



Eye care service utilization and associated factors among individuals above 40 years of age with ocular problem in Butajira town, central Ethiopia

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Eye care service utilization and associated factors among individuals above 40 years of age with ocular problems in Butajira town, central Ethiopia, 2024

Abstract

Background:

Purpose: Assess eye care utilization and associated factors among individuals above 40 years of age with ocular problems in Butajira town, central Ethiopia.

Method: Community based cross sectional study was done in Butajira town, central Ethiopia from August 5 to August 30, 2024. Interviewer administered questionnaire was used to collect data and was analyzed using SPSS version 26. Binary and multivariate logistic regression was done to identify the relation between independent variables with eye care utilization. Variables with $p < 0.05$ were taken as significantly associated with eye care utilization.

Result: A total of 280 individuals were included in this study where 70.7% of them were females and 29.3% were males. Mean age was 58.03 ± 11.9 years. Proportion of eye care utilization in the past 2 years was found to be 38.6% (95% CI 32.9-44). Hypertension (AOR=2.4) and having ocular problems which affected daily activity (AOR=2.4) were significantly associated with eye care utilization.

Conclusion: Proportion of eye care utilization in Butajira town was low. Those individuals who had hypertension and ocular problems which affected their daily activity were seen to have better eye care service utilization. It is recommended to create better awareness among residents of Butajira town, so that individuals seek care early when they face eye problem.

KEYWORDS: Eye care utilization; ocular problems; Butajira town; central Ethiopia

Introduction

Eye care service utilization is when individuals use eye care services to prevent and treat eye disorders, encourage the maintenance of eye health, or learn more about their current eye health status and prognosis. (1)

Proper utilization of eye care services is essential for early identification and treatment of ocular problems to prevent vision loss.

The magnitude of visual impairment and blindness worldwide is significant. Globally, it is estimated that 295 million people have moderate to severe visual impairment, while 258 million have mild visual impairment. 43.3 million People are blind where majority are female and elderly. (2)

Ophthalmic and optometric organizations recommend older adults to receive a thorough eye examination every one to two years. The recommended time between examinations varies according to risk factors for ocular disease. (3)

Proportion of Eye care utilization varies in different countries worldwide. A study done by Vela C and her colleagues to assess proportion of eye care utilization in 52 low, middle and high income countries found a proportion of eye care utilization ranging from 10% in low income countries to 37% in high income countries where the lowest rates were seen in Africa and South East Asia (4). The proportion of eye care utilization was found to be higher in developed countries like Australia where proportion of eye care utilization among older individuals in the past 2 years was 67-82.5% (5), and in United States, where proportion of eye care utilization among older individuals with visual impairment in the past 1 year was from 48-69% (6).

The low proportion of eye care service utilization seen in low income countries is generally attributed to limited access of eye care services, poor socio-economic status, lack of qualified eyecare professionals and lack of effective integration of eye care services into health systems (7,8).

In Ethiopia, prevalence of visual impairment and blindness was 3.7% and 1.6% respectively. The majority of causes of blindness and poor vision were either preventable or treatable (9). Visual impairment continues to be a serious public health issue which affects the social and economic wellbeing of the country and reduces people's quality of life.

This study aims to assess the proportion of eye care utilization and associated factors in Butajira town, central Ethiopia among older individuals who have ocular problem. It also helps to identify particular gaps in our eye care service and notify responsible bodies for possible improvement in the health sector.

Method

Community based cross sectional study was conducted in Butajira town, central Ethiopia from August 5-30, 2024. Butajira town is located 132km from Addis Ababa, capital city of Ethiopia. The town has a total population of 77,483 living in 5 kebeles and has one governmental hospital and one private eye care center which are giving eye care service. Permanent residents of the town who are 40 years old and above were included if they had ocular problems and were willing to participate in the study.

Sampling

The sample size is calculated by using a single population proportion formula. A proportion of eye care service utilization of 21% (10) is taken with 95% confidence interval, 5% marginal error and 10% non response rate, sample size becomes 280.

The sample size was proportionally allocated according to the population size of each kebele. The first household was selected with simple random sampling and consecutive households with eligible individuals were included until the required number of sample size from each kebele is achieved. If there were more than one eligible individual in a household, only one eligible individual was selected using lottery method. If there was no eligible individual in the house or if not available at the time of data collection, it was visited again or the next house hold was selected.

