



**REPORT
RAPID ASSESSMENT OF AVOIDABLE BLINDNESS SURVEY
IN MIDLANDS PROVINCE, ZIMBABWE
May – June 2021**



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Table of Contents

Executive summary	4
Introduction	6
RAAB survey aims and objectives	7
Methodology.....	7
Preparation	7
Sample size and selection of clusters.....	8
Ethics approval.....	8
Training	8
Data collection and analysis.....	9
Results.....	10
Limitations and assumptions	14
Discussion.....	15
Conclusion.....	16
References	19

LIST OF ACRONYMS AND DEFINITIONS

BCVA	Best corrected visual acuity (using pinhole)
Blind	Visual Acuity <3/60 with available correction
CBM	Christian Blind Mission
CEHI	Community Eye Health Institute, University of Cape Town, South Africa
CI	Confidence interval, usually with 95% probability
CSC	Cataract Surgical Coverage (% of people who had surgery of total needing surgery)
CSR	Cataract surgical rate (number of cataract surgeries per million population p.a.)
DR	Diabetic Retinopathy
EA	Enumeration area(s)
FLV	Functional low vision BCVA < 6/18 to perception of light in the better eye
IAPB	International Agency for the Prevention of Blindness
IOL	Intra-ocular lens
MVI	Moderate visual impairment – presenting VA <6/18 – 6/60
ZIMSTATS	Zimbabwe Bureau of Statistics
PCO	Posterior capsular opacification
PVA	Presenting Visual Acuity
RAAB	Rapid Assessment of Avoidable Blindness (survey)
RACSS	Rapid Assessment of Cataract Surgical Services (survey)
CfB	Zimbabwe Council for the Blind
SVI	Severe visual impairment – presenting VA <6/60 but > 3/60
UCT	University of Cape Town, Republic of South Africa
URE	Uncorrected Refractive error
VA	Visual Acuity
WHO	World Health Organization

Eye care programme	The collection of structures, people and activities that has a common goal to provide eye health care services to the population of a geopolitical entity
VISION 2020 targets	Disease control, human resource and infrastructural development targets set by the IAPB's campaign to eliminate avoidable blindness by the year 2020
UCT-CEHI	The Community Eye Health Institute of the University of Cape Town, South Africa

Executive summary

A rapid assessment of avoidable blindness (RAAB) was conducted in Midlands Province, Zimbabwe from May to June 2021, with the aim to assess the current situation on blindness and visual impairment in the province. This population-based survey was organised by the Council for the Blind (Zimbabwe) through funding from CBM, in collaboration with the Ministry of Health and Childcare and Peek Vision. Training, data collection support and monitoring and reportage was provided by Dr Deon Minnies, a certified RAAB trainer and Director of the Community Eye Health Institute, University of Cape Town, South Africa.

The standard RAAB methodology was used. The proportion of the population aged 50 years or above was 10.75%, representing a total of 173063 people. A sample size was calculated using an estimated prevalence of blindness of $3.5\% \pm 0.75\%$ with 95% confidence interval based on previous RAAB findings in the region, producing a sample size of 3794 or 76 clusters of 50 people aged 50 years or above. The RAAB application was used to select the clusters with probability proportional to size.

Four examination teams, comprised of ophthalmic nurses, collected the data. They were supported and monitored by the Principal Investigators, two ophthalmologists. Inhabitants of selected clusters who were 50 years and above were identified, using compact segment sampling, and enrolled into the study. Measurement of visual acuity and eye examinations were conducted at the respondents' homes. In the prevailing Covid-19 situation, strict adherence to the relevant provisions in the protocol were observed. Data was collected using RAAB7, an application for automated and algorithm-supported mobile data collection and analysis, operated through online access with an secure-accessed smart phone connection. The examination teams received training in the use of this, and the posting of the records to the database.

A total of 3636 people aged 50 years or above were examined, representing a response rate of 97.6%. The extrapolated magnitude of bilateral blindness with available correction (presenting visual acuity - PVA $<3/60$) in people aged 50 years or above in the better eye is 2.1% (95% confidence interval: 1.5 – 2.7). Untreated cataract is the most common cause of bilateral blindness (PVA $<3/60$ in the better eye) with 55.8%, followed by glaucoma (24.2%) and non-trachomatous corneal opacity (11.6%). A total of 94.7% of bilateral blindness in persons is considered avoidable, 55.8% is treatable (untreated cataract, uncorrected aphakia and refractive error), 13.7% is preventable by primary eye care and 25.3% is preventable by specialised ophthalmic services. Posterior segment diseases account for 29.5% of bilateral blindness.

