
PUBLIC HEALTH RESEARCH

Attitude and its Associated Factors among Adults towards Traditional Eye Medicine in Gondar City, Northwest Ethiopia: A Cross-sectional Study

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ABSTRACT

Introduction	This study is to assess attitude and its associated factors among adults towards traditional eye medicine in Gondar city, North West Ethiopia. Traditional medicines are commonly practiced in Africa. It is believed to be alternative health care used in the developing world. It is a more widely available and affordable alternative to pharmaceutical drugs. In Africa, about 13.2- 82.3% of the population utilizes traditional eye medicine.
Methods	A community-based cross-sectional study was conducted on 600 study participants using a pre-tested structured questionnaire. Data analysis was performed using Statistical Package for Social Sciences (SPSS) version 20 computer software. Association and strength between the outcome variable and independent variables were determined using the odds ratio with a 95 % confidence interval.
Results	A total of 633 subjects were included in the study with a 95 % response rate. Of the total study subjects, 292 (48.7 %) (95% CI: 44.7-52.7%) had a good attitude towards traditional eye medicine use. Variables like being male (AOR=2.00(95% CI: 1.23-2.68)), family history of traditional eye medicine use (AOR=3.31(95% CI: 2.01-5.47)), availability of traditional healer (AOR=1.81(95% CI: 1.12-2.95)) and absence of health insurance (AOR=1.63(95% CI: 1.14-2.55)) were variables significantly associated with good attitude towards traditional eye medicine use.
Conclusions	The result of this study shows that attitude towards traditional eye medicine use for the treatment of eye disease was fairly good. It indicates that almost half of the study participants had a good attitude towards traditional eye medicine use. Community awareness programme through collaboration of the health ministry and traditional healers on traditional eye medicine use can help to promote the right perception and reduce the risk of complications.
Keywords	Attitude - Traditional Eye Medicine - Gondar City - Ethiopia.

Article history

Received: 28 January 2021

Accepted: 2 August 2021

Published: 1 September 2021

INTRODUCTION

World health organization(WHO) defines traditional medicines as the total of all knowledge and practices whether explicable or inexplicable used in diagnosis, prevention, and elimination of physical, mental, or social imbalance and relying exclusively on practical experience and preservation handed down from generation to generation whether verbally or written.¹

Traditional eye medicines are a form of biologically based therapies or practices that are instilled or applied to the eye or administered orally to achieve a desired ocular therapeutic effect. Traditional eye medicines are crude or partially processed organic (plant and animal products) or inorganic (chemical substances) agents.² The most common types of traditional eye medicines used by traditional eye medicine practitioners (TEMPs) are plant extracts, commercial chemicals, and fluids from various sources.^{1, 2}

Traditional eye medicine is common in Africa. It is believed to be alternative health care used in the developing world. It is a more widely available and affordable alternative to pharmaceutical drugs. In Africa, about 13.2- 82.3% of the population utilizes traditional eye medicine.³⁻⁶

Traditional eye medicine has been used in Ethiopia for long period.^{7, 8} However, there is no study done specifically on attitude towards traditional eye medicine. Therefore, studying attitude and its associated factors among adults towards traditional eye medicine in Gondar city can provide important information to stakeholders to take appropriate controlling measures regarding the quality and safety of the practices.

METHODS

Study population and study design

A community-based cross-sectional study was conducted in Gondar city. Gondar has located 727 Km from the capital, Addis Ababa, and 182 km from Bahir Dar, the capital of Amhara National Regional State. According to the 2007 national central statistical agency, Gondar city has a population size of 351,675 and the city is subdivided into 24 city kebeles (local administrative) holding approximately 53,725 households and 112, 800 adult population. There is one governmental tertiary eye care center that provides different specialty eye care services and three private eye care specialty clinics in the city.

The study was conducted from April 25 to May 15, 2017. Adults aged ≥18-years-old living in Gondar city, were the source population. Individuals who were unable to respond to the questionnaire due to either serious illness or mental problems and those who resided less than 6 months in the study area were excluded.