Sample size from each kebele = total sample size x total population in each kebele/total population of the town

Kebele 1= $280 \times 14803 / 77483 = 53$

Kebele 2= $280 \times 14092 / 77483 = 51$

Kebele 3= $280 \times 15501 / 77483 = 56$

Kebele 4= $280 \times 16890 / 77483 = 61$

Kebele 5= $280 \times 16197 / 77483 = 59$

Data collection

Interviewer administered questionnaire was used to collect data. The questionnaire includes questions to assess socio demographic characters, ocular problems, chronic medical illnesses, and eye care utilization. Ocular examination is done for every individual with penlight and participants who need a better examination and management are recommended to visit nearby eye care center.

Ethical consideration

This study is approved by Research and Publication Committee of the Department of Ophthalmology, School of Medicine, College of Health Science, Addis Ababa University. Official letter was obtained from Department of Ophthalmology and submitted to Butajira city administration. After explaining the purpose of the study, a verbal informed consent is taken from each eligible individual. The privacy of the participants is respected and their names are not used and only members of the research team had access to the data.

Operational definition

Eye care service utilization: If the individual reports that he/she had visited eye care service providing center for eye check up/examination or for eye problem at least once within the past 2 years, it will be considered as he/she utilized eye care service for this study.

Awareness of regular eye check up importance: Participants who have ever heard the importance of regular eye check up or examination are considered as they have awareness of regular eye check up importance.

Eye care service providing center: Health institution with at least one eye care service provider (ophthalmologist, optometrist, ophthalmic nurse or cataract surgeon)

Permanent resident: Individual who lived in Butajira town for 6 months in any 12 month period, either continuously or intermittently.

Data analysis

Completeness of each data is checked, entered and analyzed using SPSS version 26. Summary statistics and frequencies are performed for the descriptive data. Binary logistic regression model is used to identify association between independent variables and eye care service utilization followed by multiple logistic regression. Those variables with $p < 0.05$ are taken as statistically significant.

Results

Socio-demographic characteristics

Among a total of 280 individuals included in this study, 70.7% of them were females and 29.3% were males. The mean age was 58.03 ± 11.9 years.

Table 1. Socio-demographic characteristics of study participants (n=280), Butajira town, central Ethiopia, August 2024

Characteristics	Frequency	Percentage
Age in years		
40-54	101	36.1
55-64	74	26.4
≥ 65	105	37.5
Sex		
Male	82	29.3
Female	198	70.7
Marital status		
Single	3	1.1
Married	183	65.3
Divorced	16	5.7
Widowed	78	27.9
Education level		

Cannot write and read	111	39.6
Can write and read only	49	17.5
Primary education	72	25.7
Secondary education	32	11.4
College and above	16	5.7
Occupation		
Government employee	12	4.3
Non-government employee	47	16.8
Merchant	47	16.8
Housewife	134	47.9
Retired	24	8.6
Farmer	16	5.7
Average family monthly income in Birr		
<=2000	187	66.8
2001-4000	76	27.1
>4001	17	6.1

Medical and ocular characteristics

From the total 280 participants, 180(64.2%) individuals had visited eye care center in the past. From those individuals who had visited eye care center, 28.9% of participants were seen with in last 1 year. 9.6%, 7.9%, 1.8%, 3.9% and 11.4% of participants visited eye care center with in 2 years, 3 years, 4 years, 5 years and beyond 5 years respectively. 0.7% of participants didn't remember when they visited eye care center. All of the participants who went to eye care center, visited eye care center when they faced eye problem.

From 180 individuals who had visited eye care center, 30.4% of them had once in a year or more visitations while 26.8% of them went to eye care center only if they had eye problem.

The most common ocular complaint was reduction of vision at distant (59.3%) followed by reduction of vision at near (15.4%).

One hundred ninety five participants (69.6%) had ocular problems which affected their daily activity. From these, 23.6% (46 participants out of 195) didn't visit eye care center.

From the total 280 participants, 62 individuals (22.1%) had hypertension, where 80% of them visited eye care center and 18 individuals (6.4%) had diabetes where 83.3% of them visited eye care center.