Half (50.0%) of people in the sample who are blind due to cataract (VA $<3/60$) have been operated on and 50.5% of eyes operated for cataract can see 6/18 or better ("Good outcome") while 29.9% cannot see 6/60 ("Poor outcome") with available correction. Overall, visual outcomes after surgery are below the recommended standards of the WHO.

"Unaware that treatment is available" (46.5%), "Cannot access treatment" (18.6%) and "Fear" (15.1%) are the main reasons why people aged 50 years or above, who are blind due to untreated cataract do not go for surgery.

The blindness prevention activities in Midlands Province are inadequate to address the burden of blindness and visual impairment due to avoidable causes. Cataract is the major cause of blindness and visual impairment and requires intervention on all levels of service provision, as well as community engagement.

There is an urgent need to strengthen eye care services in the province, especially in relation to improving the quality and effective coverage of cataract surgery, diagnosing and treating posterior segment conditions and preventing vision loss due corneal opacification. This will require capacitation that matches the current gaps in the provincial eye care programme: training of staff, setting up adequately equipped eye surgical units (with appropriate staff, equipment and the necessary consumables) and ability to deliver primary eye care services on district and facility level.

Some of the following recommendations can be considered for implementation

1. As cataract surgery is still the main strategy to reduce avoidable blindness, there is a need to further strengthen the capacity of the provincial and district cataract surgical services. Increasing opportunities for remote and rural people to access cataract surgery, (outreach or providing transport) may also help.
2. Surgical technique and sequelae of surgery are the main reasons for poor quality of cataract surgery. Refresher training for surgeons, increasing the surgical workload, review of procedures, closer monitoring, improved case-finding and follow-up may lead to improvement of the visual outcome.
3. Provide training and support for ophthalmic team members based in districts with the intention to sharpen their skills in detection and diagnosis of posterior segment causes of vision loss and provision of primary eye care services.
4. Intensify district, provincial and national eye health promotion to inform people of measures of taking care of their vision and the available sources of service provision, especially in the context of service availability during Covid-19. Awareness-raising strategies should only be implemented once the service is adequately capacitated.
5. Investigate the real impact of the Covid-19 pandemic on the availability and accessibility of eye care services and the ability and willingness of people to demand and take up the service when needed.

Introduction

In most low-and middle-income countries, there is a shortage of accurate and up-to-date data on the prevalence and causes of avoidable blindness and visual impairment to enable health authorities to conduct eye care planning for successful implementation¹.

The Rapid Assessment of Avoidable Blindness (RAAB) is a relatively inexpensive, rapid and simple research methodology developed by the International Centre for Eye Health² and is widely used to determine the burden of blindness and visual impairment in health districts.

According to the IAPB Vision Atlas,⁶ the global prevalence of blindness decreased to 36 million people in 2015, with cataract (34%) and uncorrected refractive error (20%) combined responsible for over half of all blindness. Almost 217 million people had moderate and severe visual impairment, excluding 1.1 billion people with presbyopia needing reading glasses. Still, 89% of visually impaired people live in low- and middle-income countries and more than 75% of visual impairment is avoidable.

The 12 RAAB surveys conducted in Southern Africa between 2009 and 2017 show that the blindness prevalence in people aged 50 years or above ranged from 1.3% to 7.1%, with a median of 3.5%. Cataract surgical coverage ranged from 10% to 96% (median 49.5%) in operated eyes in sample with best correction. Posterior segment disease caused a median of 23.36% (range 15.9 – 67.6%) of blindness.⁵

Blindness & visual impairment in Zimbabwe

There had been three RAABs conducted in Zimbabwe before, as summarised below. The expectation was to determine the blindness characteristics of a province which is unsupported by funding from international non-governmental organisations.

Table 1: Previous RAABs in Zimbabwe

YEAR	2016	2019	2019
STATE	Manicaland	Masvingo	Matabeleland South
Blind - PVA <3/60: (% in 50+):	3.7%	3.60%	4.30%
Cataract (% of all blindness):	67.2%	65.2%	63.5%
Posterior Segment Disease:	25.0%	22.0%	
Cataract Surgical Coverage (%):	50.0%	53.00%	50.80%
Outcome:	56.0%	60.0%	57.6%

Midlands Province is one of eight administrative provinces and two cities with provincial status in Zimbabwe and is made up of 8 districts, some of which are divided into rural / urban or north / south. Approximately 75% of the population reside in rural areas. Almost half of the population (43%) belong to the 0–15-year age group. In the age group of 50 years and above, there is 138 females for every 100 males. People aged 50 years or above

make up 10.75% of the total provincial population. See district population details in *Appendix A*.

