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Original Article

Impact and factors associated with the prevalence of trachoma among patients aged between 40-80 years attending eye clinic at Moroto regional referral hospital. A cross-sectional study.

Andrew Turinawe , Jalia Nanangwe*
Ophthalmic Clinical Officer's Training School

Abstract

Background

Trachoma is the leading cause of blindness worldwide. It is caused by an obligate intracellular bacterium called Chlamydia trachomatis. The study intends to establish the impact and factors associated with trachoma among patients aged 40-80years attending the Eye clinic at MRRH.

Methodology

A descriptive cross-sectional study was conducted using a quantitative research method at the eye clinic of MRRH in Moroto District, Northeastern Uganda. The study population consisted of all patients aged between 40-80 years who attended the eye clinic at MRRH during the study period, with a sample size of 60 participants.

Results

The majority, 21(35%), were aged between 61-70 years. 37(61.7%) were females, while 23(38.3%) were males. 38(63.7%) were peasants. 39(65%) experienced an inadequate water supply. 34(56.7%) were aware of proper hand washing after health education. 45(75%) practiced face washing where 29(64.4%) were using plain water. 42/60(70%) were aware of trachoma. Concerning the impact of trachoma 38/60(63.3%) had family members who suffered trachoma. Out of the 38 who had trachoma victims, 20(52.6%) reported blurred vision, 9(23.7%) reported corneal ulcer, 6(15.8%) reported corneal opacity, and 6(15.8%) reported corneal opacities secondary to ulceration as the main impacts of trachoma on their family members.

Conclusion

Factors associated with the prevalence of trachoma were aged between 61-70 years, female gender, peasants, living in rural areas, inadequate water, and low latrine coverage. Associated impacts of trachoma were blurred vision, corneal ulcer, and corneal opacity secondary to ulceration.

Recommendation

Ministry of Health to equip all eye health facilities with equipment for early screening, diagnosis, and treatment of trachoma, D.H.O. to set up programs that sensitize people about eye care services, like going for eye medical services whenever they get problems with their eyes.

Keywords: Prevalence of trachoma, Patients aged 40-80years, Blindness, Chlamydia trachomatis, Moroto regional referral hospital.
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Corresponding Author
Andrew Turinawe
Email:turinaweandrew100@gmail.com
OphthalmicClinical Officer's Training School

Background of the study

Trachoma is the leading cause of blindness worldwide. The infection is transmitted by direct or indirect transfer of eye and nose discharges from infected people. It is a public health problem in 42 countries, and is the major cause of about 1.4% all blindness worldwide (WHO, 2024).

Trachoma presents with the light stage and heavy stages. According to the World Health Organization, trachoma is graded as infection follicular trachoma (TF), trachomatous inflammation (TI), trachomatous scarring (TS), trachomatous trichiasis (TT), and corneal opacity (CO).

The study carried out in Africa by Jennifer L et al (2013) shows that 29 out of 33 countries in Africa were classified as endemic for trachoma, and 1095 (20.6%) districts had representative data collected through population-based prevalence surveys.

Another study carried out in Uganda by the Ministry of Health (2014) with the aim of eliminating trachoma by

2020, indicated that Trachoma is a neglected tropical disease.
In a survey conducted in 2014 and 2018 by Ophthalmic Epidemiology, concerning completing Baseline Mapping of Trachoma in Uganda, a total of 11,796 households were surveyed, and 24,652 people aged ≥15 years were examined. EU-level prevalence of TF ranged from 0.3% to 3.9%, and EU-level trichiasis prevalence ranged from 0.01% to 0.81% (Baayenda, 2018). According to the health Information Management System Moroto district, the prevalence of trachoma was 8.3% for January, 15.23% February, and 9.41% March. The study intends to establish the prevalence of trachoma among patients aged 40-80years attending the Eye clinic at MRRH.

Methodology
Study design

A descriptive cross-sectional study that applied quantitative methods to determine the prevalence of trachoma among patients aged 40-80 years attending the eye clinic at MRRH provided descriptive information that was used to plan, administer, and carry out preventive health services, surveillance programs, and surveys about trachoma.

Study area
The study was carried out at the eye clinic at MRRH in Moroto district, located in the North Eastern region of Uganda. It became a referral in 2009 and has a capacity of 200 beds with a population of 103,432 people. The hospital has 15 wards which include: surgical ward, medical female and male wards, psychiatric ward, eye ward, gynecological ward, intensive care unit, and outpatient department.

Study population
The study population comprised of all patients aged between 40-80 years who were attending eye clinic at MRRH during the period of study.