Seventy two individuals (25.7%) from the total study participants had a positive family history of eye disease.

Total of 160 individuals (57.1%) had health insurance. From those who have health insurance, 30.6% of them didn't visit eye center.

Table 2. Types of ocular complaints of study participants (n=280), Butajira town, central Ethiopia, August 2024

Ocular compliant	Frequency	Percent
Visual reduction at distant	166	59.3
Visual reduction at near	43	15.4
Pain	4	1.4
Redness	9	3.2
Itching	24	8.6
Tearing	17	6.1
Eye trauma	7	2.5
Others	10	3.6

Others-Foreign body sensation, Photophobia, Flashes of light

Eye care utilization

Proportion of eye care utilization in the past two years was 38.6% (95% CI 32.9-44.2)

Two hundred sixty three participants (93.9%) heard about importance of regular eye check up.

Preferred place of visit was private eye care center (84%).

One hundred participants (35.7%) had never visited eye care providing center in the past.

Major barriers for utilization of eye care center were financial reason (38.4%) followed by ‘no perceived need’ (36%) and assumption of ‘it will get better’ (20.9%) Fig 1.

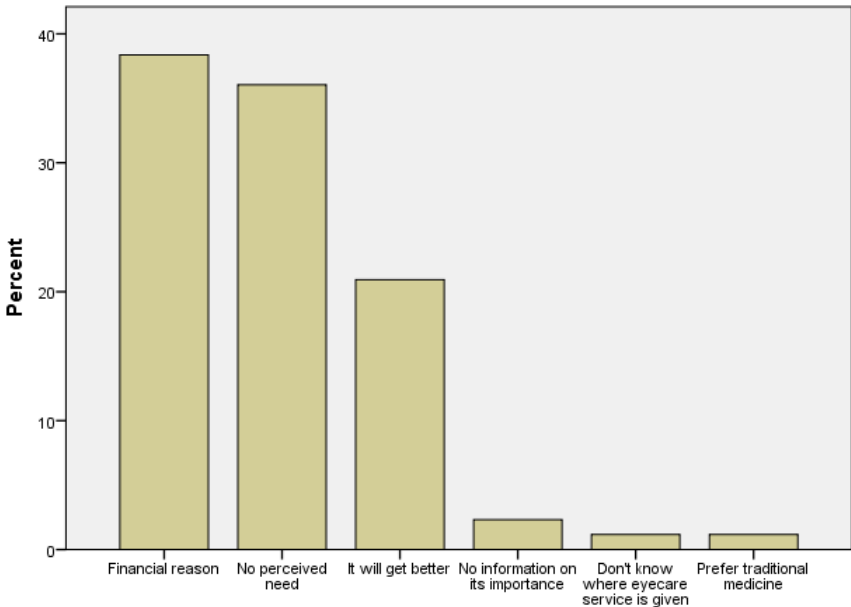


Fig 1. Reasons for not visiting eye care center, of study participants (n=86), Butajira town, central Ethiopia, August 2024

Table 3. Preferred place of visit of study participants (n=194), Butajira town, central Ethiopia, August 2024

Place of visit	Frequency	Percent
Private Eye care center	163	84
General hospital	17	8.8
Health center	14	7.2

Factors associated with eye care utilization

Binary logistic regression was done for all independent variables for eye care utilization. Hypertension and having awareness of regular eye check up were found to have significant association with eye care utilization. With multivariate logistic regression, individuals who had ocular problems which affected their daily activity were found to have better eye care utilization.

Table 4. Factors associated with eye care utilization among study participants (n=280), Butajira town, central Ethiopia

Variables	Eye care utilization		COR(95% CI)	AOR(95% CI)
	Yes	No		
Hypertension				
Yes	50	12	2.5(1.28-4.89)*	2.4(1.18-4.65)*
No	144	74	1	1
Daily activity affected by ocular problem				
Yes	149	46	2.5(1.47-4.19)*	2.4(1.4-4.1)*
No	45	40	1	1
Awareness on regular eye check up				
Yes	186	77	2.7(1.01-7.46)*	
No	8	9	1	

