2019-01-12

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DETERMINANTS OF CORRECTIVE UPPER EYE LID SURGERY REFUSALS AMONG TRACHOMATOUS TRICHIASIS PATIENTS IN MECHA WOREDA, WEST GOJJAM ZONE, ETHIOPIA, 2018 G.C

INVESTIGATER: - MELESE KITU

ATHESIS SUBMITTED TO BAHIR DAR UNIVERSITY COLLEGE OF MEDICINE & HEALTH SCIENCE, SCHOOL OF PUBLIC HEALTH, DEPARTMENT OF EPIDEMIOLOGY & BIOSTASTICS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR DEGREE OF MASTERS IN EPIDEMIOLOGY

JANUARY, 2019

BAHIR DAR, ETHIOPIA

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ACKNOWLEDGEMENT

I would like to thanks Bahir Dar University College of medicine & Health Sciences and school of public health for giving me this golden and educative opportunity to conduct this thesis.

I would like to express my sincere and heartfelt gratitude to my advisors Kebadnew mulatu and Taye abuhay for their unreserved support, advice, suggestions and continued technical support through the course of the thesis development.

In addition I acknowledge Mecha woreda health office staffs and respective health institutions that facilitating things without difficulty for giving important data.

Finally I would also like to extend my great appreciation and respect to all supervisors, data collectors and study participants.

ABSTRACT

Background:- Repeated infection with Chlamydia trachomatis causes Trachomatous trichiasis. Surgery is the preferred method of treatment of Trachomatous trichiasis. Surgery for Trachomatous trichiasis prevents blindness. However people still decline surgery despite the availability of services in nearby health facilities.

Objective: - To identify determinants of corrective upper eye lid surgery refusals among Trachomatous trichiasis patients in Mecha woreda, Ethiopia, 2018.

Methods: - A community based unmatched case control study design was conducted in Mecha woreda from October 5 to December 17, 2018. A total of 676 study participants with 338 controls and 338 cases were involved in this study. Study participants were selected randomly by lottery method. To collect data, pre-tested structured interviewer-administered questionnaire was used. Independent factors, with a P-value < 0.2 in the bivariate logistic regression was entered into the multivariable logistic regression models. P-value < 0.05 was used as cut-off point for a variable to become significant predictor in multivariable logistic regretion.

Results:- Observed bad outcome (AOR: 3.51, 95% CI: 1.94-6.35) and lack of knowledge on trichiasis outcome if untreated (AOR: 1.77, 95% CI: 1.18-2.65) increases refusing to surgery while, having trust to surgeons (AOR: 0.26, 95% CI: 0.15-0.45), knowledge on eye lid surgery (AOR: 0.32, 95% CI: 0.16-0.64), long duration with trichiasis (AOR: 0.5, 95% CI: 0.15-0.45), family member decision maker for own health conditions (AOR: 0.29, 95% CI: 0.13-0.64), epilation more than once per week (AOR: 0.31, 95% CI: 0.17-0.6) and epilation once per week to once per month (AOR: 0.49, 95% CI:0.27-0.86), personal advice from friends, health development army and government body (AOR: 0.26, 95% CI: 0.14-0.5), (AOR: 0.11, 95% CI: 0.04-0.28) and (AOR: 0.46, 95% CI: 0.3-0.7) respectively decreases refuse to surgery.

Conclusions:-Long duration with Trachomatous trichiasis, frequently epilation, Knowledge on eye lid surgery, having trust to surgeons, deciding by family member for own health, other person advice decreases refusing to surgery. In the other way Observed bad outcome and lack knowledge on Trichiasis outcome if untreated increases refusing to surgery.

Key words:-Trachomatous trichiasis, Corrective upper eye lid surgery refusal, Trachomatous trichiasis treatment, Trachoma, Determinants, Ethiopia

ACRONYMS AND ABBREVIATIONS

AOR	Adjusted odds ratio
CI	Confidence interval
CO	Corneal opacity
COR	crude odds ratio
DALYs	Disability adjusted life years
HEW	Health Extension Worker
ICTC	International Coalition for Trachoma Control
IECW	Integrated eye care worker
NGO	Non-government organization
SAFE	Surgery, Antibiotics, Facial cleanliness & Environmental Improvement
SPSS	Stastical Package for Social Science
SSA	Sub Saharan Africa
TEO	Tetracycline Eye Ointment
TF	Trachomatous Inflammation Follicular
TI	Trachomatous Inflammation Intense
TS	Trachomatous Conjunctival Scarring
TT	Trachomatous trichiasis
WHO	World health organization

TABLE OF CONTENTS

Contents **pages**

LIST OF TABLES

LIST OF FIGURE

1 INTRODUCTION

1.1 BACKGROUND

Trachoma, a highly contagious infection caused by the bacteria *Chlamydia trachomatis*, is the most common infectious cause and the eighth most common cause of blindness worldwide(1, 2). Repeated infection with these bacteria for many years produces scarring of the inner part of the upper eyelid, which turns the lashes inwards so that they scratch the eyeball. When the eyelashes rub on the eye, the condition is called Trachomatous trichiasis (TT). Eyelid scarring also causes poor tear secretion and drying of the eye. These conditions increase the risk of corneal ulceration and scarring. Scarring of the cornea impairs vision. Blindness due to trachoma is irreversible once it has occurred, but it can be prevented (3, 4).

The public health interventions are based on the SAFE strategy for trachoma elimination, an approach endorsed by the World Health Organization (WHO). SAFE is short for Surgery, Antibiotics, Facial cleanliness and Environmental improvement. It involves offering individuals with trichiasis (the blinding consequence of trachoma) a surgical procedure to stop their lashes being in contact with the eyeball. In populations with active trachoma, SAFE also involves offering antibiotics, education (about facial cleanliness and other good hygiene practices) and environmental improvement to reduce the carriage and transmission of the bacterium that causes trachoma(5).

Surgery to correct TT is a main component of all trachoma blindness control programs in endemic countries. Many techniques have been used. In most the principle is to mobilize the entropic component of the eyelid, then reposition and suture this in a correct position to prevent eyelashes scratching the cornea(6). Surgery is the chosen method of treatment of Trachomatous trichiasis (with conjunctival scarring and entropion), however some patients (without entropion and just a few eyelashes in the periphery) can be managed with epilation (pulling out eyelashes)(7).