Inhabitants of the province mainly use public health care services. See *Appendix B: Eye care in Midlands*. Most of the eye care services are provided at the main ophthalmic surgical centre at the Provincial Hospital in Gweru, the provincial capital. Under the leadership of the provincial ophthalmologist, and with support from CBM and Zimbabwe Council for the Blind, the eye care team provides comprehensive eye service to the entire province.

Cataract, refractive error, and posterior segment conditions are the most common conditions treated in the province. In 2019, the provincial cataract surgical rate was far below 500. Just over 500 pairs of spectacles were dispensed in the same year. While most surgeries took place at the provincial hospital, regular screening and surgical outreaches take place throughout the province.

For the purpose of supporting the development of eye care services in the province, a rapid assessment of avoidable blindness (RAAB) was conducted in Midlands Province, Zimbabwe from May to June 2021. This population-based survey was organised by the Council for the Blind (Zimbabwe) through funding from CBM, in collaboration with the Ministry of Health and Childcare and Peek Vision. Training, data collection support and monitoring and reportage was provided by Dr Deon Minnies, a certified RAAB trainer and Director of the Community Eye Health Institute, University of Cape Town, South Africa.

RAAB survey aims and objectives

The aim of the RAAB survey is to obtain baseline data on the prevalence and causes of blindness and other disabilities in order to plan, implement and monitor district-wide eye care activities in Midlands Province, Zimbabwe.

Objectives include:

- To estimate the prevalence and causes of avoidable blindness and visual impairment in people aged 50 and above
- To assess cataract surgical coverage
- To identify the main barriers to the uptake of cataract surgery
- To measure visual outcome after cataract surgery, and
- To assess the level of self-perceived disabilities in the same population.

Methodology

The standard RAAB methodology was used.

Preparation

Pre-training work, accomplished by email communication included 1) developing the research proposal, 2) obtaining ethical approval, 3) mobilising the ophthalmic team for participation in the training, 4) procuring the equipment and supplies needed for the

training and data collection and offering refresher training for clinical practice to the ophthalmic nurses who would become the fieldworkers in the survey. The project coordinator at Zimbabwe Council for the Blind was responsible for organising the administrative and financial matters related to the study, including the support of the training and fieldwork logistics.

In aid of greater consideration for team empowerment and participation, and to ensure quality of data collection, a template checklist provided by LSHTM was modified to extend into the logistical aspects of the RAAB survey processes. This was used as a working document to check progress. See *Appendix C: Checklist for planning and progress*.

Sample size and selection of clusters

The last census was done in 2012. The proportion of the population aged 50 years or above was 10.75%, representing a total of 173063 people. A sample size was calculated using an estimated prevalence of blindness of $3.5\% \pm 0.75\%$ with 95% confidence interval based on previous RAAB findings in the region, producing a sample size of 3794 or 76 clusters of 50 people aged 50 years or above. The sample was selected using simple random cluster sampling through probability proportionate to size, using the RAAB software.

Ethics approval

Before commencement of the training and data collection, ethical approval was obtained from the Medical Research Council of Zimbabwe, after review of a protocol submitted by the Principal Investigator. The survey adhered to the provisions of this.

Special considerations for data administration (cloud-based storage and access), financial arrangements and reportage were dealt with between MOHCC, CBM (the funding agency) and UCT-CEHI through a Terms of Reference and consultancy contract.

Training

A total of twelve (12) staff completed a five-day training programme (see *Appendix D*) for a RAAB survey in Midlands Province, Zimbabwe from 31 May – 4 Jun 2021, facilitated by Dr Minnies, a certified RAAB trainer. Six teams attended the training. These included four examination teams, each comprising of two ophthalmic nurses, a cluster informer team (comprised of two ophthalmic nurses) and a “gold standard” team, comprised of two ophthalmologists, Dr Macheke and Dr Mashaka (the Principal Investigators).

This training covered the key knowledge and skills aspects required for collecting data on blindness and visual impairment in the province. These included standardized definitions in the survey protocol, compact segment sampling, enrolment and examination procedures, the method of obtaining informed consent and recording of examination data. Several methods of achieving validity were incorporated into the training, data collection and analysis procedures. See *Appendix E* for further information.

