

## Burden of Presbyopia among Adults Aged 40 and Above in North Mecha, Ethiopia, 2024

Abusent Admass<sup>1</sup>, GebeyawWudie<sup>1,2</sup>, Beselam Gizachew<sup>1,2</sup>, Betsaha adimas<sup>3</sup>, Melese Kitu<sup>4\*</sup>

<sup>1</sup>Gambiy Medical and Business College School of Public Health, Department of General Public Health, Bahirdar City, Ethiopia

<sup>2</sup>Bahirdar University, College of Medicine and Health Sciences, Bahirdar City, Ethiopia

<sup>3</sup>Occupational Competency Assessment and Certification Agency (OCACA), Bahirdar City, Ethiopia

<sup>4</sup>Eyu-Ethiopia, Bahirdar City, Ethiopia

### ABSTRACT

**Background:** Presbyopia is the gradual loss of the eye's ability to focus on near objects, resulting from decreased elasticity of the lens and weakening of the eye muscles with age. It is a natural part of aging and can affect everyone eventually. Globally, an estimated 1.8 billion people are affected by presbyopia. However, there is limited data on the community-level prevalence of presbyopia in Ethiopia.

**Objectives:** This study aimed to determine the prevalence of presbyopia and identify associated factors among adults aged 40 years and above in the North Mecha district, Northwest Ethiopia.

**Methods:** A community-based cross-sectional study was conducted among 520 individuals aged 40 years and above from April 1 to May 30, 2023, in five randomly selected kebeles of North Mecha district. Participants were selected using a two-stage cluster sampling method. Data were collected using a pretested structured questionnaire and clinical eye examinations conducted by trained health professionals. Epi Info version 7 was used for data entry, and the data were analyzed using SPSS version 26. Binary and multivariable logistic regression analyses were performed to identify factors associated with presbyopia.

**Result:** The prevalence of presbyopia was 52.3% [95% CI: 48.1%–56.7%]. Significant associated factors included increasing age (AOR = 2.8, 95% CI: 1.6–4.8), history of eye symptoms (AOR = 7.5, 95% CI: 4.3–13.1), and knowledge about presbyopia (AOR = 1.7, 95% CI: 1.1–2.6).

**Conclusion and Recommendation:** The burden of presbyopia was found to be high among 40 and above year population. Addressing this issue requires large-scale community-based screening, public awareness campaigns, and the provision of affordable near-vision corrective spectacles through the existing healthcare system.

### \*Corresponding author

Melese Kitu Eyu-Ethiopia, Bahirdar city, Ethiopia.

**Received:** July 30, 2025; **Accepted:** August 20, 2025; **Published:** August 25, 2025

**Keywords:** Presbyopia, Near Vision Impairment, Eye Health, Visual Impairment, Ethiopia

### Acronyms and Abbreviation

**CI:** Confidence Interval

**HC:** Health Center

**HDA:** Health Development Army

**NVI:** Near Vision Impairment

**PI:** Principal Investigator

**QOL:** Quality of Life

**USD/\$:** United States Dollar

**AOR:** Adjusted Odds Ratio

**COR:** Crude Odds Ratio

### Background

Presbyopia is the gradual loss of the eye's ability to focus on near objects, primarily due to reduced elasticity of the lens and weakening of the ciliary muscles with age. It is a normal part of the aging process and typically begins shortly after the age of 40, eventually affecting everyone.

While there is currently no method to stop or reverse presbyopia, it can be effectively managed. The most common correction method is the use of eyeglasses. Other corrective options include monovision with monofocal lenses, multifocal lenses (in the form of contact or implant lenses), corneal inlays, and corneal refractive surgery. Among these, spectacles remain the most widely preferred and accessible solution for near vision correction.

If left uncorrected, presbyopia can lead to a gradual decline in near vision and negatively impact daily functioning. Evidence also suggests that when choosing correction methods, individuals often prioritize comfort and convenience over cost [1-5].

