SJ Ophthalmology Africa
Vol.2 No.7 (2025): July 2025 Issue
https://doi.org/10.51168/nsj3e177
Original Article

Prevalence and factors associated with trichiasis among patients receiving eye health care at Jinja regional referral hospital. A cross-sectional study.

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ABSTRACT

Background
Trichiasis is the misalignment of eyelashes that rub against the eyeball. The study aims to assess the prevalence and factors associated with trichiasis among patients receiving eye health care at Jinja Regional Referral Hospital.

Methodology
This was a cross-sectional descriptive study design employing quantitative methods of data collection. A purposive sampling technique was used to obtain 35 respondents, and included all ocular patients/caretakers at the eye clinic.

Results
In the study,51.1% of the respondents were female while 42.9 were male. 14.3% were civil servants, 28.6 % farmers, and 57.1% had other occupations. Eastern Uganda had the highest prevalence 43% of trichiasis, while the western region had the least prevalence, 8%. Environmental factors were the leading factor associated with trichiasis (54%) compared to sex, which was the least common factor with 6%. Water scarcity, poor sanitation, lack of latrines, and overpopulation were the environmental factors associated with trichiasis. Water scarcity (34.3%) was the leading environmental factor associated with trichiasis, as compared to overpopulation with 11.4%. Trichiasis was common among patients aged between 61-80 (31.4%) and lowest in patients aged between 21-30 (11.4%).

Conclusion
The prevalence of trichiasis is high in patients from the Eastern region. The Leading Environmental factors associated with trichiasis were poor sanitation and water scarcity. Surgical intervention was the most commonly used management of trichiasis among patients receiving eye health care at JRRH.

Recommendation
More emphasis should be put on the Eastern and Northern regions by the government as it sets strategies to eliminate trichiasis by setting up more health centers and organizations to fight trichiasis in the shortest time possible.

Keywords: *Trichiasis, Tarsal Lid Rotation, Epilation, Jinja regional referral hospital*
Submitted: 2025-01-07 **Accepted:** 2025-03-14 **Published:** 2025-07-08

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BACKGROUND.

Trichiasis is the misalignment of eyelashes that rub against the eyeball. In people with Trichiasis, the eye becomes red and irritated, feels as if something is in it (foreign body sensation), and develops tearing, sensitivity, and sometimes pain when exposed to light. If the condition persists, scarring of the cornea occurs and affects vision (James Garrity 2022). Trichiasis is present when one or more eyelashes touch the eye. Uncorrected, it can cause blindness (Flueckiger RM et al, 2016). Globally, a cross-sectional study that was carried out in different countries on the global burden of Trichiasis showed that the global trichiasis burden in 2016 was 2.8 million people, 61% of whom live in Sub-Saharan Africa (Flueckiger RM et al, 2016).

In Africa estimated 129.4 million people living Africa were found to have trachomatous trichiasis endemic, with the highest prevalence of active trachoma and trichiasis in the Sahel area of West Africa and the Savannah areas of East and Central Africa (JL Smith et al, 2013). Another research which was carried out in southern Ethiopia, shows that: Out of 3850 people who were screened, 104 cases were found to have trichiasis (Wondimu, 2003).

In Uganda, the study that was carried out on the baseline mapping of trachoma shows that evaluation unit-level

trichiasis prevalence ranged from 0.01% to 0.81% (Gilbert Baayenda et al, 2018). Another study carried out in refugee settlements shows that the prevalence of trachomatous trichiasis (TT) unknown to the health system in ≥15-year-olds was<0.2% in 5 out of 11 EUs surveyed and >= 0.2% in the remaining 6 EUs (Gilbert Baayenda et al, 2021). The study aims to assess the prevalence and factors associated with trichiasis among patients receiving eye health care at Jinja Regional Referral Hospital.

METHODOLOGY

Study design

This was a cross-sectional descriptive study design employing quantitative methods of data collection. The study design was selected because it takes a short period during data collection.

Study area

The study was carried out at the eye care unit of Jinja Regional Referral Hospital, located in eastern Uganda. It is located on Baxi Road, not far from the source of the Nile. It's also about 50 meters from Jinja city center and 80km from Kampala Capital city.

