

# Knowledge, attitude and practice towards strabismus in Cheha District, Central Ethiopia

Kefale Geta, Abebe Bejiga

## Abstract

**Background:** Strabismus is the commonest cause of amblyopia that can be prevented or treated if detected early. Strabismus also causes psychosocial problems in both children and adults. It is clear that community's knowledge, attitude and practice dealing with strabismus affect the prevention of strabismic amblyopia and management of strabismus. Knowledge, attitude and practice dealing with strabismus have not been studied previously in Ethiopia.

**Objectives:** To assess knowledge, attitude and practice involving strabismus in Cheha District, Central Ethiopia.

**Methods:** A cross-sectional study was conducted from November 1 to November 28, 2007 in Cheha District in 10 randomly selected *kebeles* of the district. People aged 18 years and above from randomly selected households were interviewed about their knowledge, attitude and practice in dealing with strabismus.

**Results:** A total of 420 people were interviewed, of whom 198 (47.1%) were males and 222 (52.9%) were females. All participants reported to have seen a case of strabismus or heard about it, the source of information being family members or neighbors. In assessing their knowledge, 62.8% did not know the causes of strabismus and mentioned only misconceived causes like exposure to bright light. Of the total study population, 225 (53.6%) believed that there is no treatment for strabismus and 51.4% did not want to marry or allow marriage of relatives to a person with strabismus. When they were asked about what actions they would take if there was a case of strabismus in the family, 173 (41.2%) reported that they would not take any action since it cannot be treated, 134 (31.9%) said they would take to the hospital and 113 (29.9%) reported they would try modern medicine even though it cannot be treated.

**Conclusion:** A large proportion of adult population of Cheha District was found to have poor knowledge, attitude and practice regarding the causes and management of strabismus. Health education by health professionals and mass media is thus recommended. [*Ethiop. J. Health Dev.* 2011;25(3):212-215]

## Introduction

The term strabismus is derived from the Greek word strabismus, "to squint or look obliquely." Strabismus means ocular misalignment whether caused by abnormalities in binocular vision or by anomalies of neuromuscular control of ocular motility (1). Strabismus is classified as congenital, accommodative, paralytic or sensory such as corneal scar, monocular cataract and posterior segment disorders including retinoblastoma. It is a common condition with a prevalence of 5% in children aged 5-6 years (2). A study conducted in Butajira town in 2001 among pre-school children showed a prevalence of strabismus to be 1.5% and strabismic amblyopia was found in 51.7% of the of children (3).

The consequences of untreated strabismus are amblyopia, loss of binocular vision and cosmetic stigma (1, 4, 5). The prevalence of strabismic amblyopia was found to be 42.9% and 58% among strabismic elementary school children and epidemiological study of strabismus in children respectively (6, 7). It also adversely affects the parent-child relationship and a child's psychological development (8). Furthermore, there is now growing evidence on the psychosocial impacts of strabismus, with three studies reporting that strabismus may create significant negative social prejudice (9-11) and significantly reduce a person's chances to obtain employment (12). In addition, affected adolescents and adults report that strabismus negatively affects their self-image and interpersonal relationship with others (13).

Negative attitudes towards strabismus emerge at a young age, as early as 6 years, as shown in one study (14).

Poor parental knowledge, misconception and misinformation adversely affect the age of presentation and management of strabismus, which varies from country to country and from place to place within a country (8). The objective of this study was to find out the level of knowledge, attitude and practice of the community concerning strabismus and to see factors like age, sex and educational level, which can influence it.

## Methods

A cross-sectional study was conducted from November 1 to November 28, 2007 in Cheha District to assess knowledge, attitude and practice of people aged 18 years and above about strabismus. Cheha district is found in Southern Nations, Nationalities and Peoples Regional State (SNNPRS) about 185 km southwest of Addis Ababa. There were 42 peasant associations (PAs) in the district with a total population of 176,830, three Health centers, two NGO clinics and one NGO hospital in the district. The district has also two high schools and 41 elementary schools.

To determine the sample size, we used the assumption that 50% of the population had enough knowledge about strabismus, since the prevalence was not known. We also assumed a precision of 4%, confidence interval of 95%

and a response rate of 90%. With these assumptions, a sample size of 423 was calculated. Ethical approval was obtained from the research and publication committee of the department of ophthalmology, Faculty of Medicine, Addis Ababa University. Permission was also obtained from Cheha district administration and peasant associations.