Globally, at least 2.2 billion people are affected by vision impairment or blindness. The global crude prevalence of avoidable vision impairment and blindness among individuals aged 50 years and above was 96.0 cases per 1,000 people in 2010, decreasing to 9.58 cases per 1,000 people in 2019. An estimated 1.8 billion people of all ages are living with presbyopia, over 1 billion of whom have vision impairment that could have been prevented or effectively treated. Uncorrected presbyopia contributes significantly to the global burden of visual impairment. More than half of the middle-aged and elderly population are affected. Most individuals who live long enough are likely to experience at least one ocular condition during their lifetime. The burden of presbyopia is especially high in rural and low-resource settings, where access to corrective services is limited [6-9].

The prevalence of presbyopia is high in rural African communities, yet a significant proportion of individuals in need of presbyopic correction lack access to appropriate spectacles [10].

Certain systemic diseases or medications can lead to premature presbyopia, occurring in individuals younger than 40 years of age. These contributing factors include anemia, cardiovascular diseases, diabetes mellitus, chronic alcohol consumption, and the use of psychiatric medications, among others [4].

Near vision impairment can be as detrimental to quality of life as distance vision impairment. The impact of presbyopia extends beyond the individual, affecting families and society at large particularly in terms of health, economic productivity, and psychosocial well-being. Although there is a common misconception that presbyopia has little impact on rural, illiterate populations where activities are not typically associated with reading or writing, near vision is essential for various daily tasks. These include winnowing grain, sorting rice, weeding, sewing, cooking, dressing children, and lighting or adjusting lamps [11-13].

Common symptoms of presbyopia include difficulty reading small print, requiring brighter lighting for reading, experiencing headaches or eye strain during near tasks, and trouble focusing on objects close to the eyes. Nearly 80% of individuals with presbyopia report problems with near vision, and approximately 71% express dissatisfaction with their ability to perform near work [12-14].

The impact of Presbyopia could be significant on individuals, their families, and at a larger societal level in terms of health, economics, and psychosocial well-being. Presbyopia reduces quality of life, ability to complete daily activities and increased risk of occupational accident. Also, it reduces quality and productivity at work and higher rates of depression and anxiety. Those would have huge economic implications on the affected person, their families and countries at large [15,16].

Most people in the developed world spending almost half of their lives with presbyopia [17]. Around 34% of presbyopia was unmanaged in developed countries and 50% in developing countries, due to a lack of awareness and lack of accessibility to affordable treatment [18]. Do you to differences in tasks performed and viewing distance requirements, women's over 40 years of age have

higher rates of presbyopia than men in the same age group [19].

Research done in Gonder, Ethiopia, among school teachers shows prevalence of presbyopia was 68.7%. Also researches done in Hawassa and North West Ethiopia shows the burden of unmet need for presbyopia correction was 51.3% and 69.2% respectively[20-22]. A Community based cross sectional study in Finote Selam town shows, Presbyopia prevalence was 78.7% [23].

Presbyopia poses difficulties for close-range tasks, digital device use, and reading small text, potentially leading to eye strain and headaches. Left unmanaged, it can disrupt daily activities that require near vision, impacting productivity and quality of life. Treatment costs, such as reading aids or surgery, could strain finances, affecting work performance and economic productivity. Psychologically, it may cause frustration, embarrassment, and social limitations, influencing emotional well-being. Despite existing research focusing on prevalence and treatments, more comprehensive studies were needed to address the overall health, economic, and psychosocial effects of Presbyopia, considering individuals, families, and societal implications while acknowledging limitations in current research methodologies.

Life expectancy in Ethiopia has been increasing due to improvements in healthcare and living standards. This demographic shift underscores the importance of understanding the specific health needs of the aging population, including eye health. Presbyopia, a common age-related condition characterized by difficulty focusing on near objects, remains poorly documented in Ethiopia. This study aims to determine the prevalence and associated factors of presbyopia among individuals aged 40 years and above in the North Mecha district of Northwest Ethiopia. The findings will provide valuable data for government bodies, non-governmental organizations, and health workers to allocate resources effectively, prioritize services, and optimize referral pathways for presbyopia management. Furthermore, this evidence may guide investments in eye health programs and support advocacy for relevant policies.

