Research Article

Knowledge towards Strabismus and Associated Factors among Adults in Gondar Town, Northwest Ethiopia

Aragaw kegne Assaye, Melkamu Temeselew Tegegn, Natnael Lakachew Assefa, and Betelhem Temesgen Yibekal

Department of Optometry, School of Medicine, College of Medicine and Health Science, University of Gondar, Gondar town, Ethiopia

Correspondence should be addressed to Betelhem Temesgen Yibekal; betelhemtemesgen28@gmail.com

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1. Introduction

Eyes are well aligned, so the foveae (corresponding retinal focus point) are aimed at the same visual target; this is termed as orthophoria. Due to different factors, eyes are deviated from its normal position, alternatively termed as strabismus, squint, oblique eye, or heterotropia. These terms come from the fact that strabismic patients often squint one eye to block out one of the two images that they see. Therefore, strabismus is an ocular misalignment in a different direction of gaze, or the eyes are not properly aligned with each other, whether caused by abnormalities in binocular vision or by anomalies of neuromuscular control of ocular motility [1–4].

Globally, the prevalence ranges from 2 to 6% [5–7]. The prevalence of strabismus was found to be 3.3% in whites, 2.1% in African American children [8], 1–4% in African [9–12], 2.4% in UK, [7] 2% in south East Iran [13], 3.1% in Sweden, [7] 5% in Saudi Arabia [14], 2.8% in Australia [7], 5.9% in Tanzania [10], 2.8% in Sudan [11], and 1.53% in Ethiopia [12].

Strabismus can develop at any age but usually develops during childhood, before 6 years of age; the peak age of onset is around 3 years. Strabismus in adulthood frequently occurs...
secondary to either systemic disease or mechanical damage such as trauma or brain tumor [15, 16].

The risk factors of strabismus are uncorrected refractive error, maternal health, premature birth, low birth weight, developmental delay, syndromes (a group of disease), genetic factors, systemic illnesses, and mechanical agents [16, 17].

Strabismus can be managed with eyeglasses, prisms, surgery, eye exercises, and medicines [16]. If left untreated, it results in abnormal fixation, double vision, abnormal head posture, and lazy eye (amblyopia). Untreated strabismus can also cause psychosocial effects, low performance in school, loss of confidence and self-esteem, and inability in employment and social stigma [18, 19].

In order to tackle such problems, parents/guardians should have good knowledge of the nature of strabismus/ squint because most of them do not know the appropriate and effectiveness of the treatment [9, 20].

Studies conducted in different regions of the world showed that there is a knowledge gap about strabismus. In India, 94.7% of participants had knew the consequence of strabismus [21], in Jeddah, 75% of participants knew etiologies [22], in Nigeria, 50% of participants did not know strabismus [23], and in Ethiopia, only 37.2% knew the cause of strabismus [9].

There were studies conducted on the prevalence and psychological effects of strabismus. Knowledge among adults towards strabismus is critical for children’s health because it is important for early prevention of visual impairments, to decrease psychological trauma, to lessen the economic burden, to avoid social stigma, and to minimize poor school performance and unemployment. Despite all these uses, little is known about strabismus in Ethiopia in general and in the study area specifically. So, this study can give baseline information on strabismus and associated factors.

2. Materials and Methods

2.1. Study Design and Period. A community-based cross-sectional study was conducted from April 17 to May 01, 2019.

2.2. Study Setting. The study was conducted in Gondar town. Gondar town is located in Northwest Ethiopia. It is located 748 km from the capital, Addis Ababa, and 182 km from Bahir Dar, the capital of Amhara Regional State. According to Gondar town statistics agency, 2016/17 projection has a population size of 351,675, out of which 168,993 are males and 182,682 are females. According to North Gondar information and statistics agency, the town is subdivided into 6 subcities and 24 city kebeles, holding approximately 53,725 households. The health coverage was 30% in 2007 [24]. There is one government hospital, University of Gondar Tertiary Eye Care and Training Centre (UoGTETC), which provides different specialty eye care services and give training for ophthalmologists, optometrists, and ophthalmic nurses. In the town, there are three private eye care clinics.