Inter-observer variation was determined using the RAAB guidelines and a “gold standard” examiner was used to compare with the different survey teams the measurements of visual acuity in each eye, visual acuity with pinhole in each eye, examination of the lens in each eye, and the main cause of visual acuity $< 6/12$ in each eye and in the (better eye) person.

Data collection and analysis

Data was collected using RAAB7, an application for automated and algorithm-supported mobile data collection and analysis, operated through online access with an secure-accessed smart phone connection. The examination teams received training in the use of this, and the posting of the records to the database. In the prevailing Covid-19 situation, strict adherence to the relevant provisions in the protocol were observed.

Inhabitants of sampled clusters who were selected by the compact segment sampling method and who were 50 years and above were enrolled into the study. Interviews were conducted in the respondents' homes and examinations done under low illumination for posterior segment examination. Examination procedures included measurement of visual acuity (VA) with available correction and pinhole correction, assessment of lens status in each eye with direct ophthalmoscope and examination of the dilated pupil with direct ophthalmoscope if $VA < 6/12$ and not due to cataract, corneal scar or refractive error.

At the end of each participant encounter, the set of Washington Group of Questions (WGQ) on disability was asked. The RAAB app made provision for the capturing of these. (*Appendix F*)

Data collected was entered directly into the RAAB7 application, which in turn was uploaded onto the Peek Vision encrypted server. This included the general information such as cluster number, respondent number, name, age, sex, and examination status of the respondent, and whether they used spectacles, as well as the examination results. The application contains validation rules which ensures that no illogical options against variables are captured.

Throughout the data collection period, the RAAB trainer perused the RAAB survey dashboard on a daily basis, checking the progress and reviewing the data for errors. In consultation with the RAAB trainer, the RAAB survey coordinator provided updates to the teams and advised on corrective action where indicated. The PI's performed in-field monitoring visits and obtained information about the data collection progress from the teams. See *Appendix G* for further details about monitoring procedures.

Following completion of data collection, the data was cleaned and prepared for analysis. The RAAB software allows for automatic analysis of the data and generation of a summary report, complete with interpretive comments, tables and figures. The RAAB7 Export utility was used to generate the RAAB reports, after input of the relevant population data.

No protocol violations were reported.

Results

The fieldwork was carried out between 6 and 28 June 2021. The RAAB7 application was used on smartphones for data collection. The following is a summary of the key findings¹. Further details and graphic illustrations can be seen in the software-generated reports, see the appendices. The findings of the WGQ survey will be reported separately.

Response rate and demographic representation in the sample

Of the 3724 people aged 50 years or above who were enumerated, a total of 3636 people aged 50 years or above were examined, representing a response rate of 97.6%. Twenty were not available, 66 refused and 2 were incapable.

The sample comprised 1 578 males and 2146 females, 42.4% and 57.6% of the sample respectively, which is comparable to the 42.0%: 58.0% male: female proportions in the general population.

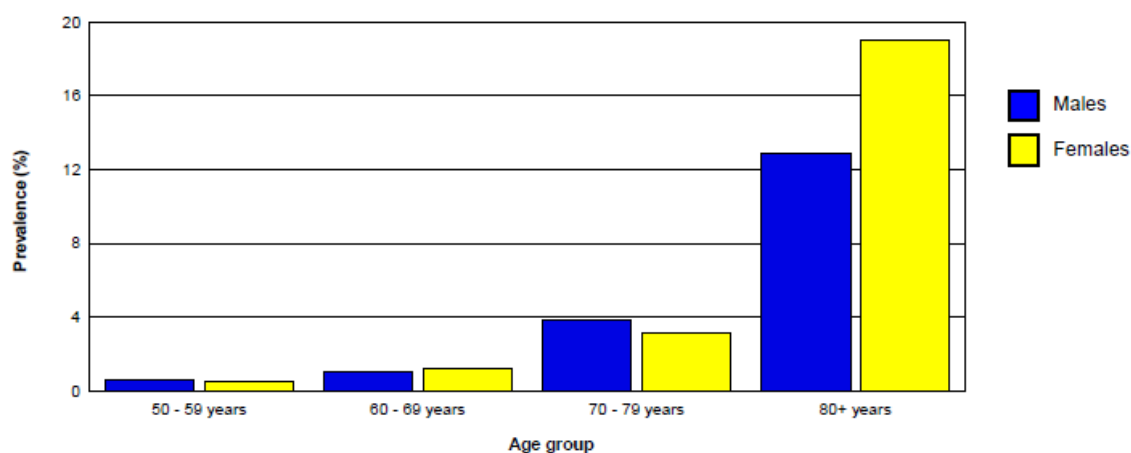
See *Summary report* and *Age and sex adjusted prevalence and estimated numbers* report for detailed tables and figures.