## Objectives

To determine the prevalence and associated factors of presbyopia among individuals aged 40 years and above in North Mecha, Ethiopia, in 2024.

## Methods

### Study Design and Setting

A community-based cross-sectional study was conducted from April 1 to May 30, 2023, among individuals aged 40 years and above in North Mecha district. North Mecha is one of the sixteen woredas in the West Gojjam Zone, located 30 kilometers southwest of Bahir Dar, the capital of the Amhara Region. According to the Central Statistics Agency's 2024 population projection, the woreda has a total population of 378,704, with an estimated 93,000 households. The woreda comprises 6 urban and 40 rural kebeles. Health services in the area are provided by 1 district hospital, 10 health centers, and 40 health posts. More than three-fourths (85.4%) of the West Gojjam Zone population is rural, and individuals aged 40 years and above account for 16% of the population [24].

### Study Population

The source population were elderly individuals aged 40 and above who resides in North Mecha district. And the study population were defined as individuals aged 40 and above years who lived in selected kebeles.

## Eligibility

Individuals aged 40 and above years plus 6 month or more residents in district were involved. In the other way, individuals who were unresponsive and uncooperative to eye examinations were excluded. Individuals identified with other external eye diseases (mature cataract, corneal opacity) that have a potential to block all vision (distance and near) were also excluded.

## Operational and Term Definition

**Presbyopia:** A person aged greater or equal to 40 years whom unable to read N6 or M 0.8 at 40cm distance (comfortable distance for most people) [21,25].

**Lifestyle Factors:** Habits and behaviors such as, smoking, alcohol consumption, and occupation that can impact an individual's health and well-being.

**Medical History:** A record of a person's chronic illnesses and, medications (such as anti-psychotic drugs) currently being taken.

**Ocular Health:** The state of the eyes and visual system, including conditions such as chronic eye diseases, eye surgeries, family history's, eye symptoms and any other eye-related issues or diseases.

**Knowledge about Presbyopia:** Each participant's knowledge was assessed by asking 6 presbyopia related questions. If a participant correctly answered 3 or more ( $\geq 50\%$ ) of questions the person was classified as "having a good knowledge". In the other way, if the participant answered less than 3 ( $< 50\%$ ) he/she was classified as "having a poor knowledge".

## Sample Size

Single population proportion formula was used to calculate the sample size. The sample was obtained with the assumption of 95% confidence interval, 80% power, 5% margin of error, prevalence of presbyopia 68.7%(26), 1.5 design effect, and 10% non-response rate. The sample size was calculated using Epi-info-7 software and yielding a total of 545 study participants.

## Sampling Method

A multistage sampling method was used to select study participants. First, five kebeles were randomly selected by lottery from all 46 kebeles in the district: Merawi city kebele 02, Timt, Kudmi, Zenzen, and Wetet Abay 03. Then, two gotts were randomly selected by lottery from each of the chosen kebeles. From each gott, 55 individuals aged 40 years and above were included.

Each gott was further subdivided into Health Development Armies (HDAs). At the time of data collection, one HDA was randomly selected by lottery as the starting point. Subsequently, all residents aged 40 years and above within each household were interviewed consecutively until the required sample size was reached.

## Data Collection

Data was collected by structured questionnaires, a near vision N6 chart and Eye Examinations. All data was collected through house to house move and face to face interview. Annual income was collected primarily from a household head and it was calculated by adding from all income sources. A participant near vision status was determined by N6 visual screening chart. Hence, if a participant cannot read N6 we classify him/her as a presbyopic participant. All participant's eye was examined for external eye conditions by using a torch. However, no other detail eye examination was

performed. Participants Knowledge about presbyopia was assessed through six related questions.

## Data Quality and Security

Data was collected by three nurses and two supervisors. A one-day training was given to all data collectors. The training was focused on data collection tools, consent and research ethics. The collected data was checked for its completeness each day. Supervision was made in each day through onsite presence. All paper-based data and consents were stored in a dry and locked cabinet.