Sample size determination and sampling procedure
The sample size was determined by using open Epi computer software for a single population. By considering the proportion of good attitude towards traditional eye medicine use (P= 50%), a design effect of 1.5 and 10 % of non-response rate, the final sample size was 633.

To select study participants, a multi-stage random sampling technique was employed in 24 homogenous kebeles (local administrative). Six kebeles were selected from the city by a simple random sampling technique. In selected kebeles, there were 12, 952 households. Population proportion to size sampling was used to determine the sample size in each kebele. Households in kebeles were selected by a systematic random sampling method using a sampling fraction of 21. Finally, the lottery method was used to select a participant in a household, where more than one adult (≥18 years old) was found (Figure 1).

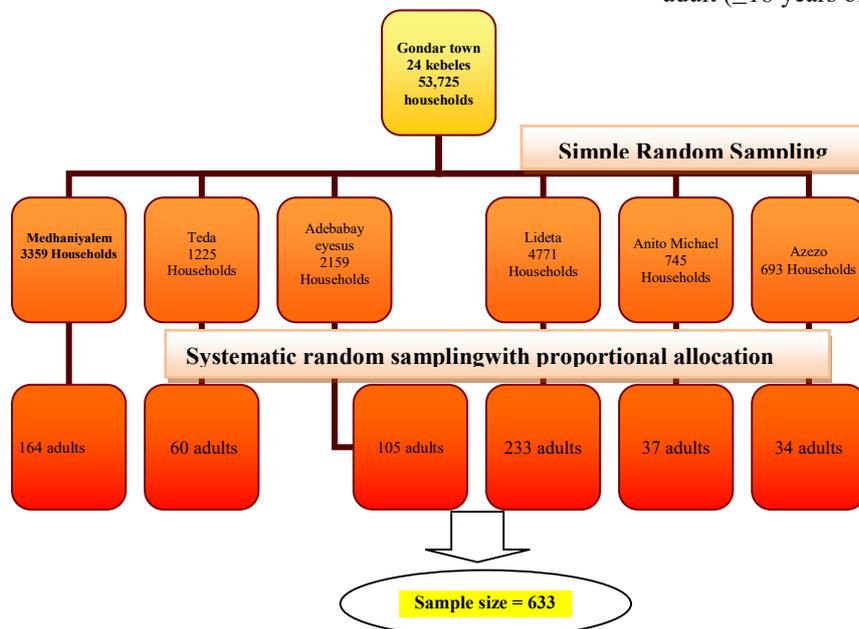


Figure 1 Diagrammatic representation of sampling procedure among adults in Gondar city, North West Ethiopia

Data collection tool and procedures

Data collection was done by 6 trained diploma secretaries through a face-to-face interview, using a pre-tested structured Amharic (local language) Questionnaire. The data collection instrument (questionnaire) was developed in English for this study purpose and then translated to Amharic (local language) and later translated back to English by language experts to ensure the accuracy and reliability of data. To assure data quality, a pre-test (5% of the sample size) was done outside the study area on a similar population. The reliability of the questionnaire was tested using Cronbach’s alpha and the result was 0.80. During a home-to-home visit to collect data, each data collector started by spinning a pen at a crossroads to select a specific direction. Besides, data clean-up; checking for completeness, outliers, and missing values were done each day by the supervisor.

Operational definitions

Good attitude: A participant was said to have a good attitude towards traditional eye medicine use when he/she had scored mean and above the mean of attitude questions.

Poor attitude: A participant was said to have a poor attitude towards traditional eye medicine use when he/she had scored less than the mean of attitude questions.

Availability of traditional healer: A traditional healer was considered as available when a participant answered “yes” to the question “do you know a functional traditional healer?”

Health insurance: The participant was said to have health insurance when the participant has had an annual payment agreement with the government and the government covers the annual health cost of the participant.