Sample size determination
Used Button's (1965) formula to calculate sample size

S=G(R/O)

Where S=sample size

G= number of respondents interviewed per day

O= maximum time the interviewer spent on each respondent

R= maximum number of days for data collection

G=3 R= 5 O=15minutes

S=3(5/0.25)

S=60participants. Therefore, the sample size was sixty (60).

Quality control
The research proposal was presented to the supervisor for approval. The principal investigator trained the research assistant on how to apply data collection tools correctly. The study tools were presented, and pilot testing was done to identify any errors. Field editing was done on the spot, and data was kept safely in a file.
Proper washing of hands before and after interviewing a patient with questionnaires was done to ensure SOPs and proper gloving.

Sampling Technique
A random sampling technique was used to choose patients every day. This technique was chosen to minimize bias

Sampling procedure
Patients were registered at the reception, their age and sex documented regardless of presenting complaints. Whenever a patient aged between 40-80 years was identified by the clinician during the study, he or she was directed to the principal investigator and research assistants for an interview. Every third patient was considered and given a questionnaire to answer.

Data collection method
The principal investigator used questionnaires as a method of data collection, using an interview guide with well-structured questions. Data was collected only from patients aged 40-80 years attending the Moroto eye clinic.

Data collection tool(s)
Data was collected using a questionnaire which was administered by the research assistants and given to people aged between 40-80 years at the eye clinic MRRH.

Data collection procedure
The principal investigator started by creating rapport with the respondents and reassuring them about confidentiality. The questions were read and interpreted for the respondents to understand. The responses were given in the local language and English, and written in English by the principal investigator and his research assistants.

Study variables

Dependent variable
The prevalence of trachoma among the patients attending eye clinic at MRRH

Independent variable
These were age, sex, occupation, tribe address and history of signs and symptoms of trachoma.

Inclusion Criteria
This study included all patients aged between 40- 80 years who attended the eye clinic at MRRH. Only those who were willing to consent got involved in the study.

Exclusion Criteria

Patients who were aged below 40 and above 80 years, and those who were not able to consent to participate in the study

Data analysis and presentation

Data was analyzed manually using a scientific calculator, and tabulations were made to establish the relationship between the variables. Microsoft Excel was used in drawing charts and graphs for the clear presentation of the findings. A computer was used to type the research proposal. The results were presented in tables, figures, and statements.

Ethical considerations

Permission to undertake a study in MRRH was granted after presenting an introductory letter from the principal of the Ophthalmic Clinical Officer's training school, Jinja, to the hospital Director of MRRH, who then introduced the researcher to the in-charge of the eye clinic, eye department. A consent form was presented to the respondents, who voluntarily agreed to take part in the study. The respondents were assured of maximum privacy and confidentiality. The principle of anonymity was strictly adhered to.

Limitations of the study

There was no specific time allocated for research on the timetable to collect data.

There was also a problem of language barrier which necessitated using translators.

Results

Socio Demographic data of the respondents

Table 1: Shows socio demographic characteristics of the respondents (n=60)

Responses	Frequency(n=60)	Percentage %
Age		
40-50 years	12	20
51-60 years	17	28.3
61-70 years	21	35
71-80 years	10	16.7
Sex		
Males	23	38.3
Females	37	61.7
Tribe		
Musoga	04	6.6
Karamajong	33	55
Mugishu	08	13.3
Others	15	25
Occupation		
Civil servants	10	16.7
Peasant	38	63.3
Business	12	20
Area of residence		
Urban	18	30
Rural Area	42	70

Table 1 shows the majority 21(35%) respondents were aged between 61-70 years, 17(28.3%) aged between 51-60years, 12(20%) between 40-50 years and 10(16.7%) were aged between 25-30 years. 37(61.7%) were females, while 23(38.3%) were males. 33(55%) were Karamajongs while 4(6.6%) were Basoga. 38(63.7%) were peasants, 12(20%) were Business people, 10(16.7%) were civil servants. Prevalence of trachoma was higher in rural areas, 42(70%), than in urban areas, 18(30%).

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Factors associated with the development of trachoma among patients aged between 40-80 years attending Eye clinic at MRRH

Table 2: Factors associated with the development of trachoma among patients aged between 40-80 years attending Eye clinic at MRRH

Responses		Frequency(n=60)	Percentage(%)
Water	Adequate	21	35
	Inadequate	39	65
Water source	Bore hole	31	51.6
	River	6	10
	Well	11	18.3
	Other sources(tap)	12	20
Hand washing	Yes	34	56.7
	No	26	43.3
Face washing	No	15	25
	Yes	45	75
What do you use for hand washing	Plain water	29	64.4
	Water and soap	16	35.6
	Others	0	0
Availability of latrine	Yes	36	60
	No	24	40
If No, where do u go?	Bush	24	100

In Table 2, the majority, 39(65%) of the respondents were facing a challenge of inadequate water supply, while a minority, 21(35%), had an adequate supply. 34(56.7%) were aware of proper hand washing after health education, while a minority, 26(43.3%), were not carrying out hand washing. 45(75%) did proper face washing where 29(64.4%) were using plain water and only 16(35.6%) used soap and water. 36(60%) had latrine at home, 24(40%) had no latrine and 24(100%) were using the bush as their latrine.