Blindness and visual impairment in the sample

The sample prevalence of bilateral blindness with available correction (presenting visual acuity: PVA <3/60) in people aged 50 years or above in the better eye is 2.6% (95% confidence interval: 2.0 – 3.2); 2.5% in males and 2.7% in females. The prevalence of bilateral severe visual impairment (SVI) is 1.3% (1.2 – 1.3) and bilateral moderate visual impairment (MVI) is 5.8% (5.0 – 6.5). The prevalence of functional low vision, requiring low vision services, is 2.0% (1.5 – 2.5).

As can be seen from the figure below, blindness prevalence is associated with higher age and female sex.

Figure 1: Blindness prevalence by age and sex (with available correction)



¹ Where applicable, population projection adjustments are required.

See *Indicators by sex and by age group – findings from sample* report for more detailed tables and figures.

Age and sex adjusted blindness and visual impairment

An estimated 3603 people aged 50 years or above are bilaterally blind, representing a blindness prevalence for the province of 2.1% (1.5 – 2.7). A further 858 people aged 50 years or above are severely visually impaired and another 4060 people have moderate visual impairment. Among them 1463 people aged 50 years or above have functional low vision, requiring low vision services.

See *Age and sex adjusted prevalence and estimated numbers* report for detailed tables and figures.

Causes of bilateral blindness and visual impairment

In people aged 50 years or above, untreated cataract is the most common cause of bilateral blindness (PVA<3/60 in the better eye) with 55.8%, followed by glaucoma (24.2%) and non-trachomatous corneal opacity (11.6%). Untreated cataract (59.6%) is also the main cause of bilateral severe visual impairment, followed by glaucoma (17.0%) and uncorrected refractive error (8.5%). Uncorrected refractive error (12.9%) is the second most common cause (after untreated cataract, 64.5%) of bilateral moderate visual impairment.

A total of 94.7% of bilateral blindness in persons is considered avoidable, 55.8% is treatable (untreated cataract, uncorrected aphakia and refractive error), 13.7% is preventable by primary eye care and 25.3% is preventable by specialised ophthalmic services. Posterior segment diseases account for 29.5% of bilateral blindness.

Avoidable blindness could be most effectively treated with cataract surgery (55.8% of blindness) and prevented through provision of ophthalmic services and providing primary eye care services (13.7% and 25.3% of the causes of blindness respectively).

See *Summary* report for detailed tables and figures.

Vision loss due to cataract

The age and sex adjusted prevalence of bilateral blindness due to cataract is 1.0% (0.6% - 1.4%), which is an estimated 1680 people in Midlands Province. This represents approximately 43.7% of those who are blind: 649 males (0.4%) and 1301 females (0.6%). There are an estimated 10285 eyes blind due to cataract in the province.

With an indication for cataract surgery of best corrected visual acuity (BCVA) of <6/60 an estimated 4211 people aged 50 years or above require surgery in both eyes and an estimated 23610 eyes would require surgery.

See *Age and sex adjusted prevalence and estimated numbers* report for detailed tables and figures.

Cataract Surgical Coverage

The cataract surgical coverage (% of people who are blind due to cataract who have been operated on, CSC) in the sample is 50.0%, with an adjusted rate of 53.6%, 59.1% of males and 49.3% of females. The CSC for people with VA<6/60 is 43.8% (males 51.4% and females 38.3%) and for people with VA<6/18 is 22.7% (27.3% males and 19.3% females).

Further, only 28.9% of eyes blind due to cataract (VA<3/60) have been operated on, 35.0% for males and 24.5% for females. The coverage for eyes with VA<6/60 is 24.1% (males 29.5% and females 20.0%) and eyes with VA<6/18 is 14.7% (17.5% and 12.5% respectively).

The effective CSC in the sample is 34.9% in persons blind due to cataract (VA<3/60), 43.6% in males and 27.7% in females. More than 93.8% of operated eyes were of people aged 60 years and older, with males comprising 98.1% and females 88.6%.

See *Age and sex adjusted prevalence and estimated numbers* report for detailed tables and figures.