Ethics approval and consent of participants

Ethical clearance was obtained from the University of Gondar College of medicine and health sciences, School of Medicine Ethical Review Committee and a support letter was obtained from local kebele administrates. The household head saw and read it during data collection. Since the data collection

procedure was noninvasive, Verbal informed consent was obtained from all study participants to reduce participation withdrawal. This was approved by Gondar University School of Medicine Ethical Review committee. The confidentiality of the data was ensured and the consent declared that participants’ participation is voluntary. They were also informed that there is no risk through participating in this survey. It was also clarified that they have full right to refuse from participating in the study and withdraw from the study at any time they wish. They would also have a full right to contact and ask the authors whatever they want.

Data processing and statistical analysis

Data from the entire questionnaire was coded, entered into Epi info 7, and exported to SPSS version 20 software for analysis. Frequency and cross-tabulations were used for the descriptive analysis of data. Associations between dependent and independent variables were analyzed using binary logistic regression with entering method variable selection. Variables with a P-value of ≤ 0.2 in the bivariable analysis were entered into multiple logistic regressions and a variable with a P-value of < 0.05 with a 95 % confidence interval was considered as a statistically significant association. Model fitness was checked using Hosmer and Lemeshow goodness of fit and the result was 0.985. Besides this, predictor variables were checked for multicollinearity and the variance inflation factor values were less than 10 through cross-checking across each variable.

RESULTS

Socio-demographic characteristics of study participants

A total of 633 subjects were included in the study with a 95 % response rate. The median age of the participants was 30 (16 IQR) with a range of 18–88 years. Among them, 354 (59%) were females, 539 (89.8 %) were Christian in religion, and 426 (71%) had income ≥ 1328 Ethiopian birr (Table 1).

Table 1 Sociodemographic characteristics of study participants among adults in Gondar city, North West Ethiopia, 2017 (n=600, n=N_Q of study participants).

Variables	Category	Frequency	Percent
Age (in years)	18-24	150	25
	25-30	181	30.2
	31-40	140	23.3
	41-88	129	21.5
Sex	Male	246	41

Attitude Towards Traditional Eye Medicine

	Female	354	59
Educational status	Can't read and write	69	11.6
	Read and write	99	16.6
	Primary school	89	14.6
	Secondary school	131	21.8
	Collage and above	212	35.4
Marital status	Married	307	51.1
	Unmarried	293	48.9
Religion	Christian	539	89.8
	Muslim	61	10.2
Occupation	Housewife	109	18.2
	Student	97	16.2
	Merchant	115	19.2
	Employed	203	33.8
	Other	76	12.6
Income	High income	426	71
	Low income	174	29
Community leadership role	Yes	115	19.5
	No	485	80.5

Income categories: income is categorized using world economic and financial surveys, October 2016 (individuals with 1328 Ethiopian total birr per month and above income said to have high income and below this, low income).

Attitude towards traditional eye medicine use
In the current study 292 (48.7 % (95% CI: 44.7 %-52.7 %)) study participants had a good attitude towards traditional eye medicine use. From 600 total study participants, 294 (49 %) disagreed that

traditional eye medicines are as safer as modern eye medicines, and 340 (56.7 %) disagreed that traditional eye medicines are more effective than modern eye medicines (Table 2).

Table 2 Attitude of study participants towards traditional eye medicine use among adults in Gondar city, North West Ethiopia, 2017(n=600).

Questions	Frequency	Percent
Do you accept traditional eye medicine use?		
Yes	274	45.7 %
No	326	54.3 %
Do you encourage others to use traditional eye medicine?		
Yes	216	36.2 %
No	384	63.8 %
Traditional eye medicines have a role in public eye health.		
Strongly agree	43	7.2 %
Agree	254	42.2 %
Neutral	79	13.2 %
Disagree	181	30.2 %
Strongly disagree	43	7.2 %
Individual or community perception of eye disease may encourage TEM use.		
Strongly agree	55	9.2 %