In 1998, the World Health Assembly approved a resolution calling for the elimination of blinding trachoma as a public health problem by 2020(8). Countries, partners and donors are committed to the global elimination of blinding trachoma by 2020(7). Countries will be eligible for consideration of having eliminated trachoma as a public health problem when they have achieved the goal for TT at district level less than 1 cases per 1000 total population of trichiasis cases unknown to the health system(8).

There are two broad models for TT surgical provision, health-center-based (static or fixed services) and outreach (campaign). In the health center model, TT surgery is integrated into routine clinical services. The catchment population is educated about the service and patients are expected to attend the clinic for assessment and treatment as required. In the outreach model a temporary clinic and operating theater are set up for a short period of time, usually in a rural setting without pre-existing facilities. The ‘‘campaign’’ is advertised to the local community by health-care workers, in markets and religious centers, by radio and word of mouth. The outreach model enables large numbers of operations to be conducted in a short period of time, often in locations where patients have not been able to access TT surgery, but usually depends on charitable organizations to fund and organize the service and does not build a sustainable health system. Despite training of large numbers of TT surgeons and provision of equipment for a clinic based service, the bulk of the surgery has been performed in outreach campaigns in Ethiopia(6).

Conducting an efficient and effective trichiasis outreach activity, has two steps, one, creating broad-based awareness of trichiasis and the availability of services to correct trichiasis, and, two, identification of people with trichiasis. However, this may not lead to significant surgical uptake on its own for many reasons, including fear of surgical failure/recurrence, a belief that a long recovery is required after surgery, and lack of social support(7). With this context, this study was conduct to identify determinant factors for corrective upper eye lid surgery refusals.

1.2 STATMENT OF THE PROBLEM

More than 40 million people in over 50 countries are affected by trachoma, and over 8 million are at immediate risk of irreversible blindness(9). While estimates vary, it is likely that 2.2 million people worldwide have low vision, of whom 1.2 million are irreversibly blind as a result of trachoma(2).

Half of the global burden of Trachomatous trichiasis is concentrated in four countries (i.e. China, Ethiopia, Nigeria and Sudan) (10). The burden of trachoma is measured not just in the prevalence, nor in the prevalence of blindness or visual loss due to trachoma. The prevalent cases of visual loss are responsible for 39 million lifetime disability-adjusted life years (DALYs). The annual economic cost of trachoma in terms of lost productivity is estimated to be between US$ 2.9 billion (11, 12).

Africa is the worst affected continent with 18.2 million cases of active trachoma (85.3% of all cases globally) and 3.2 million cases of trichiasis (44.1% of all cases globally) found in 29 of the 46 countries in WHO's African Region. Nearly half of the global disease burden of active trachoma and a quarter of end stage trichiasis are concentrated in 10 countries with 6 of these located in sub Saharan Africa(SSA)(13).

Surgery for Trachomatous trichiasis prevents blindness. However, people still decline surgery despite the availability of services in nearby health facilities (14).In the last decade, only about 50% of the annual global surgical targets has been achieved. At the current rate, it has been estimated that the trichiasis backlog would not be adequately addressed until 2032(15, 16).

Ethiopia has the highest burden and prevalence of active trachoma globally (30% of the sub-Saharan trachoma burden is estimated to occur in Ethiopia). The disease remains a major health problems and a leading cause of infectious blindness in the country. The prevalence of blinding trachoma - Trachomatous trichiasis (TT), stands at 4% nationally, and varies from 0.2% to 12% among people aged 15 years and over across the country(17).

Studies in other country shows even though services are available, overall uptake of surgery has been reported to be low 44.8% (36.5%in the school-teacher programmes and 52.1% in the village-leader programmes) in Tanzania and also 66% in the village-based clusters and 44% in the health center-based clusters in Gambia(18, 19).

Despite efforts in decreasing the TT surgery backlog and improving the access and quality of trichiasis surgery services, there are still an estimated 650,845 people that require urgent eyelid surgery for trichiasis in Ethiopia. This huge TT backlog needs to be cleared to achieve the

national target of the elimination of blinding trachoma by 2020 as well as to prevent blindness and to ensure improved quality of life of those who suffer from the disease(17).

In the Amhara region of Ethiopia, a trachoma prevalence survey at the zonal-level was conducted in 2007 to quantify the zonal prevalence of trachoma and TT. This survey estimated that over 17 million people were at risk of trachoma and 643,904 people required surgery to correct TT in the Amhara region alone. The regional total TT backlog as of June 2017 was found to be 245,504. A total of 343,324 TT surgeries had been performed in Amhara National Regional State of Ethiopia during 2012 to mid-2017(20, 21).

In the Amhara Region of Ethiopia it was recognized that many trichiasis patients were not accepting offers of surgery through local, freely provided outreach services. This was explored in focus group discussions, which identified a variety of concerns. First, most trichiasis patients mistakenly believed that the surgical wound needs up to 2 months to heal, during which time they should avoid sunlight exposure, involvement in productive activities and getting near to fire or smoke, or else TT would recur. Patients also believed that the operation was very painful and were unaware that it is conducted under local anesthesia. They were very concerned about the quality of surgery. Consequently, patients either tended to decline surgery (even after presenting to local surgical sites) or chose surgical services provided by external surgical teams over the locally available surgical services(16).

Trachoma impact survey (TIS) 2016, by carter center Ethiopia shows the prevalence of TT in Mecha woreda is 1.924 %(4,660)(22). From July 15 up to september15, 2017 in Mecha woreda there is house to house screening for Trachomatous trichiasis in all kebeles. The screening campaign report shows 2,275 new TT cases. Out of these 843 cases get corrective upper eye lid surgery service in that year. 1,032 cases refuse eye lid surgery by complaining different reasons after they get a chance to operate in health center or they have information in their home by health worker(23). More operations and productive approaches are needed to achieve TT elimination. Knowing determinants for surgery refusal is crucial for Trachomatous trichiasis elimination. This study may fill the gap by identifying determinant factors for those surgery refusals.