2.3. Sample Size and Sampling Technique. A total of 593 samples was determined using single population proportion formula by assuming 95% confidence level, 5% margin of error, 10% nonresponse rate, design effect 1.5, and the proportion of good knowledge from a similar study conducted in central Ethiopia, Cheha district (37.2%) [9].

A multistage sampling technique was employed. Six kebeles were selected from 24 kebeles by a simple random sampling technique. In selected kebeles, there were 189, 675 adult populations and 12,952 households. Proportion allocation was used to determine the sample size in each kebele. Households in each kebele were selected by a systematic random sampling method using a sampling fraction (K) of 22. One adult was selected using a lottery method from one household if there were two or more adults per household to obtain a final sample. All adults aged ≥18 years had an equal likely chance to participate in this survey. Nevertheless, those adults who had a mental illness and unable to speak were excluded.

2.4. Data Collection Tool and Procedure. Data were collected through face-to-face interviews, using a pretested structured hard copy questionnaire. It has questions for sociodemographic characteristics, past ocular history-related factors, source of information socioeconomic factors, and knowledge-related questions such as definition, risk factor, treatment, and consequence of strabismus after reviewing the related literature.

The original questionnaire was translated from English to Amharic version and then translated back to English by two independent local language translators to maintain its consistency and accuracy. The interview was conducted by 8 BSc nurses.

2.5. Operational Definitions

2.5.1. Knowledge. The knowledge of respondents was assessed through different dimensions of strabismus, including definitions, causes, treatment, and consequences that scale up 28 points. Each correct response scored as 1 and the incorrect one was coded as 0 (zero).

(1) Good Knowledge. Respondents who answered greater than or equal to the median score of knowledge-related questions were said to have good knowledge, otherwise, poor knowledge.

(2) Adults. Individuals with age of 18 years and older [25].

(3) Role in the Community. Those participants having responsibility and in position in a local area such as kebele leader and religious leader.

2.6. Data Quality Control. The training was given for data collectors before the beginning of data collection. The questionnaire was pretested on 5% of the sample size outside the study area. Also, data clean up, checking for data completeness, outliers, and missing values, and supervision were carried out.
2.7. Data Processing and Analysis. Data from the entire questionnaire were coded, entered into Epi info version 7, and exported to SPSS version 20 for processing and analysis. Frequency, statistical summary, and cross-tabulations were used for the descriptive analysis of the entered data. Binary logistic regression was used to identify factors associated with knowledge about strabismus. All the variables were entered into multivariable logistic regression, and P value <0.05 was taken as statistically significant. The model fitness was checked according to Hosmer and Lemeshow goodness of fit. Finally, the analyzed result was presented using tables and charts.

2.8. Ethical Consideration. Ethical clearance was obtained from University of Gondar College of Medicine and Health Sciences, School of Medicine, ethical review committee. After informing about the objective of the study, verbal informed consent was obtained from each study participant. The questionnaires did not require the identifiers of the participants. Confidentiality of the information obtained was assured and maintained anonymous. Participants who had strabismus or any vision threatening eye problems were strongly advised to visit Gondar University Tertiary Eye care and Training Center Hospital. The collected data were securely locked.

3. Results

3.1. Sociodemographic Characteristics of the Study Participants. A total of 553 among 593 participants who were living in Gondar town took part in the study with a response rate of 93.25%.

Of the total participants, 53.7% (297) were males. The median age of the study participants was 33 (IQR = 14) years. Most (81.4% (450)) of the study participants were orthodox Christian. Half (50.7% (305)) of the participants were employed. Of the total participants, 39.8% (308) were married. The median monthly income was 3800 ETB (IQR = 2500, Q1 = 2500, Q3 = 5000). More than half (65.3% (393)) of the participants had an education level of college and above (Table 1).

3.2. Proportion of Knowledge towards Strabismus among Study Participants. Out of 553 study participants, 52.30% (289) (95% CI: 47.9–56.4) had good knowledge about strabismus.

Among study participants who had heard about strabismus, 15 (2.7%) did not know what strabismus is. Of the study participants, the most perceived definition, cause, treatments, and consequences of strabismus were as follows: two eyes not coordinated, 72.0% (398), exposure to sunlight/lamp, 66.4% (367), surgery, 57.1% (316), and poor cosmetics, 82.1% (347), respectively (Table 2). The most frequently mentioned source of information was from families/relatives, 42% (232), followed by radio/television, 37.4% (207), and the least one was from Internet, 15.65% (86) (Figure 1).