***statistically significant association with $p < 0.05$**

Participants who had hypertension was found to have better eye care utilization by 2.4x (AOR=2.4, 95% CI: 1.18-4.65) than those who didn't have hypertension. In addition those participants who had eye problems which affected their daily activity was found to visit eye care center better than those individuals where their daily activity was not affected by their ocular problem. (AOR=2.4, 95%CI: 1.4-4.1)

Discussion

The proportion of eye care service utilization in this study was found to be 38.6% (95% CI 32.9-44.2) in the past 2years

This result is higher than results found in studies done in North West Gondar (21.1%) (10), Ghana (17%) (7), Nigeria (18%) (11), South Africa (17.8%) (8), Rural China (28.1%) (17)

This might be due to the residency of study population in urban area while previous studies included mainly rural residents. Being urban resident was associated with higher eye care utilization as there is better awareness on health care and better availability of eye care service than in rural areas. Another reason might be due to the age of study participants where studies at Ghana (7) and Nigeria (11) included individuals above 18 years of age and another study from South Africa (8) included individuals above 15 years of age whereas this study only included individuals above 40 years of age. Older individuals are known to have better eye care service utilization than younger individuals due to increased prevalence of age related ocular problems like cataract, presbyopia, glaucoma and age related macular degeneration.

This study has higher proportion of eye care utilization than studies done in Hawassa (23.8%) (3). This might be due to the study population in this study includes participants with ocular problem while previous study included participants whether they have ocular problem or not. History of eye disease is associated with higher eye care utilization compared to individuals with no eye problem.

The finding of this study is lower than studies done in Limpopo province of South Africa (62.7%) (12), South East Asia (87.4%) (13), Rural Alabama, USA (47.2%) (14). This might be due to lower socioeconomic status, lower educational level and lower availability of eye care providing center in our study compared to previous studies. Previous studies also found better awareness of regular eye check up among participants, better accessibility of eye care centers and better affordability of eye care services

On multivariable logistic regression, eye problem which affected daily activity has statistically significant association with eye care utilization. In studies done in Northwest Gondar (10) and South East Asia (13) ability to perform daily activity with the eye problem was one of the barriers to eye care service utilization. In addition, similar to other studies (4,5,8), having chronic medical illness was positively associated with better eye care utilization.

This study also found that financial problems were the major barrier to eye care service utilization (38.4%). This finding was in line with studies done in Ghana (7), South Africa (8), Northwest Gondar (10), Limpopo Province, South Africa (12), South East Asia (13), Kenya (15) and USA (17)

Conclusion and Recommendations

This study found that eye care utilization in Butajira town was low. Participants who had an ocular problem which affected their daily activity had better eye care utilization. This shows us that better awareness needs to be created among residents of Butajira town so that individuals seek care early when they face problem. The most common barrier for eye care utilization was financial problem. The health bureau and other responsible bodies' needs to work on increasing the availability and affordability of eye care services.

Strength of the study

Our research provided information about the use of eye care services in this area, this information can be utilised to guide policy in Butajira town as well as other similar settings in Ethiopia.

Limitation of the study

Because only the community in Butajira town was included in the study, its findings cannot be applied to surrounding woredas around the town which might have different socio-demographic character and different availability and accessibility of eye care service. Therefore, it is advised to do more research to evaluate the use of eye care services in various regions of central Ethiopia.

In addition, this study did not include the type of service participants received at the time of their visitations and also didn't assess if individuals actually utilized it well or not. Future studies in the town might include these aspects of eye care service utilization.

Author's contribution

All the authors contributed in the conception, design, analysis, acquisition and interpretation of the data.

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Declaration of competing interest

None

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Annex 1: Information sheet

Title: Eye care service utilization and associated factors among individuals above 40 years of age with ocular problems in Butajira town, central Ethiopia

Investigator: MERON MISGANA, MD.
Co-investigator: YILIKAL ADAMU, MD.

You are invited to participate in this study. Before you decide to take part, it is important for you to understand why this research is being done and what it involves. Please take time to read/listen to the following information carefully. Raise question if there is anything not clear. Thank you for the time you have spent already.

Back ground to the study:

Eye care service utilization is when people use eye care services to prevent and treat eye disorders, encourage the maintenance of eye health, or learn more about their current eye health status and prognosis.