1.3 SIGNIFICANCE OF THE STUDY

The high burden of Trachomatous trichiasis in the Amhara region calls for collecting a further District-specific data and comprehensive efforts to know the determinates for corrective upper eye lid surgery refusals among Trachomatous trichiasis patients for designing and expanding interventions and for elimination of Trachomatous trichiasis programs. However, limited studies were conducted about trachomatous trichiasis and surgery refusals previously in the district as well as in the region. So:-

- The findings of this study used as a base-line information for other researchers and concerning bodies
- The findings of this study helps for government and non-government organizations aiming at Trachomatous trichiasis control and elimination programs.
- The findings of this study helps to the health care providers to concentrate on important predictor variables that will increase surgical uptake.

2 LITRATURE REVIEW

Determinants associated with Corrective upper eye lid surgery refusal

A community based cross sectional study in Basoliben district, North West Ethiopia, show that major associated factors for eye lid surgical care utilization were; distance from health institution, lack of knowledge about where to get service, lack of time, fear of surgery, indirect cost and misconception about trichiasis treatment(24).

A community based unmatched case control study was employed in Mehalsayint District, North-East Ethiopia, shows that determinants for not utilizing Trachomatous trichiasis surgery among Trachomatous trichiasis patients were; being lower age (The younger (16±30 years) age group, separated and widowed as compared to married participants, time to reach the service (travel < 2 hours walk from their home to reach to the service), long duration of the problem, right or left affected eye compared to both affected eyes, Epilation practice and no symptom were significant factors of not utilizing the surgical services(25).

Evaluation of barriers to surgical compliance in the treatment of trichiasis shows Cost, transportation difficulties, and familial responsibilities have been identified as major barriers to surgical compliance(26).

Another study in Enebse Sarmidir district of Amhara Region-Ethiopia employed a case control study design with patients with untreated trichiasis being cases (135) and those operated controls (141). The main reasons given for not having surgery were burden of household tasks, indirect cost of surgery, Lack of companion and Fear of surgery. Uptake of surgery was found to rise with duration of illness. Longer walking distance (more than one hour) to the nearby health facility was a negative predictor of uptake of surgical treatment (14).

Among interviewed 2591 consecutive individuals presenting for trichiasis surgery in amhara, Ethiopia the most frequently cited barriers to previous attendance for surgery were lack of time, financial constraints and lack of an escort, fear of surgery, older age, be unaware of how to access services being asymptomatic and no one available to accompany them(27).

Among interviewed 225 people who had received IECW training; reported barriers to performing surgery, were: poor access to consumables, lack of time, patients not presenting, limited senior support and equipment problems. Surgeons who were still in the program were also asked why they thought patients were not presenting. Reasons included lack of patient

awareness, no static-site service, reduced backlog, patients want an expatriate surgeon and poor surgical quality (28).

A clinical trial study to know the outcome of Trachomatous trichiasis surgery in Ethiopia was conducted in west gojjam, Ethiopia. A two-year follow-up study of 1300 participants who had PLTR surgery, Recurrence occurred in 32.6% and 16.9% of participants with pre-operative major (>5lashes) and minor (< 5 lashes) TT respectively. Inter surgeon recurrence risk range from 18%–53% (29).

A longitudinal study to know the impact of trichiasis surgery on daily living conducted in west gojjam zone, Ethiopia revealed that eyelid surgery for TT improves the ability of TT cases in executing productive and leisure/social activities, increased the proportion of patients who perform productive and leisure/social activities without difficulty and assistance, effectively treated ocular pain and discomfort, improved engagement in productive paid and agricultural activities, improving productivity and contributing to household income and wealth(30).

A randomised controlled trial study in west gojjam, Ethiopia to know Change in vision and corneal opacity between surgery and epilation-only participants result shows there were no differences between participants in the epilation only, epilation-to-surgery and surgery arm participants in changes in visual acuity and corneal opacity between baseline and four-years(31).

A case control study in kongwa district, Tanzania identified patient perceived barriers to trichiasis surgery are no one to accompany them to surgery, they could manage TT on their own, the surgery camp was too far, lack of education about surgery and Fear of surgery (the biggest barrier) facing both acceptors and non-acceptors(32).

A 1-year longitudinal study was performed in 190 subjects with trichiasis in Gambia to know barriers to acceptance of surgery; result shows Twenty-three percent (95% CI 16.5%–30.6%) of subjects with major trichiasis attended for surgery during the year. Barriers reported by patients as having prevented them from previously attending for surgery are being too busy to take time out for surgery, older age & ignorance(33).

A study in Mtwara Region, Tanzania by used a combination of focus groups, interviews with community health workers and individual interviews with trichiasis patients who refused surgery study revealed that several factors influenced surgical refusals, including misconception regarding recovery time, inability to find a post-surgical caregiver, and the time of year of the surgical campaign(34).

A cohort study was conducted in Tanzania using two village strategies (village leader and school teachers) to know trichiasis surgical uptake and the factors associated with uptake after 1 year, revealed even though there is free surgery service at health clinics many barriers limit utilization such as indirect costs, social support, affected eye (Individuals with bilateral trichiasis were 1.8 times more likely to have surgery than those with unilateral trichiasis), major trichiasis (10% more likely than minor cases), no education (30% less likely to do than some educated), married (1.7 times more likely) , age (older age more likely to do than younger), sex (females more likely to do) (19).

3 CONCEPTUAL FRAME WORK

Several factors play a role in determining eye lid surgery to refuse in Trachomatous trichiasis patients. These are grouped as socio-demographic variables, knowledge related factors and surgery related factors. (14, 24, 25, 27)