3.3. Factors Associated with Level of Knowledge towards Strabismus. The result of multivariable logistic regression showed that occupations and monthly income were significantly associated with knowledge about strabismus.

Those participants who were students were 2.15 times more likely to have good knowledge than those who were employed (AOR = 2.15, (95% CI: 1.11–4.13). Participants who earn a monthly income of >5000 birr were 54% less likely to have good knowledge about strabismus compared to those who get <2500 birr (AOR = 0.48, (95% CI: 0.26–0.46)) (Table 3).

4. Discussion

This is perhaps the first study in the Amhara region and the second in Ethiopia to estimate the level of knowledge
among adults towards strabismus in Gondar town, Northwest Ethiopia. In this study, 553 participants were included, of whom 52.3% (95% CI: 47.9–56.4) of participants had good knowledge regarding strabismus. This result was higher than a study conducted in Cheha district of Central Ethiopia (37%) [9]. This may be due to the difference in sociodemographic characteristics of the participants since 51.7% of participants were illiterate in Cheha study but only 9% of this study participants were illiterate [9]. On the contrary, the current study finding was lower than a study conducted in Kenya (69.60%) [26]. This is due to the difference in the study setting since these studies were hospital-based.

Participants who had monthly income $>5000$ birr were 54% less likely to have good knowledge as compared to those who had $<2500$ birr. This may be due to those having a high amount of monthly income such as merchants (46.42%) who might work for long hours, which may hinder them to access available information. Participants who were students were 2.15 times more likely to have good knowledge than those who were government employees. This may be due to students who were observed in this study who used a different source of information such as the Internet and mass media, which help them to get more knowledge about strabismus.

Regarding different dimensions of strabismus, proportions of participants’ knowledge about the alternative definitions (43–72%), causes (15–30%), treatments (39–57%), and consequences (29–82%) were higher than in a study conducted in Cheha district, central Ethiopia, showing knowledge about the causes (4.3–37.2%), treatments (32%), and consequences (3.8–43%). This study result is also higher than a study conducted in Nigeria (46%) [23]. This may be due to the difference in the study population who were agrarian and rural dwellers, which made them less aware of strabismus. However, this finding was lower than a study conducted in Jeddah (60–79%), India (94.7%), and Saudi (66.7%) [21, 22, 27]. This is due to the difference in the study setting since these studies were hospital-based.

Table 2: Participants response regarding different dimensions of strabismus ($n = 553$).

| Different dimensions of strabismus | Response of participants | | | |
|---|---|---|---|
| **Definitions** | **Correct response** | **Incorrect response** |
| | Frequency ($n$) | Percentage (%) | Frequency ($n$) | Percentage (%) |
| One eye misalignment | 240 | 43.4 | 313 | 56.6 |
| Two eye misalignment | 268 | 48.5 | 285 | 51.5 |
| Laziness of an eye | 312 | 56.4 | 241 | 43.6 |
| Abnormal eye movements | 176 | 31.8 | 377 | 68.2 |
| Two eyes not coordinated | 399 | 72.2 | 154 | 27.8 |
| Optic nerve degenerations | 120 | 21.7 | 433 | 78.3 |
| **Causes/risk factors** | | | | |
| Heredity | 88 | 15.9 | 465 | 84.1 |
| Trauma | 182 | 32.9 | 371 | 67.1 |
| Other eye disease | 170 | 30.7 | 383 | 69.3 |
| Cataract | 93 | 16.8 | 460 | 83.2 |
| Nutritional deficiency | 285 | 51.5 | 268 | 49.5 |
| Exposure to lamp/light | 112 | 20.3 | 441 | 79.7 |
| Prematurity | 28 | 5.1 | 525 | 94.9 |
| Fever during infancy | 306 | 55.3 | 245 | 44.7 |
| Redness | 373 | 67.5 | 180 | 32.5 |
| Beliefs | 424 | 76.7 | 129 | 23.3 |
| **Treatment** | | | | |
| Eye glasses | 219 | 39.6 | 334 | 60.4 |
| Surgery | 316 | 57.1 | 237 | 42.9 |
| Eye muscle exercise | 95 | 17.2 | 458 | 82.8 |
| Patching better eye | 249 | 45 | 304 | 55 |
| Resolves by its self | 393 | 71.1 | 160 | 28.9 |
| Eye drops | 299 | 54.1 | 254 | 45.9 |
| **Consequences** | | | | |
| Amblyopia | 349 | 62.9 | 205 | 37.1 |
| Poor in school performance | 217 | 39.2 | 336 | 60.8 |
| Social stigma | 225 | 46.1 | 298 | 53.9 |
| Poor cosmetics | 454 | 82.1 | 99 | 17.9 |
| Self-depression | 320 | 57.9 | 233 | 42.1 |
| Dependency | 161 | 20.1 | 392 | 79.9 |
preventive or screening programs. Gaining knowledge from the relative (38.5%) or friends (37.5%) was the predominant source of information about strabismus. Interestingly, the Internet and radio/TV constituted a considerable proportion of reliable knowledge sources. This may be due to the messages delivered through radio/TV in a coherent and scientific manner. This was typically consistent with another study in India, Saudi, and Jeddah [21, 22, 27], in which both radio/TV and the Internet were the reliable sources of knowledge than relatives/friends.