Figure 1: A pie chart showing different water sources used by people attending eye clinic at MRRH

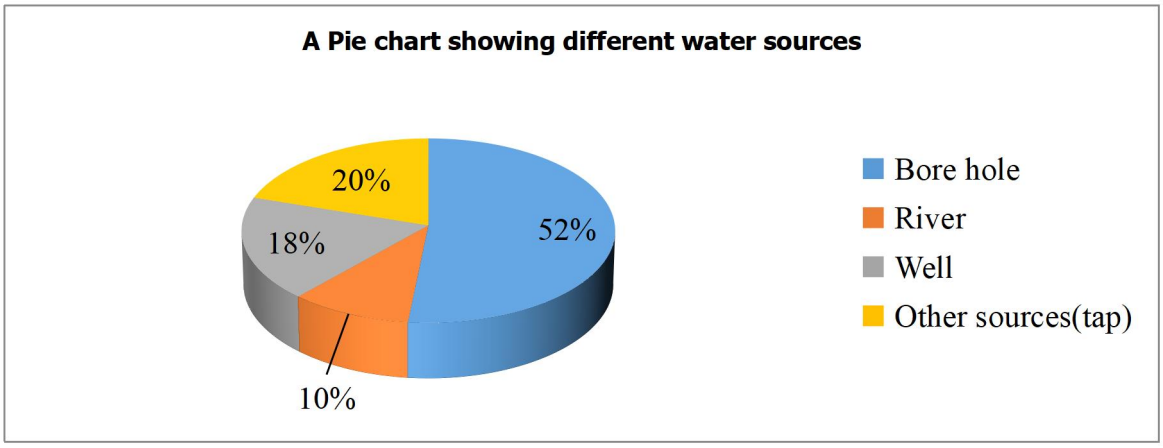

Figure 1 shows (51.6%) were using borehole as their water source, (18.3%) wells, (20%) tap water and the minority (10%) river water.

Impact of trachoma on visual function among patients aged between 40-80 years attending Eye clinic at MRRH

Table 3: Impact of trachoma on visual function among patients aged between 40-80 years attending Eye clinic at MRRH

Responses		Frequency(n=60)	Percentage (%)
Have you ever heard of this condition	Yes	42	70
	No	18	30
Do you have any person in your family who is suffering or has ever suffered from this condition?	Yes	38	63.3
	No	22	36.7
If yes, what was the effect	Corneal opacity	6	15.8
	Blurred vision	20	52.6
	Blindness	3	7.9
	Corneal Ulcer	9	23.7

In Table 3, the majority 42/60(70%), said yes, while the minority 18/60(30%), didn't know anything about trachoma when asked whether they had ever heard of trachoma. 38/60(63.3%) reported having family members who suffered from trachoma, while 22/60(36.6%) indicated that they had no family member with trachoma.