Agree	172	28.6 %
Neutral	44	7.4 %
Disagree	278	46.3 %
Strongly disagree	51	8.5 %
Traditional eye medicines are as safer as modern eye medicines.		
Strongly agree	94	15.7 %
Agree	126	21 %
Neutral	58	9.7 %
Disagree	294	49 %
Strongly disagree	28	4.7 %
It is dangerous to take traditional eye medicines with modern eye medicines.		
Strongly Agree	38	6.3 %
Agree	220	36.7 %
Neutral	39	6.5 %
Disagree	275	45.8 %
Strongly Disagree	28	4.7 %
Traditional eye medicines are more effective than modern eye medicines		
Strongly agree	19	3.2 %
Agree	44	7.3 %
Neutral	24	4%
Disagree	340	56.7 %
Strongly disagree	173	28.8 %
Consulting an eye care professional or pharmacist before applying traditional eye medicine is important.		
Strongly agree	21	3.5 %
Agree	192	32%
Neutral	25	4.2 %
Disagree	307	51.2 %
Strongly disagree	55	9.1 %

Factors associated with the attitude towards traditional eye medicine use

In this study, males were 2.00 times (AOR=2.00(95% CI: 1.23-2.68)) more likely to have a good attitude towards TEM use compared to females. Study participants with a family history of TEM use were 3.31 times (AOR=3.31(95% CI: 2.01-5.47)) more likely to have a good attitude towards TEM use compared to those without a family history of TEM use. Study participants, who live in traditional healer available area, were 1.82 times (AOR=1.81(95% CI: 1.12-2.95)) more likely

to have a good attitude towards TEM use compared to those who live in an area where traditional healer doesn't exist. Study participants without health insurance were 1.63 times (AOR=1.63(95% CI: 1.14-2.55)) more likely to have a good attitude towards TEM use compared to those who had health insurance (Table 3).

Table 3: Factors associated with the attitude of study participants towards traditional eye medicine use among adults in Gondar city, North West Ethiopia, 2017 (n=292 n= study participants with a good attitude)

Table 2 Attitude of study participants towards traditional eye medicine use among adults in Gondar city, North West Ethiopia, 2017(n=600).

Variable	Attitude		COR((95%CI)	AOR(95%CI)
	Good	Poor		
Age (in a year)				
18-24	78	72		1.00
24-30	91	90	0.93 (0.61-1.44)	
30-40	63	77	0.76 (0.48-1.20)	
41-88	60	69	0.80(0.50-1.29)	

Attitude Towards Traditional Eye Medicine

Sex					
Male	148	98	2.20 (1.58-3.06)	2.00(1.23-2.68)**	
Female	144	210	1.00	1.00	
Marital status					
Married	148	159	1.00		
Unmarried	144	149	1.04 (0.75-1.43)		
Educational status					
Illiterate	30	39	0.63 (0.36-1.08)		
Read and write	38	61	0.51 (0.31-0.82)		
Primary school	42	47	0.73 (0.44-1.19)		
Secondary school	65	66	0.80 (0.52-1.24)		
College and above	117	95	1.00		
Religion					
Christian	260	279	1.00		
Muslim	32	29	1.18(0.69-2.01)		
Occupation					
Student	50	47	1.00		
Housewife	39	70	0.52 (0.30-0.92)		
Merchant	58	57	0.96 (0.56-1.64)		
Employed		89	1.20 (0.74-1.96)		
Others	31	45	0.65 (0.35-1.19)		
Income					
High	217	209	1.00		
low	75	99	0.73 (0.51-1.04)		
Community leadership role					
Yes	54	61	0.92 (0.61-1.40)		
No	238	247	1.00		
Awareness of TEM side effects					
Yes	125	77	1.00		
No	167	231	0.45(0.32-0.63)		
Availability of TH					
Yes	104	39	3.82 (2.53-5.76)	1.82(1.12-2.95)*	
No	188	269	1.00	1.00	
Accessibility of modern eye care service					
Yes	188	205	1.00		
No	104	103	1.10 (0.79-1.54)		
Health insurance					
Yes	44	72	1.00	1.00	
No	248	236	1.72 (1.14-2.61)	1.63(1.14-2.55)*	
Family history of TEM					
Yes	109	34	4.8 (3.13-7.37)	3.31(2.01-5.47)**	
No	183	274	1.00	1.00	

*= P -value < 0.05 **= p -value < 0.01

DISCUSSION

The attitude towards traditional eye medicine use is higher than the study conducted in Jara town, Bale zone, South East Ethiopia (39.8 %).⁹ The possible explanation for this might be due to cultural and socioeconomic variation. Jara is a small town while Gondar is a zonal city, where study participants may have good information about traditional eye medicine. On the other hand, this result is lower than other studies done in Iran (75 %),¹⁰ Singapore (92 %),¹¹ and China(63 %).¹² This difference could be because of variation in the study setting. These studies were done in hospital health care staffs, medical students, and pharmacists respectively.