Visual outcome after cataract surgery (See “Visual outcome after cataract surgery”)

A total of 50.5% of eyes operated for cataract can see 6/18 or better (“Good outcome”) and 29.9% cannot see 6/60 (“Poor outcome”) with available correction. With best correction (pinhole VA), results improve to 57.7% “Good outcome” but the “Poor outcome” only improves slightly to 28.9%. 92.8% of the operated eyes had an IOL implanted, with 42.9% of those not receiving an IOL implant returning a “Good outcome” visual acuity!

Table 2: Visual outcome after cataract surgery: by place of surgery

	Gov. Hosp.		Vol. Hosp.		Priv. Hosp.		Eye camp		Total	
	Eyes	%	Eyes	%	Eyes	%	Eyes	%	Eyes	%
Very good: can see 6/12	9	45.0	14	56.0	12	48.0	9	33.3	44	45.4
Good: can see 6/18	0	0.0	3	12.0	1	4.0	1	3.7	5	5.2
Borderline: can see 6/60	4	20.0	3	12.0	4	16.0	8	29.6	19	19.6
Poor: cannot see 6/60	7	35.0	5	20.0	8	32.0	9	33.3	29	29.9
Total	20	100.0	25	100.0	25	100.0	27	100.0	97	100.0

Table 3: Post-operative VA and causes of poor and borderline visual outcome

	Selection		Surgery		Spectacles		Sequelae		Can see 6/12		Total	
	Eyes	%	Eyes	%	Eyes	%	Eyes	%	Eyes	%	Eyes	%
Very good: can see 6/12	0	0.0	0	0.0	0	0.0	0	0.0	44	100.0	44	45.4
Good: can see 6/18	1	20.0	1	3.1	2	40.0	1	9.1	0	0.0	5	5.2
Borderline: can see 6/60	1	20.0	11	34.4	2	40.0	5	45.5	0	0.0	19	19.6
Poor: cannot see 6/60	3	60.0	20	62.5	1	20.0	5	45.5	0	0.0	29	29.9
Total	5	100.0	32	100.0	5	100.0	11	100.0	44	100.0	97	100.0

Visual outcome of eyes operated during the last 3 years (65.8% Good; 19.5% Poor) is better compared to those operated 4-6 years ago (58.9% Good; 26.7% Poor). Those operated 7 or more years ago (37.5% Good; 50.0% Poor) showed worst outcome when considering the “Good” parameter. However, when the “Poor” parameter is considered, the outcomes become increasingly worse over these time intervals.

“Surgery” is the most common cause of “Poor” outcomes (69.0% of those operated). “Sequelae”(17.2%) is the second most common cause of poor visual outcomes. Overall, visual outcomes after surgery are below the recommended standards of the WHO.

Place of surgery (See “Visual outcome after cataract surgery”)

In the sample, the cataract surgery is found to have been done almost equally at the Government hospital (20.6%), Charitable hospitals (25.8%), Private hospitals (25.8%) and Outreach camps (27.8%).

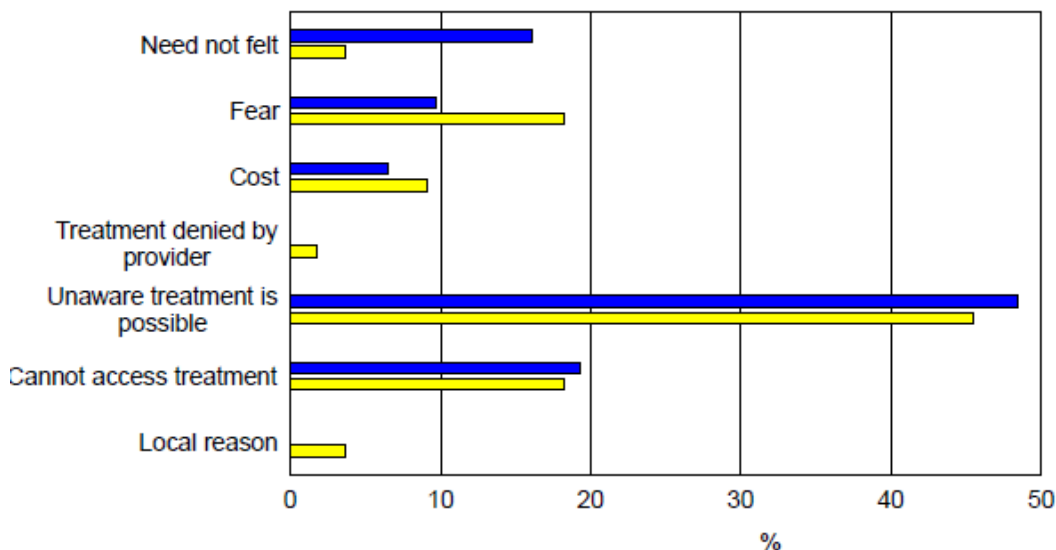
Visual outcome results are reported to be marginally better at Charitable hospitals (68.0% with “Good” outcomes).