## Data Availability

All participants were given consent to publish the collected data. The datasets used and analyzed during the current study available from the corresponding author on reasonable request.

## Method of Data Analysis

The data were entered, cleaned, and coded using Epi Info version 7 and Microsoft Excel. Subsequently, the dataset was exported to SPSS version 26 for further statistical analysis. All necessary variable recoding and transformations were performed before the final analysis.

Descriptive statistics such as frequencies and cross-tabulations were used to summarize categorical variables, while means and standard deviations were used to describe continuous variables. Descriptive results were presented in frequency tables.

A binary logistic regression model was employed as the primary method of analysis to examine the association between presbyopia and independent variables. Crude associations were assessed using odds ratios (ORs) with 95% confidence intervals (CIs).

Variables with a p-value  $< 0.25$  in the univariable logistic regression were included in the multivariable logistic regression model. The model's goodness of fit was checked, and a p-value  $\leq 0.05$  was considered the threshold for statistical significance.

## Ethical Considerations

This study was conducted in accordance with the declaration of Helsinki. Ethical approval was secured from Institution Review Board (IRB) of Amhara Public Health Institute (APHI) with reference number APHI/e/da/ke-03/21/2024. Permission letter from zonal and North Mecha woreda health offices was received. Informed consent was also secured from every respondent. Any information taken from the participants was kept confidential. The right of participant, who are not willing, was respected. Presbyopia and other cases who want to get a treatment service during data collection period were referred to health centers. We use codes rather than names of the participant while we are processing and reporting the data.

## Results

### Socio Demographic Characteristics of the Respondents

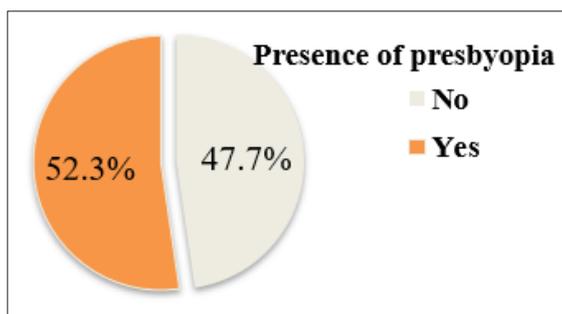
A study was conducted from a total of 520 respondents with response rate of 95.4%. The mean age ( $\pm$ SD) was 49.2 (9.8) years. Females constitute 257(51.3%) of all respondents. Almost half of respondents 271 (52.1%) resides in urban area. Regarding to their education, 246 (47.3%) are not able to read and write. Median (IQR) annual incomes of respondents were ETB 20,000 (40,000). (Table 1)

**Table 1: Socio Demographic Characteristics of the Study Participants, of Elderly People in North Mecha, 2024, North West Ethiopia**

Variables	Categories	Total (%)
Age	Less than 55years	404 (77.7)
	55 up to 70 years	85 (16.3)
	Greater than 70 years	31 (6)
Sex	Male	253(48.7)
	Female	267(51.3)
Marital status	Single	9(1.7)
	Married	458(88.1)
	Widowed	23(4.4)
	Divorced	30(5.8)
Educational status	Can't read and write	246 (47.3)
	Read and write/religious	41 (7.9)
	Primary education (1-8)	15 (2.9)
	Grade 8th complete	2 (0.4)
	Secondary education (9-12)	28 (5.4)
	College/Technic diploma	41 (7.9)
Occupation	Has no work	31 (6)
	Mainly farmer	180 (34.6)
	Employed work (teacher, nurse...)	150 (28.8)
	Mainly private organization (merchant, shop keeper)	33 (6.3)
	Student	2 (0.4)
	House wife	113 (21.7)
	Priest /daily labourer	11 (2.1)
Residence	Urban	271 (52.1)
	Rural	249 (47.9)
Religion	Orthodox	501 (96.3)
	Muslim	18 (3.5)
	Protestant	1 (0.2)

**Eye examination and Related Data**

The prevalence of presbyopia was found 52.3%, [95%, CI, 48.1% – 56.7%] among 40 and above respondents (Figure 1). In addition, 49 (9.4%) of participants was identified with eye diseases other than presbyopia.