The proper utilization of eye care services is essential for early identification and treatment of visual problems so as to decrease the burden of visual impairment. The prevalence of eye disease and visual impairment is greater among older individuals due to age-related eye diseases. Ophthalmic and optometric organizations therefore recommend older adults to receive a thorough eye examination from an eye care center every one to two years where people with risk factors for ocular disease should have an eye examination more frequently. This study will be conducted to assess the proportion of eye care utilization and its associated factors in Butajira town.

Based on the information you are given if you are willing to participate you will be interviewed with a prepared questionnaire by the principal investigator.

Possible harms No side effects are expected from participation on this study.

Benefits You will know the status of your eye care utilization and your awareness towards it

Confidentiality All information which is collected about you during the course of the research will be strictly confidential.

Autonomy All the information you give us is highly valuable to the study. It is up to you to decide whether to take part or not. You will be given this information sheet to read and be asked for your consent. Whether you consent or do not consent to be part of the study, your rights for care in the health care facility will not be compromised.

Who is organizing the research? The research will be reviewed by research and publication committee of Department of Ophthalmology, College of Health Science, School of Medicine, Addis Ababa University.

Thank you in advance!

ANNEX 2: QUESTIONNAIRE

Annex: Information sheet

Title: Eye care service utilization and associated factors among individuals above 40 years of age with ocular problems in Butajira town, Southern Ethiopia

Investigator: Dr. MERON MISGANA

Co-investigator: Pr. YILIKAL ADAMU

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Autonomy All the information you give us is highly valuable to the study. It is up to you to decide whether to take part or not. You will be given this information sheet to read and be asked

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Thank you in advance!

ANNEX 1: QUESTIONNAIRE

ID_____

Part 1. Socio-demographic characteristic		
Serial NO	Question	Response
1	Age	_____
2	Sex	1. Male 2. Female
3	Marital Status	1. Single 2.Married 3.Divorced 4.Widowed
4	Educational level	1. cannot write and read 2.can write and read only 3.Primary Education 4. Secondary Education 5. College and Above
5	Occupation	1.Govermental Employee 2.Non-Governmental Employee 3.Marchent 4.House wife 5. Retired 6. Farmer 7. Others
6	Average family monthly income in ETB	1.<=2000 2.2001-4000 3.>4001

	Part 2 Medical and eye care service utilization related question	
Serial NO	Question	Response
8	Do you have health insurance?	1. Yes 2. No
9	Do you have hypertension?	1. Yes 2. No
10	Do you have diabetes mellitus?	1. Yes 2. No
11	Which type of eye problem do you had?	1. Reduction of vision at distance 2. Reduction of vision at near 3. Pain 4. Redness 5. Itching 6. Tearing 7. Eye trauma 8. specify if other -----
12	Does your eye problem affect your daily activity?	1. Yes 2. No
13	Is there anyone who has history of eye disease from your family?	1. Yes 2. No
14	Have you ever heard the importance of regular eye check up or examination?	1. Yes 2. No
15	Have you ever heard when an individual should go to eye care service providing center for his/her eye examination or check up?	1. Yes 2.No
16	Did you ever visit eye care service providing center for your eye check up?	1. Yes 2. No, If the answer is no go to question #20
17	When did you visit eye care service providing center for your eye examination recently?	1. Within last 1year 6. Before 5 years 2. Within last 1-2 year 7. I can't remember 3. Within last 2-3 year 4. Within last 3-4 year 5. Within last 4-5 year
18	How often do you visit eye care service providing center for your eye check up?	1. Once a year or more 2. Once within two years 3. Once within three years

		4.Once within four years 5.I go to eye clinic only if I had eye disease
19	Did you go to eye care service providing center for your eye examination at a time you noticed having eye disease or face eye problem?	1. Yes go to question #21 2. No
20	Why you didn't have been examined or checked up your eye at eye care center?	1.Due to financial problem 2.I don't have information about importance of eye check up 3. I don't know where the eye care service is given 4.There is a traditional medicine which I prefer 5.It will get better 6.No need
21	Do you have an escort who help you to visit care center for eye check up?	1.Yes 2.No
22	Where do you go for your eye examination or check up?	1.Eye care center 2.General hospital 3.Health center 4.Holy water 5.Traditional medicine 6. No where