Barriers to cataract surgery (See “Reasons why people who are blind...”)

“Unaware that treatment is available” (46.5%), “Cannot access treatment” (18.6%) and “Fear” (15.1%) are the main reasons why people aged 50 years or above, who are blind due to untreated cataract do not go for surgery.

Females are more strongly deterred by “Fear” (18.2%) than males (9.7%). Where “Need not felt” (16.1%) ranked third in males who are bilaterally blind due to untreated cataract and fifth (3.6%) in females similarly affected, “Need not felt” ranked significantly higher (15.7%) in females who are unilaterally blind due to untreated cataract.

Figure 2: Barriers to cataract surgery (Blind or SVI: bilateral)



Refractive errors (See “Sample results – not adjusted”)

The prevalence of total refractive errors is 7.3% (both males and females 7.3%) with 88.6% of these uncorrected refractive error, making up 89.2% in males and 88.2% in females. Uncorrected presbyopia occurs in 98.6% of people aged 50 years or above. Only 10.8% of males and 11.8% of females have corrected refractive error, which converts to a refractive error coverage rate of 11.4%. The corrected presbyopia rate is even lower: 1.4% (males 1.5% and females 1.3%).

Table 4: Spectacle coverage, distance vision and presbyopia

	Males		Females		Total	
	n	%	n	%	n	%
Total refractive errors (n - prev)	111	7.3	153	7.3	264	7.3
Uncorrected RE (n - % unmet need)	99	89.2	135	88.2	234	88.6
Corrected RE (n - % met need = coverage)	12	10.8	18	11.8	30	11.4
Uncorrected presbyopia (n - prev)	1,507	98.5	2,079	98.7	3,586	98.6
Corrected presbyopia (n - % coverage reading glass)	23	1.5	27	1.3	50	1.4

Posterior segment causes (See “Sample results – not adjusted”)

Posterior segment conditions cause 29.5% of blindness, 23.4% of severe visual impairment and 18.7% of moderate visual impairment. Glaucoma is the most common cause of blindness in persons (24.2%; 28.9% in males and 21.1% in females) and in eyes (17.2%). Other posterior segment diseases are the cause of 5.3% of blindness (2.6% in males, 7.0% in females) and 5.8% in eyes. Diabetic retinopathy is the cause of blindness in 0.9% of eyes.

Functional low vision (FLV) requiring low vision services (See “Summary report”)

The extrapolated magnitude of functional low vision (BCVA<3/18 to PL+), not caused by cataract, refractive error, uncorrected aphakia or pseudophakia with posterior capsular opacity) and requiring low vision services is 1.9% (1.4 – 2.4). The most common cause of FLV is glaucoma (53.1%) followed by non-trachomatous corneal opacity and other posterior segment disease (both 12.5%).

An estimated 3241 people aged 50 years or above (1 463 males and 1777 females) require low vision services or training. The prevalence of FLV increases with age. There is no significant difference between the occurrence in males and females.

The projected all-ages prevalence of blindness in Midlands Province is 0.24%.

Limitations and assumptions

The findings should be read in conjunction with the known limitations of the RAAB methodology, e.g. that it focuses on a defined segment of the population, the emphasis is on avoidable blindness and very basic equipment are used to arrive at diagnostic decisions.

Notwithstanding the measures applied to ensure validity, especially in relation to enumeration, examination and data capturing, the diagnostic abilities of the teams are also key determinants of validity. Support and monitoring of the work of the examination team were considered to add value to the quality of data collected.

The barriers to cataract surgery reported by people who have vision loss due to cataract may be unreliable due to various possible errors that can occur, both from the end of the examination team and the participant.

The restrictions posed on people’s movements due to the prevailing Covid-19 pandemic may or may not have influenced the findings.

Discussion

A rapid assessment of avoidable blindness (RAAB) was conducted in Midlands Province, Zimbabwe from May to June 2021, with the aim to assess the current situation on blindness and visual impairment in the province.