Figure 2: A bar graph showing the effect of trachoma on Vision

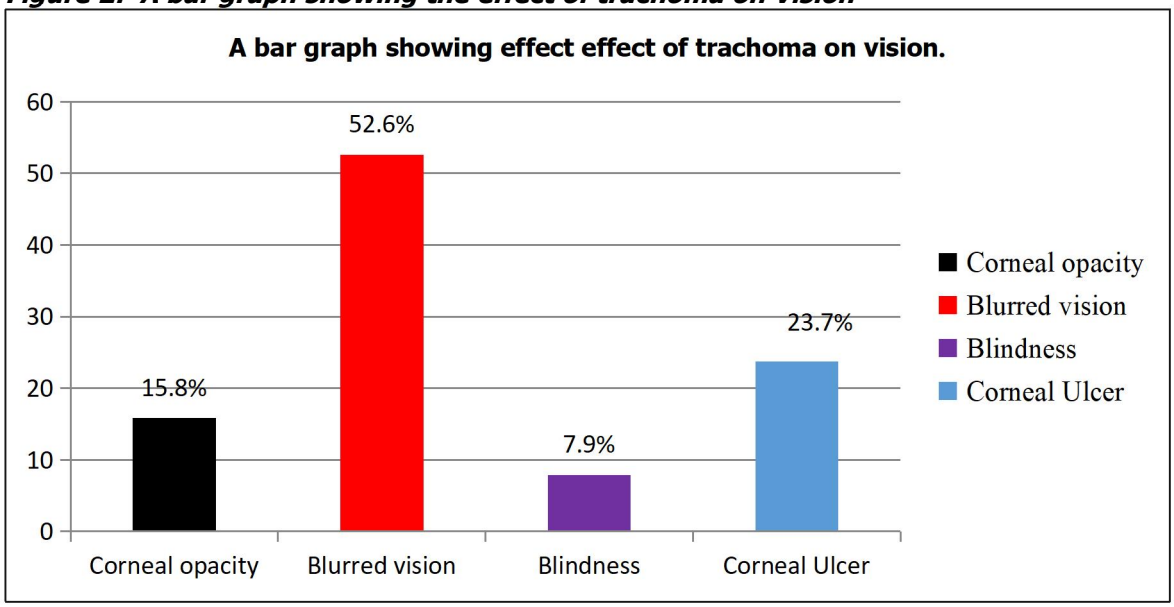

Figure 2 shows 20(52.6%) had blurred vision, 9(23.7%) corneal ulcer, 6(15.8%) had corneal opacity, and 6(15.8%) had corneal opacities secondary to ulceration.

Discussion

Impact and factors associated with the development of trachoma among patients aged between 40-80 years attending Eye clinic at MRRH

Inadequate water; Majority 39(65%) of the patients had challenges of getting sufficient water in their homes and only 21(35%) had enough water because most of the respondents complained of the long distances between the water sources and their homes, lack of proper water supply in their villages, this forces them to use water shared with cattle for activities like facial cleaning and washing which exposes themselves to Trachoma. This study agrees with *a* study conducted by Ayelgn et al, (2021) in Metema District which found out that the overall prevalence of active trachoma was 11.8%, among them, 26.5% had unprotected source of water, 26.5% had lower household water consumption and 79.3% could wash their face a day.

Availability of latrines; In the study, it was found that the majority, 36(60%) of the respondents had latrines in their homes, and 24(40%) had no latrines. This means that most people don't use latrines, and yet poorly disposed

faeces attract flies, which spread trachoma. This is in agreement with the study conducted in Buyengo sub-county, Jinja district by Norman (2022), which found out that out of 102 people without pit latrines, 6% had signs and symptoms of trachoma. This means the availability of pit latrines leads to the prevalence of trachoma.

The study revealed that the majority, 20(52.6%) of the members who had their family members having suffered from trachoma, had blurred vision, 9(23.7%) corneal ulcer, 6(15.8%) corneal opacity, and 6/38 had corneal opacities secondary to ulceration. This is because eyelid entropion after the follicular stage causes eyelashes to rub against the cornea, hence leading to ulceration, then corneal scar.

Impact

Conclusion

Factors associated with the prevalence of trachoma were aged between 61-70 years, female gender, peasants, living in rural areas, inadequate water, and low latrine coverage. Associated impacts of trachoma were blurred vision, corneal ulcer, and corneal opacity secondary to ulceration.

Recommendation

Ministry of Health to equip all eye health facilities with equipment for early screening, diagnosis, and treatment of trachoma, D.H.O. to set up programs that sensitize people about eye care services, like going for eye medical services whenever they get problems with their eyes.

The government should employ a reasonable number of OCOs in the health centers for proper eye care. The government should set up more eye clinics in hospitals where they are lacking to increase accessibility to eye care services.

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List of Abbreviations

AZT: Azithromycin
CORPS: Community resource person
GET: Global elimination of Trachoma
MOH: Ministry of Health
MRRH: Moroto Regional Referral Hospital
NTD: Neglected Tropical Diseases
OCO: Ophthalmic Clinical Officer's Training School
PBPS: Population based prevalence surveys
SAFE: Surgery, antibiotics use, facial cleanliness and environmental improvement.
SOPs: Standard Operating Procedures
TB: Traditional Beliefs
TEM: Traditional Eye Medication
TF: Follicular Trachoma
TS: Trachomatous Scarring
TT: Trachomatous Trichiasis
UCG: Uganda clinical guidelines
UG: Uganda
VA: Visual Acuity
W.H.O: World Health Organization
WASH: Water, sanitation and hygiene

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No source of funding was declared in the study.

Conflict of interest

The author stated no competing interests.

Author's contribution

Turinawe Andrew, was the researcher and collected data during the study.
Madam Nanangwe Jalia, supervised the whole research project.

Author's Biography

Turinawe Andrew, a diploma student at Ophthalmic Clinical Officer's Training School.
Madam Nanangwe Jalia, tutor at Ophthalmic Clinical Officer's Training School.

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