Information from the 2007 census was used to create sampling list of PAs and their population. There were 42 PAs in the district with an average number of households in each *kebele* being 877 and the average number of people aged 18 years and older in each household was 3. From the list, 10 PAs were selected by a lottery method and the number of households selected from each PA was determined. After determining the starting point in each PA, every tenth household was visited until the total number of sample size required was obtained. All individuals aged 18 year and above from the selected households were included in the study. Those who were less than 18 years, uncooperative, mentally or chronically ill were excluded from the study.

The purpose of the study was explained to the district administrators and PA leaders and permission obtained. Two data collectors, who were familiar with the local language and culture of the community, were selected and used for the survey after giving proper training about the study for one day. A questionnaire on socio-demographic characteristics, knowledge, attitude and practice towards strabismus was pre-tested on ten individuals who were not part of the study. The questions were translated into the local language by the enumerators when necessary. After explaining the purpose of the study and verbal consent was obtained, each individual aged 18 years and above in the selected households was interviewed and filled responses in the pre-prepared questionnaire. To improve the quality of data, each individual was interviewed separately and discussion about the question among those interviewed and those who were going to be interviewed was discouraged.

For this study, the following operational definitions were used: An individual is said to be knowledgeable if at least one cause of strabismus and its consequence was mentioned by him/her. Positive attitude was defined as willingness of marriage or sending strabismic cases to school. If one responds to take a child with strabismus to modern medical center, it was taken as a positive practice. Finally, cases of strabismus detected during the survey were referred to Woliso eye clinic for treatment. Cases with other ocular problems were either treated or referred to the above nearby secondary eye clinic. Percentage was used to describe the findings.

## Results

Table 2: Knowledge of Participants about the Causes of Strabismus, Cheha District, November 2007

Responses of participants on causes	Male	Female	Total
-------------------------------------	------	--------	-------

Of the planned sample of 423, 420 individuals responded and interviewed making a response rate of 99.3%. Out of those who responded, 222 (52.9%) were females, and 198 (47.1%) were male. As shown in Table 1, 72.6% of the study population were farmers, 51.7% were illiterate, 63.6% were married and 40.5% were Orthodox Christians. All respondents claimed that they had seen or heard about strabismus and the source of information for all respondents was family or neighbors. No one had heard about strabismus from the media or health institutions or read about it.

Table 1: Socio-demographic characteristics of Survey population, Cheha District, November 2007

Variables	No.	%
<b>Sex</b>		
Male	222	52.9
Female	198	47.1
<b>Age</b>		
18-28	135	32.2
29-39	98	23.3
40-49	64	15.2
50-59	64	15.2
60+	59	14.0
<b>Religion</b>		
Orthodox	170	40.5
Muslims	167	39.8
Catholic	40	8.8
Protestant	37	9.5
Others	6	1.4
<b>Marital status</b>		
Married	267	63.6
Widowed	49	11.7
Divorced	3	0.7
Single	111	24
<b>Educational status</b>		
Illiterate	217	51.7
Literate	203	48.3
<b>Occupation</b>		
Farmer	305	72.6
Merchant	21	5
Student	56	13.3
Government employee	14	3

When asked whether they knew the causes of strabismus, 312 (73.6%) claimed that they did 108 (26.4%) claimed they did not. Among those who claimed to know the causes of strabismus, 65.4% reported only misconceived causes like exposure to bright sun light (28.2%), looking at a lamp (23.4%) and others like red eye and lack of hygiene (13.8%). Of the total study population, 37.2% mentioned possible causes like congenital (19.9%), trauma (6.4%), eye disease like measles (5.8%) and hereditary (5.1%) in addition to other misconceived causes. There was no significant difference about the knowledge of respondents regarding the cause of strabismus with respect to age or educational status.

of strabismus	No (%)	No (%)	No (%)
Exposure to bright light sources	53 (37.8)	79 (46)	132 (31.4)
Looking sideways	10 (7.1)	22 (12.8)	32 (7.6)
Congenital/hereditary	46 (32.9)	32 (18.6)	78 (18.6)
Trauma	8 (5.7)	12 (7)	20 (4.7)
Eye diseases (measles)	8 (5.7)	10 (5.8)	18 (4.3)
<b>Others</b>	<b>23 (16.4)</b>	<b>19 (11)</b>	<b>42 (10)</b>