**Figure 1: Participants Near Vision Status, North West Ethiopia, 2024**

Almost all, 513 (98.7%), had not been experienced an eye trauma. Nearly one fourth, 139 (26.7%) have troubled reading small prints

and/or seeing pictures on a coin. More than one fifth 120 (23.1%), had an eye symptom such as, eye strain, itching, swelling etc. Regarding to their vision, 217 (41.7%) of respondents had vision difficulty at night. (Table 2).

**Table 2: Eye Examination and Related Data of Participants in North Mecha, North West Ethiopia, 2024 (n=520)**

Variables	Categories	Frequency (%)
History of eye trauma	No	513 (98.7)
	Yes	7 (1.3)
Trouble in reading (seeing) small print	No	381 (73.3)
	Yes	139 (26.7)
Antipsychotic medication intake	No	508 (97.7)
	Yes	12 (2.3)
Family history of other vision impairing problems	No	512 (98.5)
	Yes	8 (1.5)
Eye symptoms (eye strain, itching, swelling)	No	400 (76.9)
	Yes	120 (23.1)
previous eye surgeries	No	501 (96.3)
	Yes	19 (3.7)
Chronic disease history	No	513 (98.7)
	Yes	7 (1.3)
Vision difficulty at night	No	303 (58.3)
	Yes	217 (41.7)
A change in focusing objects at near distances	No	295 (56.7)
	Yes	225 (43.3)
Childhood eye problems	No	509 (97.9)
	Yes	11 (2.1)

**Knowledge about presbyopia**

A majority of respondents, 367 (70.4%), had neither heard of nor known about presbyopia. Additionally, 353 (67.9%) believed that presbyopia cannot be diagnosed by a health care professional at a health center. Over half, 309 (59.4%), were unaware of available treatment options for presbyopia (Table 3).

**Table 3: Knowledge about Presbyopia of Participants in North Mecha, Ethiopia, 2024 (n=520)**

Variables	Categories	Frequency (%)
Know/hear about presbyopia	No	367 (70.4)
	Yes	153 (29.4)
Know the common symptoms of presbyopia	No	385 (74.0)
	Yes	135 (26.0)
Know presbyopia risks	No	385 (74.0)
	Yes	135 (26.0)
Belief that presbyopia can be diagnosed by health professionals at health centers	No	353 (67.9)
	Yes	167 (32.1)
Know the treatment options available for presbyopia	No	309(59.4)
	Yes	211(40.6)
Know presbyopia can impact daily activities	No	287 (55.2)
	Yes	233(44.8)

### Service-Related Factors

From a total of 520 study participants, only 25(4.8%) of them ever had an eye examination for presbyopia. Also, only 8 (1.5%) of participants have a schedule for eye exam. Many 438 (84.2%) of participants had no interest to wear (try) a reading eye glasses. Almost all 518(99.5%) have no insurance for their eye examinations (Table 4)

**Table 4: Service-Related Factors of Participants in North Mecha, North West Ethiopia, 2024 (n=520)**

Variable	Category	Frequency (%)
Ever had an eye exam to determine presbyopia status	No	495 (95.2)
	Yes	25 (4.8)
Having a schedule for eye exam	No	512 (98.5)
	Yes	8 (1.5%)
Interested in trying reading glasses, bifocals, or progressive lenses	No	438 (84.2)
	Yes	82 (15.8)
Having insurance coverage that helps the cost of vision exams	No	518 (99.5)
	Yes	2 (4)

### Life Style Factors

The majority of respondents, 476 (91.5%), did not consume alcohol on a daily basis. Nearly all respondents had never smoked cigarettes (99.5%) and did not engage in regular physical exercise (97.9%) (Table 5).