Study setting

The hospital serves several clients from neighboring districts like Iganga, Kamuli, and Mayuge, among others. Among the services provided include a major outpatient department where patients are examined and treated, a laboratory department that conducts Human Immune - deficiency Virus (HIV) testing, blood slides for malaria parasites, and other microbiological tests; the eye care department has two areas, which include the eye clinic and the eye ward. The palliative care unit located near the OPD offers palliative care services to patients, especially those suffering from cancer, HIV, and Sickle Cell. Jinja Regional Referral Hospital has 15 wards, which include the surgical, female medical, male medical, maternity, Neonatal Intensive Care Unit, postnatal, gynecological, Special Care Unit, eye ward, urological, Grade A, Grade A' Annex, tuberculosis, psychiatric, and children's wards.

Study population

The study population included all ocular patients/caretakers at the eye clinic at Jinja Regional Referral Hospital.

Sample size determination.

The sample size was determined using Button's (1965) formula to calculate the sample size.
S=GR/O
Where S=Sample Size
G=Number of people interviewed per day
R=Maximum number of days for data collection
O=Maximum time the interviewer spends on each respondent
There $S=10 \times \frac{7}{0.5} = 35$. Therefore, the sample size was 35.
Thirty-five (35) patients/caretakers were selected and interviewed for the study. A small number of respondents were chosen for easy data collection.

Sampling procedure

A purposive sampling technique was used to select the subjects where only subjects with ocular cases, as well as caretakers, were selected among patients attending eye care services at JRRH.

Independent variables

These included age, marital status, education level, and occupation.

Dependent variables

Prevalence of trichiasis, factors associated with trichiasis, and Management of trichiasis

Research instruments

A questionnaire was formulated under supervision, addressing the research questions. The questionnaire consisted of closed-ended questions, which were used to collect data.

Data collection procedure

Before giving out the questionnaires, the researcher fully explained the questions to the respondents. Questionnaires were used to collect data. Each filled-in questionnaire was checked for accuracy and completeness and kept in a safe place by the researcher. Data was collected for a period of 5 days, as 6 respondents took 20-30 minutes as they were being interviewed daily until the required sample size was obtained.

Data quality control

This was done through pre-visiting, training of research assistants, and pretesting of data.

Pre-testing

The study tool was tested on a few patients attending the eye clinic, and necessary adjustments were made to ensure validity and reliability.

Data management

After collecting the data, it was processed and stored in a personal notebook, computer, and a flash disk as a backup copy.

Data analysis and presentation of results.

After collecting the data, it was manually analyzed through tallying. The results were presented in tables, figures, and statements using the Microsoft Excel computer program.

Ethical consideration

On approval of the research proposal by the school, a letter of introduction was provided by the Principal of the Ophthalmic Clinical Officers Training School, and then it was delivered to the hospital director of Jinja Regional Referral Hospital, who introduced the researcher to the in-charge of the ophthalmic unit. He then introduced the researcher to the respondents to get their consent. The respondents were assured of absolute confidentiality.

RESULTS

Table 1: Socio-demographic data of patients

Respondent's Age	**Frequency(f)**	**Percentage (%)**
21-30	04	11.4
31-40	07	20
41-50	05	14.3
51-60	08	22.9
61-80	11	31.4
Average Age 51.4		
Tribe		
Musoga	20	57.1
Muganda	05	14.3
Munyankole	02	5.7
Mugishu	03	8.6
Mugwere	05	14.3
Sex		
Male	15	42.9
Female	20	57.1
Educational level		
Primary	08	22.9
Secondary	07	20
Tertiary	04	11.4
Others	16	45.7
Marital status		
Married	25	71.4
Unmarried	10	28.6
Occupation		
Student	none	0.0
Civil servant	05	14.3
Farmer	10	28.6
others	20	57.1

Table 1, patients aged between 61 to 80 had the highest percentage of 31.4% compared to patients within the age range of 21-30 who had the lowest percentage of 11.4%. The average age was 51.4

With tribe, it was revealed that Basoga had the highest percentage of patients with trichiasis57.1% compared to Banyonkole with 8.6%.

Based on sex, the study revealed that females had the highest percentage of 57.1% compared with males with 42.9%.

Considering educational levels, those with other educational levels had the highest percentage45.7% compared to those who attended the tertiary level, with 11.4%.

With marital status, the married 71.4% had the highest compared to those who were not married, 28.6%.

Occupation, those with other occupations had the highest percentage of 57.1% compared to students with the lowest percentage of 0.0%

Figure 1: Age distribution in relation to trichiasis.