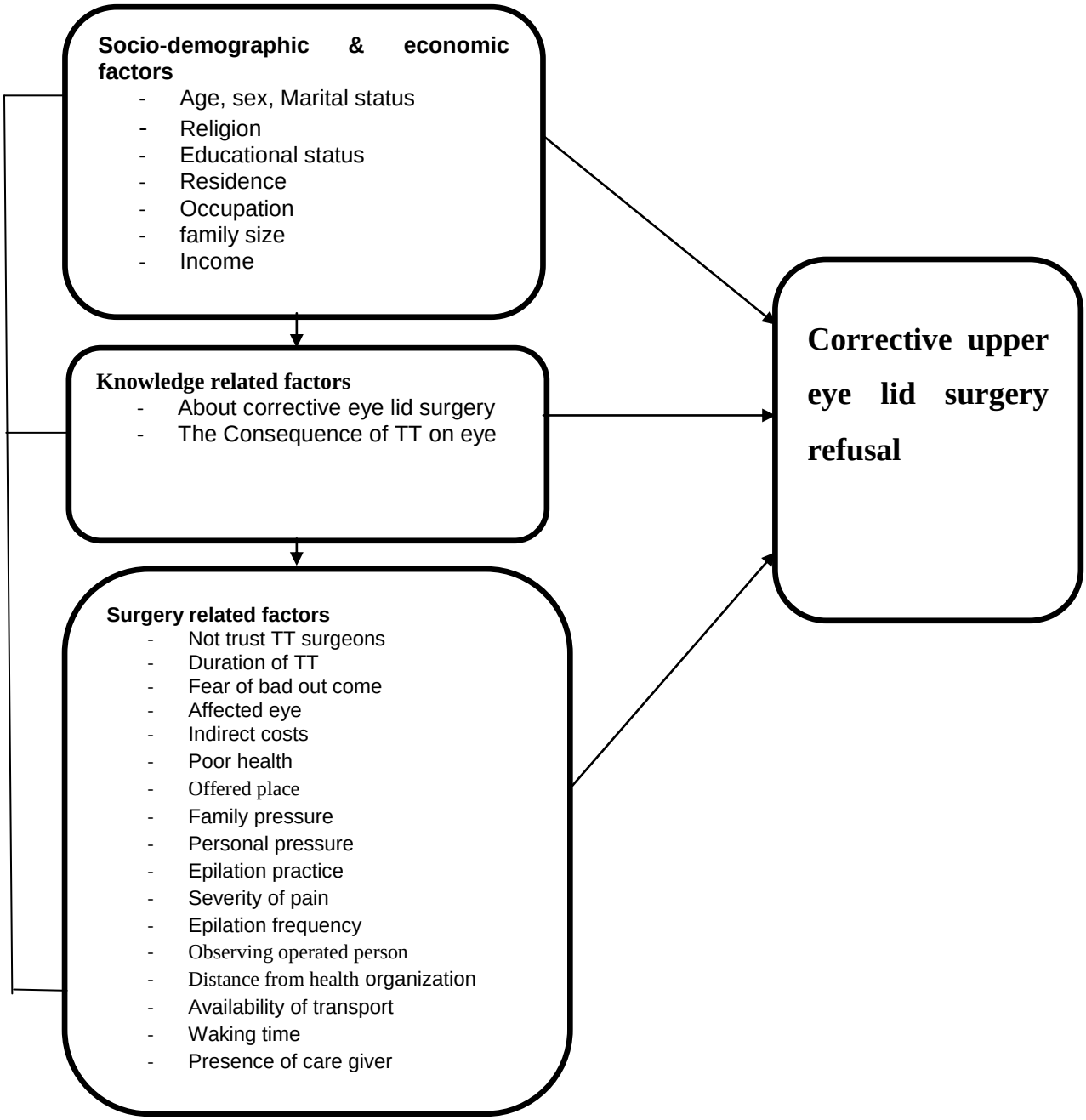

Fig-1, *conceptual frame work for determinants of corrective upper eye lid surgery refusals among Trachomatous trichiasis (TT) patients, west gojjam, Ethiopia, 2018*

4 OBJECTIVE

To identify determinants of corrective upper eye lid surgery refusals among Trachomatous trichiasis patients in Mecha woreda, West Gojjam zone, Ethiopia, 2018

5 METHODS

5.1 STUDY DESIGN

A community based unmatched case control study design was conducted, in Mecha woreda, West Gojjam zone, Ethiopia.

5.2 STUDY AREA AND PERIOD

This study was carried out in of Mecha woreda, one of the thirteen woreda's found in West Gojjam Administrative Zone, is located 30 kms south-west of Bahir Dar town, the capital of Amhara Region. It borders North Achefer in the north, South Achefer in the south and west, and Yilmana Densa Woreda in the east. As in most parts of West Gojjam, Mecha woreda is known for its flat topography. Eighty percent of the woreda lies in the mid-altitude area and the remaining 20 percent is in the dega climate zone(35). The woreda total population in 2017 will be 372,000. The total household head was found 93,000 households. The Woreda has 6 urban and 40 rural kebeles, 13 Health centers, 46 Health posts(36).

The study was conducted from October 5 to December 17, 2018, in Mecha Woreda, west gojjam zone, Ethiopia.

5.3 POPULATION

5.3.1 SOURCE POPULATION

All individuals who had a diagnosed of Trachomatous trichiasis in Mecha woreda

5.3.2 STUDY POPULATION

The study populations were all previously operated and non-operated TT patients registered in 'service beneficiary registration book' and 'TT refusal registration book' respectively. The previously operated TT patients were 843 and considered as controls. The non-operated TT patient, who has given a chance to operate but refuse, was totally 1,032 and considered as cases.

Cases:- All populations whose age is >15 years and who have diagnosed Trachomatous trichiasis in 2017 house to house screening and given a chance to operate by health worker for corrective upper eye lid surgery but refused, in Mecha woreda.

Control:- All populations whose age is >15 years and who have diagnosed Trachomatous trichiasis in 2017 house to house screening and operated for corrective upper eyelid surgery, in Mecha woreda.

5.3.3 STUDY UNIT

Randomly selected in Trachomatous trichiasis patients, who satisfy the eligibility criteria from both controls and cases

5.6 ELLIGIBILITY CRITERIA

5.6.1 INCLUSION CRITERIA

- For cases;- all eligible Trachomatous trichiasis patients aged greater than 15 years, diagnosed from July 2017 to September 2017, lives in there kebeles during data collection period and given a chance to corrective eye lid surgery by health worker but refuse
- For controls;- all eligible operated individuals aged greater than 15 years, diagnosed from July 2017 to September 2017 and lives in there kebeles during data collection period, in Mecha woreda.

5.6.2 EXCLUSION CRITERIA

- Seriously ill or mentally ill patients unable to give verbal response at the time of data collection
- Patients who were not present during data collection period at two visits.