Table 3: Knowledge of Survey Population about Treatment of Strabismus, Cheha district, November 2007

Is there any remedy for strabismus?	Male No (%)	Female No (%)	Total No (%)
Yes	72 (36.4)	63 (13.1)	135 (32.1)
No	94 (47.5)	131 (59.0)	225 (53.6)
I do not know	32 (16.2)	28 (12.6)	60 (14.3)
<b>Total</b>	<b>198 (100)</b>	<b>222 (100)</b>	<b>420 (100)</b>

With respect to their knowledge about the consequences of strabismus 418 (99.5%) of the respondents claimed to know the consequences of strabismus. They mentioned reduction of vision (43.1%), disfiguring (15.7%), psychological trauma (8.3%) and difficulty in getting married (4.3%).

As shown in Table 3, 225 (53.6%) of the respondents reported that there is no treatment for strabismus and 14.3% did not know whether it can be treated or not, and 32% reported it to be treatable. All mentioned modern medicine as a remedy and no one reported traditional medicine as a solution for strabismus. This implies that 68.0% of the study subjects did not know that strabismus can be treated. Age and educational status were significantly associated with knowledge about treatment of strabismus ( $p=0.014$  and  $0.033$ , respectively). It was not affected by sex, religion or occupational status ( $p=0.61$ ,  $0.63$ ,  $0.16$ , respectively).

Table 4: Knowledge of Participants about the consequence of Strabismus, Cheha District, November 2007

Consequences of strabismus	No (%)
Reduction of vision	181 (43.1)
Cosmetic blemish	107 (25.6)
Psychological trauma	51 (12.1)
Problem with marriage	18 (4.3)
Reduction of vision and cosmetic	41 (9.8)
Reduction of vision and psychological	16 (3.8)
<b>Others</b>	<b>63 (15)</b>

With respect to attitude towards cases of strabismus, 51.4% of respondents do not want to marry or allow marriage of relatives to person with strabismus. The reasons they gave were that, they are disabled (38.2%), cosmetically not acceptable (22.1%), fear of having similar child (21.6%) and 17.2% did not want to give any reason. Attitudes of participants towards strabismus with

respect to marriage were not affected by age, sex, marital religious or educational status ( $p=0.17$ ,  $0.31$ ,  $0.68$ ,  $0.67$  and  $0.89$ , respectively).

Table 5: Attitude of Respondents towards Cases of Strabismus Concerning Marriage and Education, Cheha District, November 2007

Marry or allow marriage of relatives to a person with strabismus	No (%)
Yes	216 (51.4)
No	204 (48.6)
<b>Reason for not marrying</b>	
Disabled	78 (38.2)
Cosmetic	45 (22.1)
No reason given	35 (17.2)
Others	2 (0.5)
<b>Can learn</b>	
Yes	354 (84.3)
No	66 (15.7)
<b>Reason for not being able to attend school</b>	
Cannot see	63 (95.5)
Poor performance at school	2 (3.0)
<b>Others</b>	<b>1 (1.5)</b>

Of the total study population, 354 (84.3%) reported that individuals with strabismus could attend school like any other individuals and 66 (15.7%) stated they could not learn and the main reason given being that they could not see. When they were asked what actions they would take if there was a case of strabismus in the family, 41.2% reported they would not take any action since it cannot be treated, 32.1% said they would take the affected to hospital and 27.8% reported they would try with modern medicine even though most of them believed that it could not be treated. This was affected by age, sex and educational status where younger age group, male and those with better education showed more tendencies to take cases to hospital but it was not affected by religion.

Table 6: Practices of Study Population towards Strabismus, Cheha District, November 2007

Action taken for cases	Male	Female	Total
------------------------	------	--------	-------

of strabismus	No (%)	No (%)	No (%)
Nothing	55 (27.8)	118 (53.2)	173 (41.2)
Try with modern medicine	78 (39.4)	48 (21.6)	126 (30.0)
Take to hospital	65 (32.8)	56 (25.2)	121 (28.8)
<b>Total</b>	<b>198 (100)</b>	<b>222 (100)</b>	<b>420 (100)</b>

### Discussion

Even though there is no similar study for comparison, this cross-sectional study has provided baseline information on the knowledge, practice and attitude of this community towards strabismus. In the majority of cases, strabismus was a treatable condition that required identification and treatment at early age, particularly before the age of two years. This depends on parents knowledge, practice and attitude since poor parental knowledge, misconception, and misinformation adversely affect the age of presentation and management of strabismus; which varies from country to country and from place to place within a country (8).