Regarding factors, some studies did not analyze the association between all presumed factors and the overall knowledge level, rather to different dimensions of knowledge about strabismus. For example, in Cheha district, Central Ethiopia [9], age and educational status were significantly associated with the knowledge of treatment but not to the causes of strabismus. This makes a comparison of this study results with other studies difficult since the association between the overall knowledge and different factors is considered in this study.

### Table 3: Factors associated with knowledge towards strabismus among adults in Gondar town, Northwest Ethiopia, 2019.

| Variables                  | Knowledge level | COR (95% CI) | AOR (95% CI) |
|----------------------------|-----------------|--------------|--------------|
|                            | Good | Poor |                |                |
| **Age**                    |      |      |                |                |
| 18–28                      | 90   | 85   | 1             | 1             |
| 29–39                      | 109  | 85   | 1.21 (0.80, 1.82) | 1.56 (0.94, 2.56) |
| 40–49                      | 56   | 61   | 0.87 (0.54, 1.38) | 1.27 (0.69, 2.36) |
| 50–59                      | 20   | 22   | 0.86 (0.44, 1.68) | 1.27 (0.56, 2.88) |
| >60                        | 14   | 11   | 1.20 (0.52, 2.79) | 1.98 (0.63, 6.17) |
| **Gender**                 |      |      |                |                |
| Male                       | 151  | 146  | 1.13 (0.81, 1.58) | 1.13 (0.76, 1.68) |
| Female                     | 138  | 118  | 1.13 (0.81, 1.58) | 1.13 (0.76, 1.68) |
| **Marital status**         |      |      |                |                |
| Married                    | 161  | 147  | 1             | 1             |
| Single                     | 118  | 102  | 1.06 (0.75, 1.49) | 0.82 (0.52, 1.28) |
| Widowed                    | 5    | 8    | 0.57 (0.18, 1.78) | 0.42 (0.12, 1.44) |
| Divorced                   | 5    | 7    | 0.65 (0.20, 2.10) | 0.63 (0.19, 2.12) |
| **Income**                 |      |      |                |                |
| 500–2500                   | 80   | 61   | 1             | 1             |
| 2501–3800                  | 77   | 61   | 0.96 (0.60, 1.54) | 0.95 (0.57, 1.57) |
| 3801–5000                  | 81   | 59   | 1.05 (0.65, 0.68) | 0.98 (0.59, 1.62) |
| >5000                      | 51   | 83   | 0.47 (0.29, 0.76) | 0.44 (0.26, 0.76)** |
| **Education level**        |      |      |                |                |
| No formal education        | 26   | 24   | 1             | 1             |
| Primary school             | 9    | 8    | 1.04 (0.54, 3.13) | 1.05 (0.32, 3.42) |
| Secondary school           | 59   | 60   | 0.91 (0.47, 1.76) | 0.89 (0.40, 1.95) |
| College/university         | 195  | 172  | 1.05 (0.56, 1.89) | 1.20 (0.55, 2.62) |
| **Occupations**            |      |      |                |                |
| Employee                   | 146  | 144  | 1             | 1             |
| Merchant                   | 42   | 42   | 0.99 (0.61, 1.60) | 1.35 (0.76, 2.40) |
| Student                    | 49   | 30   | 1.61 (0.97, 2.68) | 2.15 (1.11, 4.13)** |
| Housewife                  | 28   | 29   | 0.95 (0.54, 1.68) | 0.98 (0.46, 2.08) |
| Unemployed                 | 12   | 10   | 1.18 (0.50, 2.83) | 1.41 (0.54, 3.66) |
| Others                     | 12   | 9    | 1.31 (0.54, 3.22) | 1.38 (0.46, 4.10) |
| **Role in the community**  |      |      |                |                |
| Had role                   | 16   | 19   | 0.76 (0.38, 1.50) | 0.87 (0.42, 1.81) |
| No role                    | 273  | 245  | 1             | 1             |
| **Health insurance**       |      |      |                |                |
| No                         | 267  | 246  | 1             | 1             |
| Yes                        | 18   | 22   | 1.13 (0.59, 2.15) | 1.01 (0.51, 2.02) |
| **Previous eye examinations** |    |      |                |                |
| No                         | 199  | 176  | 1             | 1             |
| Yes                        | 90   | 88   | 0.90 (0.63, 1.29) | 0.91 (0.61, 1.35) |
| **Eye health care training** |    |      |                |                |
| No                         | 279  | 258  | 1             | 1             |
| Yes                        | 10   | 6    | 1.54 (0.55, 4.30) | 1.43 (0.49, 4.14) |