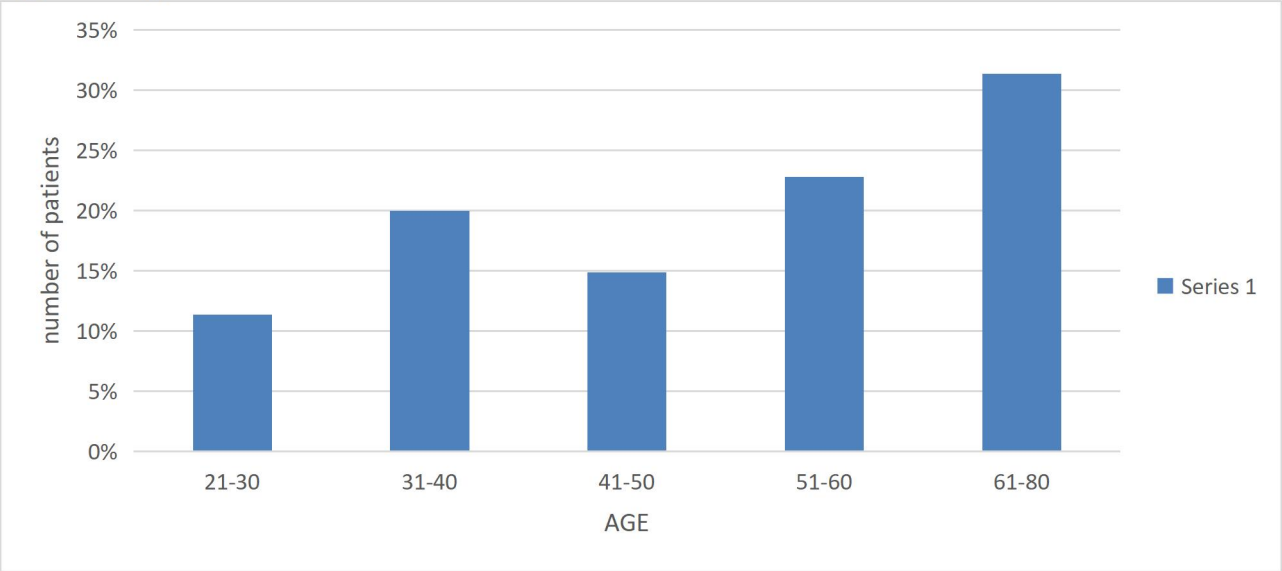


Figure 1 revealed that trichiasis was common among patients aged between 61-80 (31.4%) and lowest in patients with age between 21-30 (11.4%)

Prevalence of trichiasis among patients.

Figure 2: Prevalence of trichiasis in Uganda.