Besides this, traditional medicine practices are commonly available in Asians and used as alternative health care.^{13, 14}

Males were 2 times more likely to have a good attitude towards TEM use compared to females. Studies conducted in Israel,¹⁵ Serbia,¹⁶ and Tanzania¹⁷ support this finding. This might be due to cultural tradition that parents usually transfer their skills and knowledge on traditional medicine to their male children. Moreover, males have higher community interaction than females. As a result, they could share information with their friends about traditional eye medicines.

Study participants with a family history of TEM use were 3.3 times more likely to have a good attitude towards TEM use compared to those without a family history of TEM use. This finding supported by studies conducted in Malaysia [18] and Uganda [19]. This might be a result of learning from family experience about health roles and the adverse effects of traditional eye medicine use.

Study participants who live in an area having a traditional healer were 1.81 times more likely to have a good attitude towards TEM use compared to those who live in an area where a traditional healer doesn't exist. This is consistent with studies conducted in Nigeria.^{20, 21} It could be that persons nearby to traditional healers are more exposed to TEM practice and also appreciate the activity of traditional healers.

Study participants without health insurance were 1.63 times more likely to have a good attitude towards TEM use compared to those who had health insurance. This might be due to money constraints that participants couldn't visit the modern eye care center. For instance, 29 % of the study participants in this study had less than 1,328 Ethiopian total birrs monthly income. As a result, they could stick to traditional eye medicines and their attitude towards TEM use might be better.

CONCLUSIONS

The result of this study shows that attitude towards traditional eye medicine use for the treatment of eye disease was fairly good. It indicates that almost half of the study participants had a good attitude towards traditional eye medicine use. Even though the attitude is fairly good, still it needs improvement. Male sex, family history of traditional eye medicine use, availability of traditional healers, and absence of health insurance had a statistically significant relationship with a good attitude towards traditional eye medicine use. Community awareness creation through the joint up effort by the health ministry of Ethiopia and traditional healers about traditional eye medicine use can help to build the right perception and reduce the risk of complications. This study has had limitations to abolish social desirability and recall biases. Respondents might be afraid of social discrimination if they give the right answer and have difficulty remembering the past. In addition, since this study is cross sectional, it doesn't show a cause-effect relationship.

Abbreviations

IQR = Inter Quartile range

TEM = Traditional Eye Medicine

TH = Traditional Healer

Ethics approval and consent of participants

Ethical clearance was obtained from the University of Gondar College of medicine and health sciences, School of Medicine Ethical Review Committee and

a support letter was obtained from local kebele administrators. The household head saw and read it during data collection. Since the data collection procedure was noninvasive, Verbal informed consent was obtained from all study participants to reduce participation withdrawal. This was approved by Gondar University School of Medicine Ethical Review committee. The confidentiality of the data was ensured and the consent declared that participants' participation is voluntary. They were also informed that there is no risk through participating in this survey. It was also clarified that they have full right to refuse from participating in the study and withdraw from the study at any time they wish. They would also have a full right to contact and ask the authors whatever they want.

Consent to publication

This is not applicable because it doesn't consist of an individual's data

Availability of data and materials

The data set, on which the conclusion was made, is available on request from Mr. Minychil Bantihun (contact address: minychilmedban@gmail.com).

Competing interest

The authors report that there is no conflict of interest in this work

Funding

The University of Gondar has provided financial support for fieldwork (data collection only) of this research project. But the cost of data processing and analysis were covered by the principal investigator (Minychil Bantihun)

Acknowledgment

The authors thank the Gondar city administration office and all study participants for their cooperation and willingness.

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