**P < 0.05.**
5. Conclusion

The overall knowledge score of the study participants was moderate. More than half of the study participants had good knowledge about strabismus. It was found that being a student and having high monthly income had a statistically significant association with knowledge about strabismus. Since the type and source of information were extremely important for reliability and the level of knowledge, it is better to improve the availability of media coverage such as radio, TV, and Internet.

Data Availability

All necessary data are included within the manuscript.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

References

[1] K. W. Wright, “Binocular vision and introduction to strabismus,” in *Pediatric Ophthalmology and Strabismus*, pp. 144–156, Springer, New York, NY, USA, 2003.
[2] S. R. Hatt and L. Gnanaraj, “Intervention for intermittent exotropia,” *Cochrane Database of Systematic Reviews*, vol. 3, no. 5, 2013.
[3] W. Bian, L. I. Min, Z. Wang, X. Wang, Y. Liu, and Y. Wu, “Psychometric properties of the Chinese version of ambylopaia and strabismus questionnaire (ASQUE),” *Health and Quality of Life Outcome*, vol. 13, no. 1, 2015.
[4] American Academy of Ophthalmology, *Basic and Clinical Science Course Section 6: Pediatric Ophthalmology and Strabismus*, American Academy of Ophthalmology, San Francisco, CA, USA, 1990.
[5] X. Chen, Z. Fu, J. Yu et al., “Prevalence of ambylopaia and strabismus in eastern China: results from screening of preschool children aged 36–72 months,” *British Journal of Ophthalmology*, vol. 100, no. 4, pp. 515–519, 2016.
[6] K. Tubing, L. Usharani, T. Patton et al., “Study of concomitant strabismus amongst the ethnic population of Manipur,” *IOSR Journal of Dental and Medical Sciences*, vol. 13, no. 1, pp. 23–28, 2014.
[7] A. Bruce and G. Santorelli, “Prevalence and risk factors of strabismus in a UK multi-ethnic birth cohort,” *Strabismus*, vol. 24, no. 4, pp. 153–160, 2016.
[8] D. S. Friedman, M. X. Repka, J. Katz et al., “Prevalence of ambylopaia and strabismus in white and African American children aged 6 through 71 months the baltimore pediatric eye disease study,” *Ophthalmology*, vol. 116, no. 11, pp. 2128–2134, 2009.
[9] K. Tielsch and A. Bejiga, “Knowledge, attitude and practice towards strabismus in Cheha district, central Ethiopia,” *Ethiopian Journal of Health Development*, vol. 25, no. 3, pp. 212–215, 2011.
[10] L. Njambi, O. Rito, D. Kazim, and V. Sonia, “Prevalence and pattern of manifest strabismus in paediatric patients at CCBRT, dar es salaam, Tanzania,” *JOECSA*, vol. 21, no. 1, 2017.
[11] A. Taha and S. Ibrahim, “Prevalence of manifest horizontal strabismus among basic school children in Khartoum City, Sudan,” *Sudanese Journal of Ophthalmology*, vol. 7, no. 2, p. 53, 2015.
[12] A. T. Giorgis and A. Bejiga, “Prevalence of strabismus among pre-school children community in Butajira town,” *Ethiopian Journal of Health Development*, vol. 15, no. 2, pp. 125–130, 2001.
[13] M. Faghfhi, H. Ostadimoghaddam, and A. A. Yekta, “Ambylopaia and strabismus in Iranian schoolchildren, Mashhad,” *Strabismus*, vol. 19, no. 4, pp. 147–152, 2011.
[14] Y. H. Aldebari, “Prevalence of ambylopaia in primary school children in Qassim province, kingdom of Saudi Arabia,” *Middle East African Journal of Ophthalmology*, vol. 22, no. 1, p. 86, 2015.
[15] N. Kumari, A. K. Amitava, M. Ashraf, S. Grover, A. Khan, and P. Sonwani, “Prognostic preoperative factors for successful outcome of surgery in horizontal strabismus,” *Oman Journal of Ophthalmology*, vol. 10, no. 2, p. 76, 2017.
[16] R. P. Rutstein, M. S. Cogen, S. A. Cotter et al., *Optometric Clinical Practice Guideline Care of the Patient with Strabismus*.
Esotropia and Exotropia, American Optometric Association, St Louis, MO, USA, 2011.