5.4 SAMPLE SIZE

Double population proportion formula was used to determine sample size. Since the proportion for corrective upper eye lid surgery refusals not studied previously, I use by assumptions. The sample size was calculated using Epi-info-7 software based on the assumption of 95% confidence interval, 80% power, control to case ratio of 1:1, expected frequency of fear of surgery among controls 50%, odds ratio to be detected a s 1.6 and non-response rate of 10% yielding 338 controls and 338 cases (676 study participants).

5.5 SAMPLING METHOD AND PROCEDURE

Simple random sampling, lottery method was used to select cases from 'TT refusal registration document' in each kebeles. Only refusal TT patients diagnosed from July 2017 to September 2017 were included. Selections of refusals (cases) were from all 46 kebeles proportional to their number of cases. One operated control group was selected by lottery method from 'service beneficiary registration' document. Only operated TT patients who were diagnosed from July 2017 to September 2017 were included for controls. If selected patient is not eligible other case in the same household (if present) or in same village was selected. Still if there are no cases in same village, a case in nearby village was selected. *(see annex 12.4)*

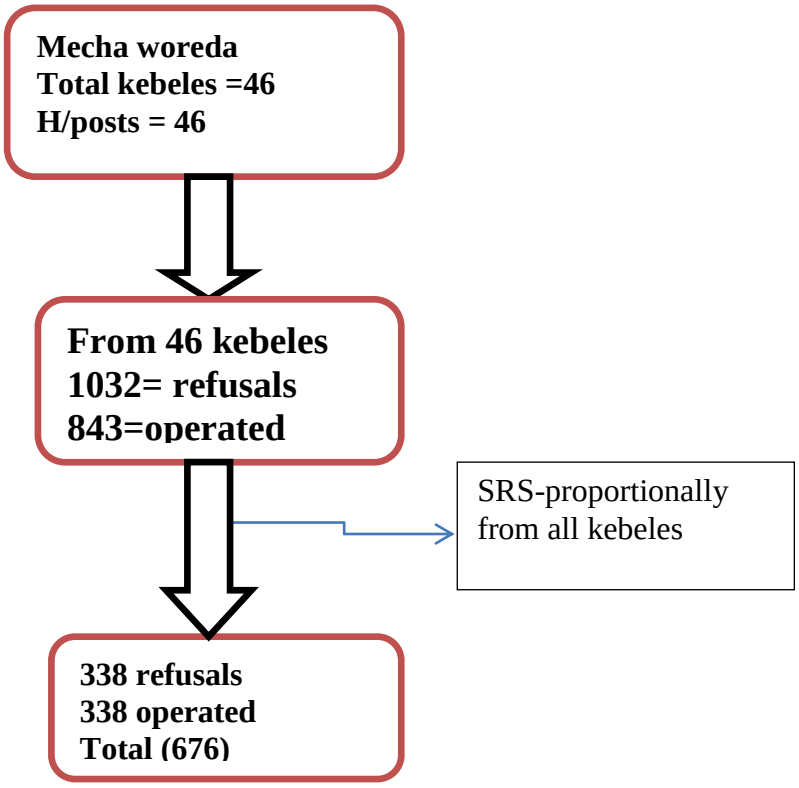

Figure-2: Schematic presentation of sampling procedure for determinants of eye lid surgery refusals among Trachomatous trichiasis patients in Mecha woreda, west gojjam, Ethiopia, 2018

5.7 STUDY VARIABLES

5.7.1 DEPENDANT VARIABLE

Corrective upper eye lid surgery refusal

5.7.2 INDEPENDENT VARIABLES

Socio demographic & economic variables:-

- Age, Sex, marital status, Religion, Education status, Occupation, Residence, family size, Income

Knowledge related:-

- Knowledge about consequences of Trachomatous trichiasis if untreated
- Knowledge about corrective eye lid surgery

Surgery related:-

- trust on IECWs (TT surgeons)
- Fear of bad out come
- Indirect costs
- Poor health
- Offer place
- Presence of care giver
- Affected eye
- Family pressure
- Personal pressure
- duration with TT
- Observing operated person
- Epilation practice
- Severity of pain
- Epilation frequency
- Distance from h/center
- Availability of transport
- Walking time

5.8 OPERATIONAL DEFINITIONS

Refusal: - A Trachomatous trichiasis patient given a chance to be operated by health worker in a health institution or in his/her home but refuses

Trachomatous Trichiasis (TT) – At least one eyelash rubs on the eyeball or there is evidence of recent removal of in-turned eyelashes by examination(shorten lashes + gaps).

Epilation: - Removing of interned eyelashes mechanically from the eyes by local device (locally known as "Worento") or cautering (locally by "feto").

Poor health: -the health status of respondents whose limit to do eye lid surgery in usual setting, such as hypertension, cardiac problems, diabetic mellitus, asthma etc.

Has knowledge for eye lid surgery:- included that scoring greater or equal 50% (mean)from asked eight surgery related questions.

Poor (no) knowledge for eye lid surgery:- characterized those that scored less than 50 % from asked eight surgery related questions(25)

5.9 METHODS OF DATA COLLECTION AND TOOLS

5.9.1 DATA COLLECTION INSTRUMENT

Interviewer-administered questionnaire was prepared in English and translate to Amharic and used to gather relevant information. The pretest was done in Bahirdar zuria woreda, alehoy kebele on 17 cases and 17 controls (5% of the total sample size was considered). The data collection tool was adapted from published previous studies & check lists (24, 25, 27, 28) for assessing eye lid surgery refusals with required modification based on outcome variables and their predictors.

5.9.2 METHODS OF DATA COLLECTION

Data were collected by five nurses and two integrated eye care workers(supervisors) who were trained for three days by principal investigator on the study instrument and data collection procedure prior to data collection. The training was focus on understanding the meaning of each question, keeping confidentiality of the information they were gathered and quality of data collection. Emphasis was given on the significance and appropriate meanings of each question as well as how to explain for the participants in understandable manner if required.

Supervision of data collectors was made during the study period by two supervisors. The collected data was carefully checked for completeness as well as consistency. The data collection process was supervised by the investigator throughout the data collection period. Any confusion on the data collection procedure and or responses was handled immediately.