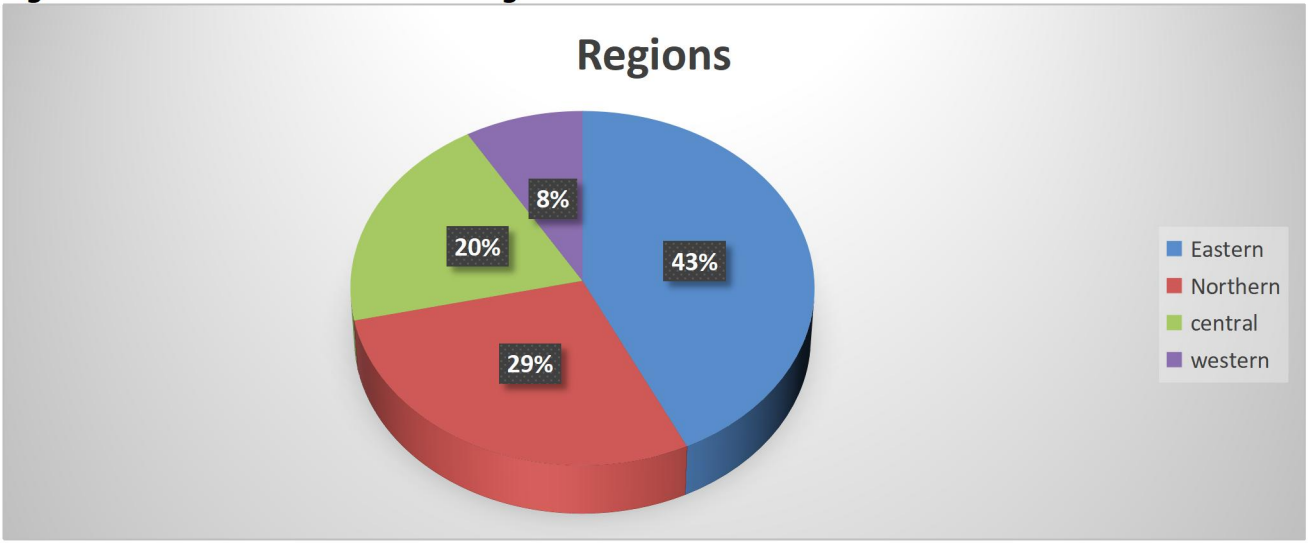


Figure 2 revealed that the eastern Uganda region had the highest prevalence of 43% of trichiasis, compared to the western region had the lowest prevalence of 8%.

Factors associated with trichiasis.

Figure 3: Factors associated with trichiasis.

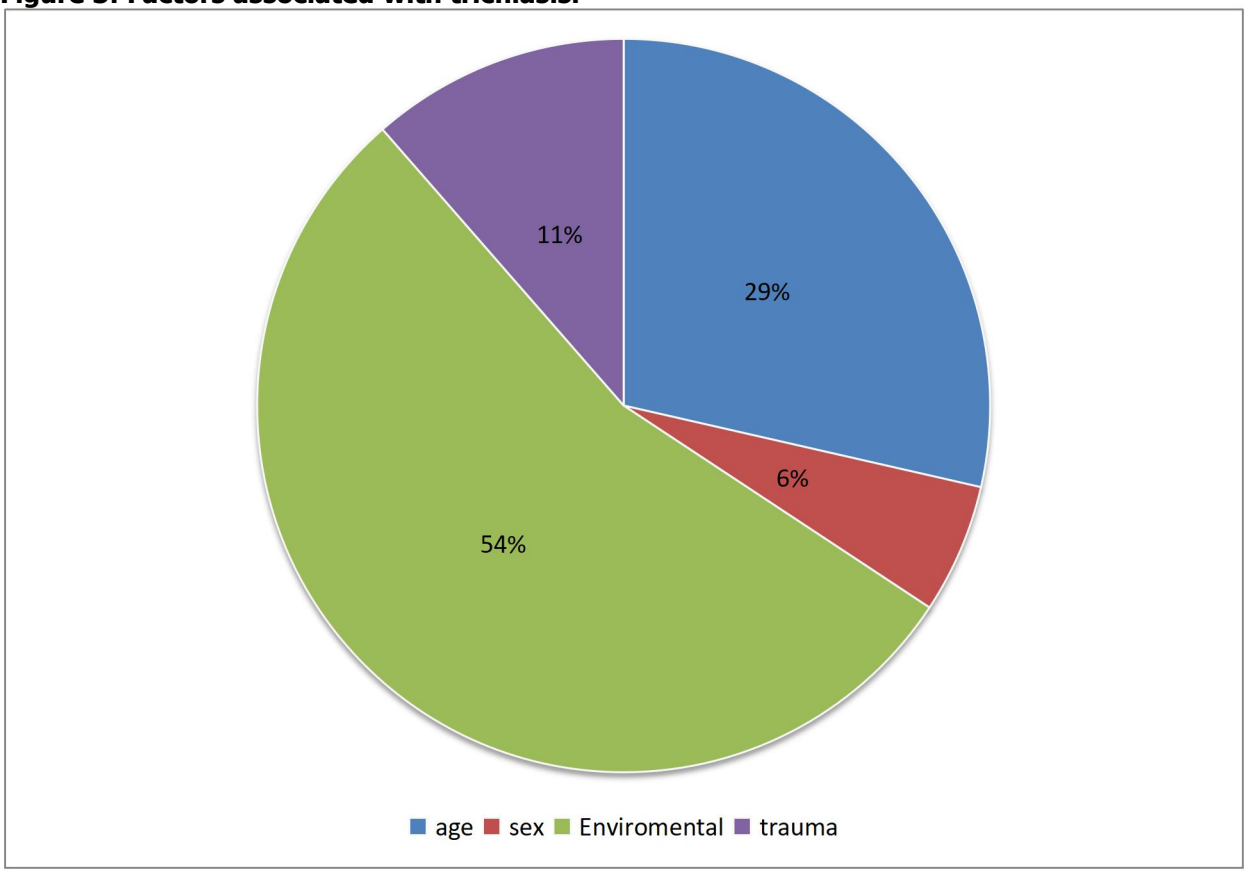


Figure 3 revealed that Environmental factors were the leading factor associated with trichiasis (54%) compared to sex, which was the least associated factor with 6%.