[17] D. Robaei, K. A. Rose, A. Kifley, M. Cosstick, J. M. Ip, and P. Mitchell, “Factors associated with childhood strabismus,” Ophthalmology, vol. 113, no. 7, pp. 1146–1153, 2006.

[18] D. Satterfield, J. L. Keltner, and T. L. Morrison, “Psychosocial aspects of strabismus study,” Archives of Ophthalmology, vol. 111, no. 8, pp. 1100–1105, 1993.

[19] S. M. Mojon-Azzi, A. Kunz, and D. S. Mojon, “Strabismus and discrimination in children: are children with strabismus invited to fewer birthday parties?” British Journal of Ophthalmology, vol. 95, pp. 473–476, 2011.

[20] Multi-Ethnic Pediatric Eye Disease Study (MEPEDS) Group, “Prevalence and causes of visual impairment in African-American and Hispanic preschool children: the multi-ethnic pediatric eye disease study,” Ophthalmology, vol. 116, no. 10, pp. 1990–2000, 2009.

[21] A. Singh, V. Rana, S. Patyal, S. Kumar, S. Mishra, and V. Sharma, “To assess knowledge and attitude of parents toward children suffering from strabismus in Indian sub-continent,” Indian Journal of Ophthalmology, vol. 65, no. 7, p. 603, 2017.

[22] D. Bukhari, N. Alhibshi, N. Alzahrani, M. Aljohani, and F. Madani, “Awareness, perceptions and knowledge of strabismus among pediatrics and ophthalmology clinics attendees in king abdulaziz university hospital, Jeddah,” Annals of International medical and Dental Research, vol. 4, no. 2, 2018.

[23] M. A. Isawumi, M. Ulaikere, O. O. Adejumo, M. Adebayo, and R. Kekunnaya, “Awareness, perceptions and knowledge of strabismus among patients visiting a tertiary eye clinic in southwest Nigeria,” International Ophthalmology, vol. 34, no. 5, pp. 1037–1042, 2014.

[24] A. Abeba and P. Commission, Summary and Statistical Report of the 2007 Population and Housing Census, FAO, Rome, Italy, 2008.

[25] WHO, Considerations Regarding Legal Age of Consent in Vaccinating Children and Adolescents, WHO, Geneva, Switzerland, 2014.

[26] S. P. Wanyama, S. Marco, and M. Kariuki, “Knowledge, attitude and practice of eye diseases in children among paediatricians in Kenya,” JOECSA, vol. 19, no. 1, 2015.

[27] S. Alzuhairy, E. S. Alabdulrazaq, I. M. Alharbi, and D. H. Alharkan, “Knowledge and attitude towards strabismus among parents of Saudi children with strabismus,” International Surgery Journal, vol. 6, no. 2, pp. 438–442, 2019.