**Table 6: Bi-Variable and Multivariable Binary Logistic Regression for Presbyopia Associated Factors Among of Elderly Participants in North Mecha, North West Ethiopia, 2024 (n=520)**

Variables and Categories	Presbyopia		COR [95%CI]	AOR [95%CI]
	Yes (%)	No (%)		
<b>Age</b>				
40 up to 54 years	197	207	Reference	Reference
55 up to 70 years	60	25	2.5 [1.5 – 4.2]	2.8 [1.6 - 4.8] *
Greater than 70 years	15	16	1 [0.5 – 2]	1.4 [0.6 – 3]
<b>History of eye symptoms</b>				
No	169	230	Reference	Reference
Yes	103	17	8.3 [4.8 – 14.3]	7.5 [4.3 – 13.1] *
<b>Knowledge about presbyopia</b>				
No	158	186	Reference	Reference
Yes	114	62	2.2 [1.5 – 3.1]	1.7[1.1 - 2.6] *

Note: \*= significant at multivariable analysis (p≤0.05).

### Discussion

This study aimed to determine the prevalence of presbyopia and its associated factors among individuals aged 40 years and above in North Mecha district, Ethiopia. The prevalence of presbyopia was found to be relatively high, at 52.3%. This prevalence is lower than that reported in studies conducted in Gondar city (27), Bahir Dar city (28) and in Debre Tabor (29), all in Ethiopia. The variation may be attributed to differences in study populations; those studies focused exclusively on school teachers, a group likely to be more health-aware and possibly more exposed to visual demands, whereas the current study included a broader, community-based sample representing the general population.

Conversely, the prevalence observed in our study is consistent with findings from a study conducted in Hawassa city, Ethiopia. (20) which included participants aged 35 years and older. Although there is a five-year age difference in inclusion criteria, the similarity in findings suggests that the burden of presbyopia is considerable even within slightly different age brackets in diverse community settings.

This finding reveals presbyopia was associated with an increase in age. This agreed with a study done in Gonder Ethiopia, in Tanzania, and in Nigeria [27,30,31]. It aligns with established physiological evidence showing that the human lens progressively loses elasticity

**Table 5: Life Style Assessment of Participants in North Mecha, North West Ethiopia, 2024 (n=520)**

Variable	Category	Total %
Alcohol intake always (daily)	No	476(91.5)
	Yes	44(8.5)
Smoking cigarette/or other	No	518(99.5)
	Yes	2(4)
Regular physical exercise	No	509 (97,9)
	Yes	11(2.1)

### Factors Associated with Presbyopia

Age, educational status, residence, knowledge about presbyopia, alcohol intake, previous eye surgeries, and presence of underlying health conditions had significant (at p<0.25) at uni variable logistic regression.

A multivariable binary logistic regression result shows participants whose age was in range 55 up to 70 years were 2.8 times more likely to develop presbyopia than 40 up to 54 years old participants (AOR=2.8, 95%CI: 1.6 - 4.8). Participants who had history of eye symptoms were 7.5 more likely to develop presbyopia compared with participants with no history of eye symptoms (AOR=7.5, 95% CI: 4.3 – 13.1). Participants assessed with having Knowledge about presbyopia had 70% more presbyopic than poor knowledgeable participants (AOR=1.7, 95%CI: 1.1 - 2.6) (Table 6).

with age, leading to a diminished ability to focus on near objects. Therefore, this association is expected and reinforces the well-known age-related nature of presbyopia [32].

Participants with a history of eye-related symptoms—such as eye strain, headache, and eye swelling—showed a positive association with presbyopia. Although this study did not investigate underlying conditions, existing evidence suggests that factors such as hyperopia (farsightedness), the use of certain medications (e.g., anti-allergic and antipsychotic drugs), and chronic illnesses like anemia and diabetes may increase the risk of developing presbyopia. Therefore, the reported symptoms may reflect the influence of these unmeasured risk factors.