5.10 DATA MANAGEMENT AND ANALYSIS

Data was collected by structured questionnaire to facilitate detection of data entry error; the collected data was entered, clean, and coded with EPI info-7. Data was then export to SPSS version 23 for further analysis. All required variable recoding and transformation was done before the final data analysis. Descriptive statistics like frequencies and cross-tabulations were used to present the categorical variables and mean/standard deviation/ was used to describe a continuous variable. A frequency table was used to present descriptive results. For this study, bivariate logistic regression model was fitted as a primary method of analysis. Associations between outcome and predictor variables were calculated by odds ratio and 95% CI. Independent factors, with a P-value < 0.2 in the bivariate logistic regression was entered into the multivariable logistic regression models. After checking goodness of fit test, P-value < 0.05 was used as cut-off point for a variable to become significant predictor. A logistic regression table was also used to present the results.

5.11 ETHICAL CONSIDERATIONS

Ethical approval was secured from Institution Review Board (IRB) of Bahir Dar University (BDU). Permission letter from zonal and woreda health offices were received. Verbal consent was also secured from every respondent. Any information taken from the participants will be kept confidential. The right of participant, who are not willing, was respected. Cases who want to do surgery service during data collection period were linked to health center. We use codes rather than names of the participant while we are collecting the data.

5.12 PLAN FOR DISSEMINATION OF RESULTS

The study result will be presented to Bahir Dar University College of medicine & health Science School of public Health , Department of Epidemiology & biostatistics and documents will be disseminate to Woreda health office and respected kebeles, Amhara regional health Bureau, Carter center Ethiopia and ministry of health and other's. It will also be disseminated through publication on local or international journals and presentation on scientific conferences.

6 RESULTS

Socio demographic characteristics of the respondents

A total of 338 corrective upper eye lid surgery refusals (cases) and 338 operated (controls) were included with response rate of 100%. The mean age (±SD) was 48.94 (16.23) years among cases and 52.22 (15.47) years among controls. From cases 96 (28.4%) and from controls 106(31.4%) of respondents are greater than 60 years old. Female constitute 197(58.3%) of cases and 195(57.69%) of controls. Majority of respondents 273(80.8%) from cases and 274(81.1%) of controls resides in rural area. Illiterate constitutes 251(74.3%) of cases and 248(73.4%) of controls. Concerning to the occupation 179(53%) and 108(32%) of respondents in cases are house wife and farmers respectively whereas 172(50.9%) and 113(33.4%) in controls are house wife and farmer respectively. Majority of respondents, 328(97%) from cases and 330(97.6%) from controls were orthodox by religion. Concerning to family size 242(76.6%) of cases and 232(68.6%) of controls have a family size of less or equals four. One hundred thirty three (39.3%) of cases and 142(42%) of controls are from low income family (table 1).

Table-1: Socio demographic characteristics of the study participants Mecha woreda, Ethiopia 2018 (n =676)

Variables		Cases n(%)	Controls n(%)	Total (%)
Age	16-30	48(14.2)	34(10.1)	82(12.1)
	31-45	115(34)	83(24.6)	198 (29.3)
	46-60	79(23.4)	115(34.)	194 (28.7)
	>60	96(28.4)	106(31.4)	202 (29.9)
Sex	Male	141(41.7)	143(42.3)	284 (42)
	Female	197(58.3)	195(57.69)	392 (58)
Marital status	Single	16(4.7)	22(6.51)	38 (5.6)
	Married	215(63.6)	199(58.9)	414 (61.2)
	Widowed	93(27.5)	89(26.3)	182(26.9)
	Divorced	14(4.1)	28(8.3)	42 (6.2)
Educational status	Can't read & write	251(74.3)	248(73.4)	499 (73.8)
	Can read & write	32(9.5)	51(15.1)	83 (12.3)
	Primary education(1-8)	43(12.7)	35(10.4)	78 (11.5)

	Secondary edu.(9-12)	9(2.7)	3(0.9)	12 (1.8)
	College and above	3(0.9)	1(0.3)	4 (0.6)
Residence	Urban	65(19.2)	64(18.9)	129 (19.1)
	Rural	273(80.8)	274(81.1)	547 (80.9)
Occupation	House-wife	179(53)	172(50.9)	351 (51.9)
	Farmer	108(32)	113(33.4)	221 (32.7)
	Merchant	23(6.8)	31(9.2)	54 (8)
	Daily Laborer	25(7.4)	20(5.92)	45 (6.7)
	G/Employer	3(0.9)	2(0.59)	5 (0.7)
Religion	Orthodox	328(97)	330(97.6)	658 (97.3)
	Muslim	10(3)	8(2.4)	18 (2.7)
Family size	≤ 4	242(76.6)	232(68.6)	474(70.1)
	> 4	96(28.4)	106(31.4)	202(29.9)
Monthly income	≤ 1000	133(39.3)	142(42)	275(40.7)
	1001-2999	128(37.9)	124(36.7)	252(37.3)
	≥ 3000	77(22.8)	72(21.3)	149(22)

Eye condition & duration of trachomatous trichiasis

From the total respondents 230(88%) of cases and 189(55.9%) controls had trichiasis on their one eyes (unilateral). Almost half 166(49.1%) of operated respondents and 103(30.5%) refusals were offered for upper eye lid surgery in health centers. Mean duration of years living with TT (±SD) in Controls were 5.1(5.4) years and 3.8 (3.7) years among cases. Majority of respondents 271(80.2%) of cases and 208(61.5%) of controls has less or equal to five years after they had trachomatous trichiasis. Regarding to the pain they complains 79(23.4%) from cases and 109(32.2%) from controls complains severe pain due to Trachomatous trichiasis. More than half 187(55.3%) of controls practice epilation before surgery and from those 74(38.3%) of them epilate more than once a week whereas, in refusals (cases) 130(38.5%) practice epilation of trichiasis and from those 27(8%) of them epilate more than once a week. Majority of controls

313(92.6%) had trust to health professionals (IECWs) whereas only 165(48.8%) of refusals had trust to health professionals.