The response rate of 97.6% was lower than in previous RAABs in Zimbabwe, with “fear of Covid-19” being the most common reason for refusal to be examined. The male : female ratio in the sample compared well with that of the general population, and the proportional representation of males and females according to age groups followed similar patterns.

The sample prevalence of bilateral blindness is 2.6%, lower than expected frequency range of 2.75% – 4.25%. The age and sex adjusted blindness prevalence of 2.1% is lower than in the other three provinces. As in these provinces, the prevalence of blindness and visual impairment increases strongly with age and in general, females are more adversely affected than males.

Untreated cataract is the most common cause of bilateral blindness, severe, and moderate visual impairment. Despite the low cataract surgery output reported, the cataract surgical coverage of 50% is similar to that of the other three provinces. This means that cataract surgical services are poorly implemented and accessed in Midlands province. This may result in people having their surgeries done in other provinces or in the private sector, as indicated by the location findings.

The same can be said for the quality of vision outcomes after cataract surgery, which are generally, below the recommended standards of the World Health Organisation. The most common causes of “Poor” outcomes are surgical skills and long-term complications after surgery. It is obvious that there is a need for sharpening of skills in cataract surgery and the provision of primary health care to operated patients. The main reasons why people who are blind due to untreated cataract do not go for surgery include lack of awareness, lack of access and fear. Large-scale capacitation of eye care services is needed before the launch of awareness campaigns. The current Covid-19 pandemic may present unique challenges, which require wide consultation and assistance from government, the NGO sector and partners in the education and research fields.

Glaucoma is the second and non-trachomatous corneal opacity is the third most common cause of bilateral blindness. The pattern is similar for severe and moderate visual impairment. As only a small proportion of visual loss is attributable to trachoma in a non-endemic survey area, the underlying reasons for the prominence of corneal opacity not due to trachoma should be further investigated. Uncorrected refractive error is the second most common cause of bilateral moderate visual impairment. As in the other provinces, diabetic retinopathy is the cause of less than 1% of blindness in eyes.

Almost 95% of bilateral blindness is avoidable, with over half treatable through cataract surgery. Improved provision of ophthalmic services, primary eye care services and refractive error correction could deal with the majority of the causes of blindness.

Conclusion

The blindness prevention activities in Midlands Province are inadequate to address the burden of blindness and visual impairment due to avoidable causes. Cataract is the major cause of blindness and visual impairment and requires intervention on all levels of service provision, as well as community engagement.

There is an urgent need to strengthen eye care services in the province, especially in relation to improving the quality and effective coverage of cataract surgery, diagnosing and treating posterior segment conditions and preventing vision loss due to corneal opacification. This will require capacitation that matches the current gaps in the provincial eye care programme: training of staff, setting up adequately equipped eye surgical units (with appropriate staff, equipment and the necessary consumables) and ability to deliver primary eye care services on district level.

With four RAABs now having been done in Zimbabwe, the burden of vision loss and the service structure is becoming ever clearer. Surely this will enable eye care strategists to plan and implement improved eye services on facility, district, and provincial levels.

Here is a summary of what can be considered for implementation. Note that implementing any of the recommendations have cost implications. Attempts to act on these should be inclusive and involve all the key stakeholders of the Midlands Province eye care programme.

1. As cataract surgery is still the main strategy to reduce avoidable blindness, there is a need to further strengthen the capacity of the provincial and district cataract surgical services. Increasing opportunities for remote and rural people to access cataract surgery, (outreach or providing transport) may also help.
2. Surgical technique and sequelae of surgery are the main reasons for poor quality of cataract surgery. Refresher training for surgeons, increasing the surgical workload, review of procedures, closer monitoring, improved case-finding and follow-up may lead to improvement of the visual outcome. It would help to conduct post-operative visual acuities on outreach to identify and treat poor outcomes due to surgical complications.
3. Provide training and support for ophthalmic team members based in districts with the intention to sharpen their skills in detection and diagnosis of posterior segment causes of vision loss and provision of primary eye care services.
4. Intensify district, provincial and national eye health promotion to inform people of measures of taking care of their vision and the available sources of service provision, especially in the context of service availability during Covid-19. Awareness-raising strategies should only be implemented once the service is adequately capacitated.

5. Investigate the real impact of the Covid-19 pandemic on the availability and accessibility of eye care services and the ability and willingness of people to demand and take up the service when needed.

<END OF REPORT>

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Attachments: Appendices A-J & RAAB reports	

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