Having knowledge about presbyopia was associated with presbyopia. This contradicts with a study done in Gonder Ethiopia [27]. Which shows unawareness is associated with untreated presbyopia. However, this was supported by a study done in Oman. There is a great shift of knowledge before the assessment and after treatment (+21%) among study participants. This finding indicates that participants primarily became aware of presbyopia through personal diagnosis. Their knowledge was acquired after developing the condition, possibly through health education provided during the diagnostic encounter or by inquiring about their symptoms. This suggests a significant lack of presbyopia-related awareness in the community, highlighting the need for broader public health education efforts.

#### **Limitation of the Study**

Severity grading of presbyopia, Visual acuity, detail eye examination and screening for chronic diseases (like anemia, DM...) was not measured.

#### **Conclusions**

Presbyopia was found to be prevalent among individuals aged 40 years and above, with more than half of the participants affected. The study identified increasing age, limited knowledge about presbyopia, and a reported history of eye symptoms as significant factors associated with the condition. These findings underscore the need for community-based screening programs and targeted awareness campaigns to reduce the burden of presbyopia and enhance early detection and management.

#### **Competing Interest**

The authors confirm that there is no competing interest.

#### **Authors and Contributions**

AA and MK wrote the proposal, led the overall data collection and management, and wrote the manuscript. GW and BG give scientific advice and, supervision starting from the conception up to the final draft. BA was doing the analysis and reviewing all drafts.

#### **Funding**

There is no available funding for this research

#### **Acknowledgements**

We would love to acknowledge North Mecha Woreda health office staffs and administrators from region to kebele level, HEWs, data collectors and study participants.

#### **References**

1. Raab EL (2016) Accommodative ET-High AC/A Ratio Esotropia: The Case for Glasses. *The American orthoptic journal* 66: 1-4.
2. Gibbons A, Ali TK, Waren DP, Donaldson KE (2016) Causes and correction of dissatisfaction after implantation of presbyopia-correcting intraocular lenses. *Clinical ophthalmology* 10: 1965-1970.
3. Mohamud A, Erichsen J, Kessel L, Holm L, Larsen M et.al. (2019) Presbyopia treatment. *Ugeskrift for laeger* 181: V06180461.
4. Healthline.
5. Wolffsohn JS, Bhogal G, Shah S (2011) Effect of uncorrected astigmatism on vision. *Journal of cataract and refractive surgery* 37: 454-460.
6. (2019) World report on vision. World Health Organization <https://www.who.int/docs/default-source/documents/publications/world-vision-report-accessible.pdf>.
7. Berdahl J, Bala C, Dhariwal M, Lemp-Hull J, Thakker D, et al. (2020) Patient and Economic Burden of Presbyopia: A Systematic Literature Review. *Clin Ophthalmol* 14: 3439-3450.
8. Fricke TR, Tahhan N, Resnikoff S, Papas E, Burnett A, et al. (2018) Global prevalence of presbyopia and vision impairment from uncorrected presbyopia: systematic review, meta-analysis, and modelling. *Ophthalmology* 125: 1492-1499.
9. Steinmetz JD, Bourne RR, Briant PS, Flaxman SR, Taylor HR, et al. (2021) Causes of blindness and vision impairment in 2020 and trends over 30 years, and prevalence of avoidable blindness in relation to VISION 2020: the Right to Sight: an analysis for the Global Burden of Disease Study. *The Lancet Global Health* 9: 144-160.
10. Uche JN, Ezegwui IR, Uche E, Onwasigwe EN, Umeh RE, et.al. (2014) Prevalence of presbyopia in a rural African community. *Rural and remote health* 14: 2731.
11. Holden BA, Tahhan N, Jong M, Wilson DA, Fricke TR, et al. (2015). Towards better estimates of uncorrected presbyopia. *SciELO Public Health* 93: 667.
12. Patel I, West SK (2007) Presbyopia: prevalence, impact, and interventions. *Community eye health* 20: 40-41.
13. Nina Tahhan B, Eric Papas P, Timothy R, Fricke B, Kevin D et.al. (2013) Frick P, Brien A. Holden P. Utility and Uncorrected Refractive Error. *Ophthalmology of science* 20: 1745-1755.
14. Jalali S, Aus der Au W, Shaarawy T (2016) AcuFocus Corneal Inlay to Correct Presbyopia Using Femto-LASIK. One Year Results of a Prospective Cohort Study. *Klinische Monatsblätter für Augenheilkunde* 233: 360-364.
15. Chan VF, MacKenzie GE, Kassalow J, Gudwin E, Congdon N et.al. (2018) Impact of Presbyopia and Its Correction in Low- and Middle-Income Countries. *The Asia-Pacific Journal of Ophthalmology* 7: 370-374.
16. (2021) Blindness and vision impairment fact sheet. WHO <https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment>.
17. Charman WN (2014) Developments in the correction of presbyopia I: spectacle and contact lenses. *Ophthalmic and Physiological Optics* 34: 8-29.
18. Wolffsohn JS, Davies LN (2019) Presbyopia: Effectiveness of correction strategies. *Progress in retinal and eye research* 68: 124-143.
19. Hickenbotham A, Roorda A, Steinmaus C, Glasser A (2012) Meta-analysis of sex differences in presbyopia. *Investigative*