Table 2: Eye condition & duration with TT of participants, Mecha woreda, w/gojjam, amhara, 2018 (n=676)

Variables		Cases n(%)	Control n(%)	Total (%)
Affected eye	Unilateral	230(88%)	189(55.9)	419(62)
	Bilateral	108(32%)	149(44.1)	257(38)
Offered place	Home	118(34.9)	35(10.4)	153(22.6)
	Health post	101(29.9)	126(37.3)	227(33.6)
	Health center	103(30.5)	166(49.1)	269(39.8)
	Hospital	16(4.7)	11(3.3)	27(4)
Duration with TT	≤ 5 years	271(80.2)	208(61.5)	479(70.9)
	>5 years	67(19.8)	130(38.5)	197(29.1)
Frequency of epilation	Not epilate	208(61.5)	151(44.7)	359(53.1)
	>once a week	27(8)	74(21.9)	101(14.9)
	Once/week to once/month	37(10.9)	58(17.2)	95(14.1)
	< once a month	66(19.5)	55(16.3)	121(17.9)
Trust to health professional(IECWs)	No	98(29)	25(7.4)	123(18.2)
	Yes	240(71)	313(92.6)	553(81.8)

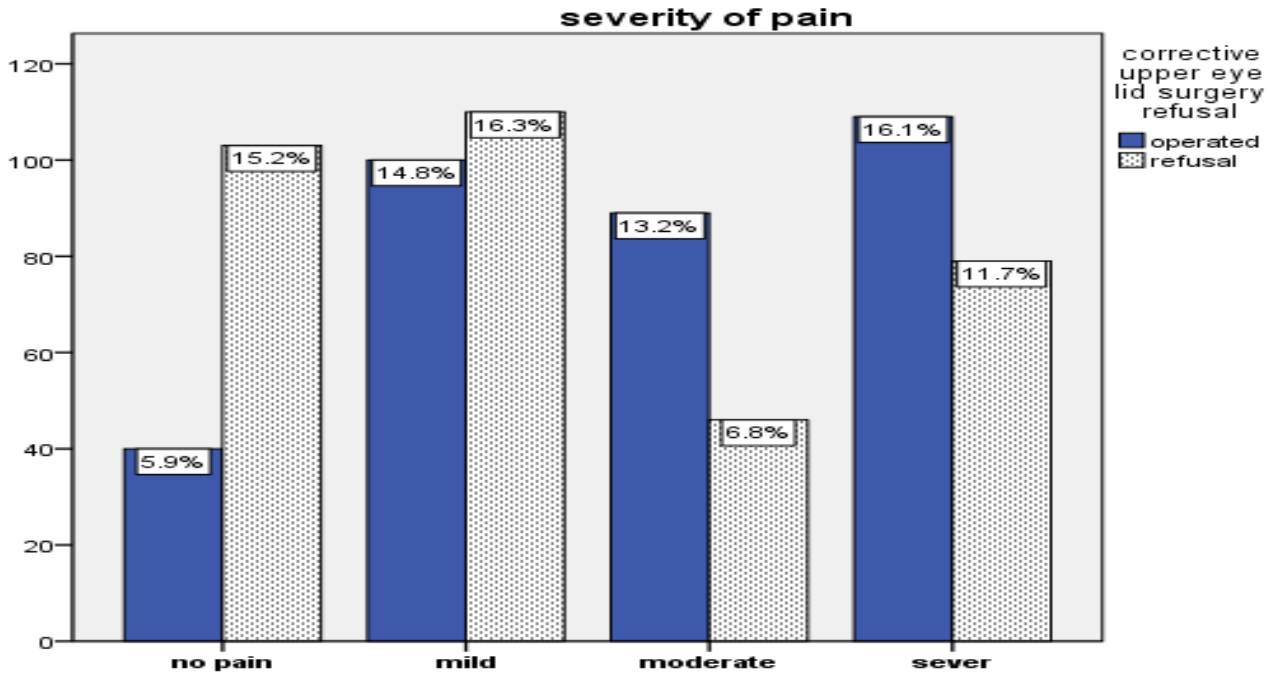

Figure-3 bar graph shows severity of pain status of respondents; Mecha woreda, west gojjam, Ethiopia, 2018 (n=676)

Knowledge about the consequence of TT and eye lid surgery

Knowledge of respondents was assessed by asking questions on activities done during surgery day up to healing time. To see their knowledge on surgery status 288(85.2%) from cases and 321(95%) from controls had knowledge about surgery. From all respondents 67% (453) had knowledge about TT out come on eye if untreated and out of these 197(58.3%) were from cases and 256(75.7%) were from controls.

Table 3: Knowledge about the consequence of TT and eye lid surgery of participants, Mecha woreda, w/gojjam zone, amhara, 2018 (n=676)

Variables		Cases n(%)	Controls n(%)	Total n(%)
Knowledge on outcome of TT if untreated	No	141(41.7)	82(24.3)	223(33)
	Yes	197(58.3)	256(75.7)	453(67)
Knowledge on surgery	No	50(14.8)	17(5)	67(9.9)
	Yes	288(85.2)	321(95)	609(90.1)

Time and indirect costs

More than three forth 260(76.9%) of cases and 274(81%) of controls live in less than 5km distance from nearby health institution. Majority of respondents 253(74.9%) of cases and 269(79.6%) of controls had no transport availability to nearby health institution. From total respondents only 35(5.2%) of them pay greater than 5 ETB birr in single trip for transport to reach nearest health institution. Regarding on walking distance availability 277(82%) of cases and 289(84.6%) of controls has walking some distance to reach nearest health institution. But majority of them 193(57.1%) of cases and 202(59.8%) of controls walks less than one hour. Only 16(4.7%) of cases and 19(5.6%) of controls cannot move by their own (needs assistant person) to reach the nearest health institution. And out of all only 3(0.4%) has no care taker.