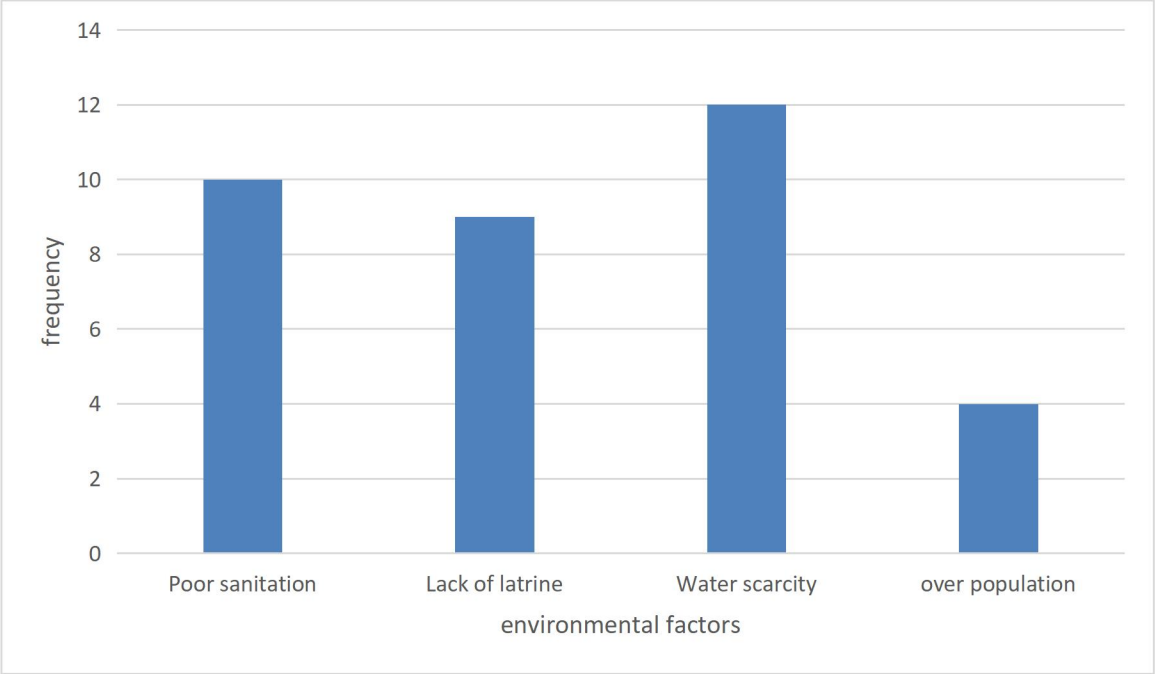
Environmental factors associated with trichiasis.

Table 2: Environmental factors associated with trichiasis.

Factors	Frequency	Percentage
Poor sanitation	10	28.6%
Lack of latrine	9	25.7%
Water scarcity	12	34.3%
overpopulation	04	11.4%

Water scarcity, poor sanitation, lack of latrines, and overpopulation were the environmental factors associated with trichiasis.

Figure 4: Environmental factors associated with trichiasis.



Water scarcity (34.3%) was the leading environmental factor associated with trichiasis, as compared to overpopulation with 11.4%.

DISCUSSION

Prevalence of trichiasis among patients receiving eye health care at JRRH

The study carried out on the prevalence of trichiasis revealed that the Eastern region had the greatest prevalence percentage of 43% followed by the northern region with 29%, the central region with 20%, and lastly, with western region with 8%. This is probably because, in the eastern and northern regions, there are higher cases of trachoma, which is among the leading causes of trichiasis as its complication, compared to the central and western regions. This would also be due to poor sanitation, scarcity of water supply, and overpopulation in these regions, which predispose people to get trichiasis. This finding agrees with research carried out in Uganda on completing the mapping of trachoma in Uganda (Baayenda et al,2018).

