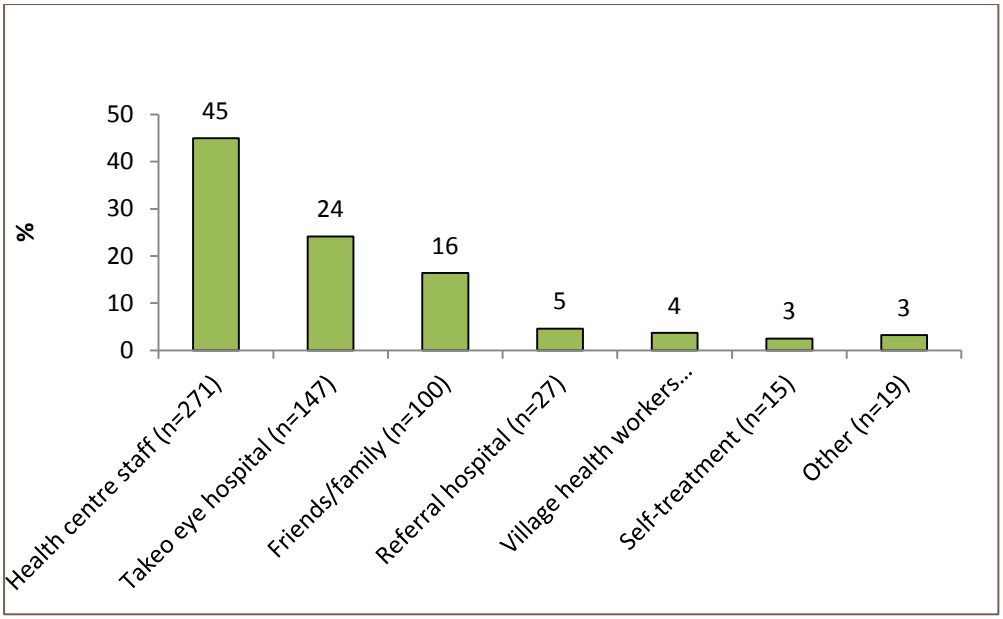

Figure 23. Service that can provide the best treatment for children's eye problems (8 missing).

Key Findings:

- For children's eye problems, health centre staff, treatment at home and Takeo Eye Hospital were the principal sources of eye care.
- Parents believe health centre staff can provide the best treatment for their children followed by Takeo Eye Hospital.

DISCUSSION

To our knowledge this is the first time that a KAP survey of this nature has been conducted in Cambodia and other developing countries. Our study considered three main age groups:

1) ≥50 years
2) 30-49 years
3) Parents with children aged ≥ 5 years

There have been some questions that have arisen from the findings that do not have direct answers. These are listed below. Some questions require further investigation to discover better informed answers.

RESPONDENTS AND GENDER DIFFERENCES

According to the Bhaktapur eye study regarding prevention of traumatic corneal ulcer in Nepal, India, Bhutan and Myanmar, there are more male than female participants affected by eye injuries. In Cambodia we had more female than male patients which could be explained now by the higher proportion of female farmers. Injuries are higher during the rice harvest time.

KNOWLEDGE OF DISEASES

Reported knowledge of main diseases shows a similar understanding as reported in RAAB 2007.

The knowledge about refractive error (blurry vision) (66% = 2/3) is still much higher than about the other diseases being mentioned, which suggests that there is some level of "knowledge" about the main important reason for visual impairment.

Generally cataract is known, but the conclusion that cataract leads to blindness is lacking, but less than 20% reported that cataract could be best treated by surgery.

USE OF TRADITIONAL MEDICINE

A greater use of traditional medicine was reported in Dunkeo district. This seems to be an unusual response since this is where the Takeo Eye Hospital is located. Further exploration is needed to understand this result.

SOURCES OF INFORMATION AND TRUSTED INFORMATION

Relatives and family members were reported as the main source of information about eye health. However, health centre staff and radio were reported as the most trusted source of information. The utilisation of radio and health centre staff should be used to promote eye health messages.

HEALTH CHECK

A higher proportion of males reported never having a health check compared to females. This is not an unexpected result. In industrialised countries, the percentage of male participants in, for instance, cancer screening is much lower than female participants.

GIRLS AND BOYS AND TREATMENT

More girls are treated at home and fewer girls are treated at TEH. This could be because of the general attitude towards girls, or because boys experience more from severe eye-injuries. For example at Takeo Eye Hospital there are more boys than girls with severe penetrating eye-injuries.

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