The present study has shown that all the study subject had either seen or heard about strabismus indicating that all were aware of it. The source of information for all was parents or neighbor's that health education on strabismus was not given either through mass media or in health institutions. A large proportion of participants had misconception about the cause of strabismus most did not know that strabismus can be treated. This may have a negative impact on early detection and treatment of strabismic amblyopia in children and its correction in teenagers and adults to improve their self-esteem and psychosocial wellbeing. In addition, thinking exposure to strong sunlight is a cause of strabismus; parents may not expose their children to sunlight which may affect their growth and development.

In conclusion, this community was found to be a community where the majority of people do not know the cause and treatment of strabismus with several misconceptions about its causes and treatment. This may have negative impact on early detection and treatment of strabismic amblyopia as well as increased awareness, attentiveness and self-esteem and improved psychosocial functioning that could be obtained after correction of strabismus. Above all, strabismus can be caused by certain diseases such as retinoblastoma in children, which threatens life. Therefore; health education on causes, the importance of early detection and treatment and consequence of strabismus should be given in order to eliminate misconception and minimize adverse consequences of strabismus.

### Acknowledgments

This research work was fully funded by ORBIS International Ethiopia. We appreciate the Gurage Zone health department and district health bureau for their willingness to provide useful information. We would like to thank the residents of Cheha District for their cooperation during data collection. We are also grateful

to Dr. Yeneneh Mulugeta of ORBIS International Ethiopia for his valuable support.

### References

1. Basic and clinical science course, section 6. Pediatric ophthalmology and strabismus. American Academy of ophthalmology, 2006-2007.
2. Graham PA. Epidemiology of strabismus. *Br J Ophthalmol* 1974;58:224-231.
3. Abeba T, Abebe B. Prevalence of strabismus among pre-school children in Butajira. *Ethiop J Health Dev* 2001;15(2):125-130.
4. Dale TR. Fundamentals of ocular motility & strabismus. New York: Grune and stratten Inc, 1982:189-245.
5. Ehrlich MI, Reinecke RO, Simons K. Preschool Vision for amblyopia & Strabismus program, Methods, Guidelines. *Surv. Ophthalmology* 1983; 28:145-163.
6. See-LC, Song-Hs, Ku-Wc, Lee-JS, Liang YS, Shich WB. Neglect of childhood strabismus. *Chang-Keng-J-HSUCH*. 1996;217-224.
7. Marrakchi S, Nacef L, Humaza B, Slim N, Ayed S, Daghfous HT. Epidemiologic study of strabismic amblyopia in Tunisia. *J Fr Ophthalmol* 1998;12;819-23.
8. Eustis S, Smith D.R. Parental understanding of strabismus. *J Pediatr Ophthalmol strabismus*. 1987;24:232-237.
9. Uretmen O, Egrilmez S, Kose S, Pamukcu K, Akkin C, Palamar M. Negative social bias against children with strabismus. *Acta Ophthalmol Scand* 2003;81:138-142.
10. Olitsky SE, Sudesh S, Graziano A, Hamblen J, Brooks SE, Shaha SH. The negative psychosocial impact of strabismus in adults. *J AAPOS* 1999;3:209-211.
11. Satterfield D, Keltner J.L, Morrison TL. Psychosocial aspects of strabismus study. *Arch Ophthalmol* 1993;111:1100-1105.
12. Coats D.K, Paysse E.A, Towler A.J, Dipboye R.L. Impact of large angle horizontal strabismus on ability to obtain employment. *Ophthalmology* 2000;107:402-405.
13. Menon V, Saha J, Tandon R, Mehta M, Khokhar S. Study of the psychosocial aspects of strabismus, *J Pediatr Ophthalmol Strabismus* 2002;39:203-208.
14. Paysse EA, Steele EA, McCreery KM, Wilhelmus KR, Coats DK. Age of the emergence of negative attitudes toward strabismus. *J AAPOS* 2001;5:361-366.