- ophthalmology & visual science 53: 3215-3220.
20. Munaw MB, Kebede BN, Adimassu NF (2020) Unmet need for presbyopia correction and its associated factors among school teachers in Hawassa city, South Ethiopia. *BMC ophthalmology* 20: 1-8.
  21. Andualem HB, Assefa NL, Weldemichael DZ, Tefera TK (2017) Prevalence and associated factors of presbyopia among school teachers in Gondar city, Northwest Ethiopia, 2016. *Clinical optometry* 9: 85-90.
  22. Girum M, Desalegn Gudeta A, Shiferaw Alemu D (2017) Determinants of high unmet need for presbyopia correction: a community-based study in northwest Ethiopia. *Clinical optometry* 9: 25-31.
  23. Fekadu S, Assem A, Mengistu Y (2020) Near Vision Spectacle Coverage and Associated Factors Among Adults Living in Finote Selam Town, Northwest Ethiopia: Community-Based Cross-Sectional Study. *Clinical ophthalmology* 14: 3121-3130.
  24. (2023) Federal Democratic Republic of Ethiopia Central Statistical Agency Addis Ababa. Population projection of Ethiopia for all regions at Wereda level.
  25. Du Toit R (2006) How to prescribe spectacles for presbyopia. *Community eye health* 19: 12-3.
  26. Andualem HB, Assefa NL, Weldemichael DZ, Tefera TK (2017) Prevalence and associated factors of presbyopia among school teachers in Gondar city, Northwest Ethiopia, 2016. *Clinical optometry* 9: 85-90.
  27. Girum M, Desalegn Gudeta A, Shiferaw Alemu D (2017) Determinants of high unmet need for presbyopia correction: a community-based study in Northwest Ethiopia. *Clinical optometry* 9: 25-31.
  28. Yalew AB, Alemu HW, Alemayehu AM (2023) Factors Affecting Unmet Need for Presbyopia Correction Among School Teachers in Debre Tabor Town, Northwest Ethiopia. *Clinical optometry* 15: 129-138.
  29. Burke AG, Patel I, Munoz B, Kayongoya A, Mchiwa W, et al. (2006) Population-based study of presbyopia in rural Tanzania. *Ophthalmology* 113: 723-727.
  30. Umar MM, Muhammad N, Alhassan MB (2015) Prevalence of presbyopia and spectacle correction coverage in a rural population of North West Nigeria. *Clinical ophthalmology* 9: 1195-1201.
  31. Rogers K (2017) Presbyopia. *Encyclopedia Britannica* <https://www.britannica.com/science/presbyopia>.
  32. Karakus S (2025) Presbyopia. *Hopikns J* <https://www.hopkinsmedicine.org/health/conditions-and-diseases/presbyopia>.
  33. Ali Al-Alshidi AS, Vankudre GS (2019) Knowledge Impact of the Contextual Presbyopia Education on the At-Risk Population of Saham, Oman. *Al-Basar International Journal of Ophthalmology* 6: 1-5.

**Copyright:** ©2025 Melese Kitu. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.