Factors associated with trichiasis among patients

The study revealed that environmental factors had the greatest percentage of 54% followed by age 29% trauma 11% then sex of 6%. These findings indicate that environmental factors, age, sex, and trauma are some of the risk factors for trichiasis. This is probably because dirty environments and those with water scarcity encourage the spread of trachoma, which causes trichiasis as a complication. Most of the elderly individuals were found with the condition, probably due to the weakening of the eyelid muscles, leading to entropion, hence trichiasis.
The damage to eyelids from chemical and physical accidents has also probably led to trichiasis. The findings agree with the research that was carried out in Nigeria on the multilevel analysis of trichiasis. (Smith JL, Sivasubramanium et al 2015)

CONCLUSION

The prevalence of trichiasis is high in patients from the Eastern region. The Leading Environmental factors associated with trichiasis were poor sanitation and water scarcity. Surgical intervention was the most commonly used management of trichiasis among patients receiving eye health care at JRRH.

RECOMMENDATION

- More emphasis should be put on the Eastern and Northern regions by the government as they set strategies to eliminate trichiasis by setting up more health centers and organizations to fight trichiasis in the shortest time possible.
- Health education should be done regularly by health workers to emphasize cleanliness,

construction of latrines, proper waste disposal, and also advocate for good water supply in the communities to eliminate some of the causes of trichiasis, like trachoma.

- The government should organize free surgical camps once per month to increase the uptake of surgeries among patients. Communities should also emphasize early health-seeking behaviors for early intervention.

ACKNOWLEDGMENT.

I thank the Almighty God for having guided me throughout this research project. I also appreciate my beloved supervisor, Mrs. Alimwendwa Violet, who has greatly helped me through this project.
I would like to extend my thanks to all my friends and classmates for their continuous support in terms of knowledge, guidance, and encouragement, plus my beloved family for their financial support in this project.

LIST OF ABBREVIATIONS

TT	Trachomatis Trichiasis
JRRH	Jinja Regional Referral Hospital

SOURCE OF FUNDING.

There was no source of funding.

CONFLICT OF INTEREST.

The author did not declare any conflict of interest.

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Lydia Nimukunda is a student with a Diploma in Clinical Ophthalmology at the Ophthalmic Clinical Officers' Training School, Jinja.

Violet Alimwenda is a tutor at the Ophthalmic Clinical Officers' Training School in Jinja.

REFERENCES.

1. Flueckiger RM, Courtright P, Abdala M, Abdou A, Abdulnafea Z, Al-Khatib TK, et al. (2019) The global burden of trichiasis in 2016
2. Gilbert Baayenda, Francis Mugume, Alfred Mubangizi, Patrick Turyaguma, Edridah M. Tukahebwa, Sarah Byakika, Binta Kahwa, Darlson Kusasira, Ana Bakhtiari, Sarah Boyd, Robert Butcher, Anthony W. Solomon, Ben Binagwa, Stella Agunyo, Martin Osilo, Kathryn Crowley, Wangeci Thuo, Mike French, Elizabeth Plunkett, Aryc W. Mosher, Emma M. Harding-Esch & Jeremiah Ngondi (2021): Baseline Prevalence of Trachoma in Refugee Settlements in Uganda
3. Gilbert Baayenda, Francis Mugume, Patrick Turyaguma, Edridah M. Tukahebwa, Ben Binagwa, Ambrose Onapa, Stella Agunyo, Martin K Osilo, Michael D. French, Wangeci Thuo, Lisa A. Rotondo, Kristen Renneker, Rebecca Willis, Ana Bakhtiari, Emma M. Harding-Esch, Anthony W. Solomon & Jeremiah M. Ngondi (2018) Completing Baseline Mapping of Trachoma in Uganda: Results of 14 Population-Based Prevalence Surveys Conducted in 2014 and 2018, Ophthalmic Epidemiology, 25:sup1, 162-170, DOI: 10.1080/09286586.2018.1546879
4. James Garrity, MD,(2003) Mayo clinic college of medicine and science Trichiasis 2022
5. Smith JL, Flueckiger RM, Hooper PJ, Polack S, Cromwell EA, et al. (2013) The Geographical Distribution and Burden of Trachoma in Africa. PLoS Negl Trop Dis 7(8): e2359. doi:10.1371/journal. and.0002359
6. Wondimu, A., & Bejiga, A. (2003). Prevalence of trachomatous trichiasis in the community of Alaba District, Southern Ethiopia. *East African Medical Journal*, *80*(7),365–368.
7. https://doi.org/10.4314/eamj.v80i7.8720

SJ Ophthalmology Africa
Vol.2 No.7 (2025): July 2025 Issue
https://doi.org/10.51168/nsj3e177
Original Article

Publisher details.

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