Table 4: Time and indirect cost of study participants, Mecha woreda, w/gojjam, amhara, 2018(n=676)

Variables		Cases n(%)	Controls n(%)	Total (%)
Distance to near health institution	≤ 5 km	260(76.9)	274(81)	534(79)
	> 5 km	78(23.1)	64(18.9)	142(21)
Transport availability	No	253(74.9)	269(79.6)	522(77.2)
	Yes	85(25.1)	69(20.4)	154(22.8)
Transport fee	≤ 5 ETB birr	69(20.4)	47(13.9)	116(17.2)
	>5 ETB birr	14(4.1)	21(6.2)	35(5.2)
Presence of walking	No	61(18)	49(14.5)	110(16.3
	Yes	277(82)	289(84.6)	566(83.7)
Walking time by foot	≤ 1hour	193(57.1)	202(59.8)	395(58.4)
	> 1 hour	82(24.3)	75(22.2)	157(46.4)
Move by your own	No	16(4.7)	19(5.6)	35(5.2)
	Yes	322((95.3)	319(94.4)	641(94.8)
Presence of caregiver	No	2(0.6)	1(0.3)	3(0.4)
	Yes	14(4.1)	18(5.3)	32(4.7)

Fear of bad outcome & disease status

Most of cases 270(79.9%) and controls 284(84%) know operated person and from all cases 141(41.7%) and controls 243(72%) see good outcome (successful) surgery. From total respondents who observe 55(16.3%) from cases and 15(4.4%) from controls observe bad outcome from their family. Majority observed bad outcome was recurrence 56(16.6%) from cases and 16(4.7%) from controls. Only 33(9.8%) from cases and 37(10.9%) from controls have chronic disease. Among chronic diseases hypertension takes greater number 24(7.1%) from cases and 27(8%) from controls.

Table 5: Fear of bad outcome & disease status of participants, Mecha woreda, w/gojjam zone Ethiopia, 2018.(n=676)

Variables		Cases n(%)	Controls n(%)	Total n (%)
Where you see bad outcome(n=170)	Family	55(16.3)	15(4.4)	70(20.7)
	Village	54(16)	18(5.3)	72(21.3)
	Out of village	20(5.9)	8(2.4)	28(8.3)
Observed bad outcome	Recurrence	56(16,6)	16(4.7)	72(21.3)
	Over correction	47(13.9)	15(4.4)	62(18.3)
	Granuloma	25(7.4)	10(3)	35(5.2)
	I don't know	1(0.3)	0(0)	1(0.1)
Chronic disease status	No	305(90.2)	301(89.1)	606(89.6)
	Hypertension	24(7.1)	27(8)	51(7.5)
	DM	2(0.6)	1(0.3)	3(0.4)
	Asthma	7(2.1)	8(2.4)	15(2.2)
	Other	0(0)	1(0.3)	1(0.1)

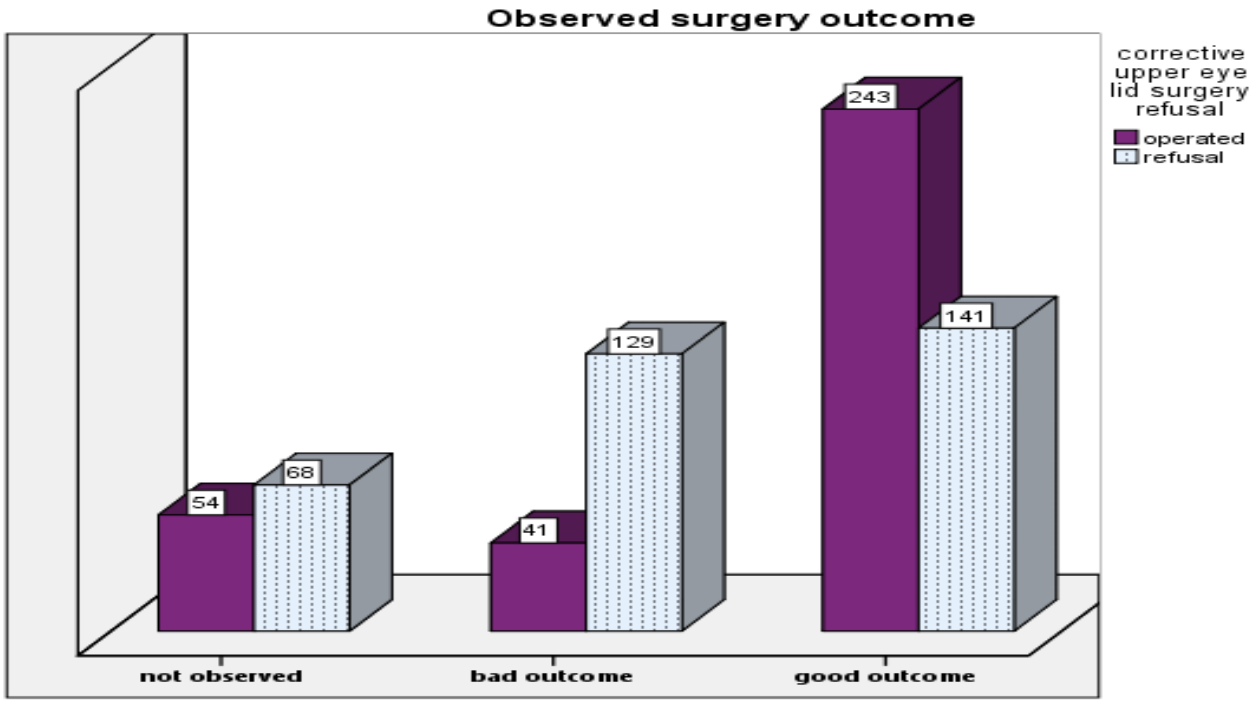

Figure-4: a bar chart shows observed surgery outcome of respondent's, Mecha woreda, west gojjam zone, Ethiopia, 2018.

Family & other person pressure

Majority respondents 325(96.2%) from cases and 307(90.8%) from controls decide their health & health related conditions by themselves. In addition to health workers 161(47.6%) of cases and 242(71.6%) of controls get advice from other persons to undergo surgery.

Table 6: Family & other person pressure condition of respondents, Mecha woreda, w/gojjam zone, amhara, 2018(n=676)

Variables		Cases n(%)	Controls n(%)	Total n(%)
Decision maker	I	325(96.2)	307(90.8)	632(93.5)
	Discussing with family member	13(3.8)	31(9.2)	42(5.5)
Other than h/worker advise	No	177(52.4)	98(29)	275((40.7)
	My family	17(5)	19(5.6)	36(5.3)
	My friend	24(7.1)	54(15.4)	78(11.2)
	H.D.A	7(2.1)	28(8.3)	35(5.2)
	Government body	113(33.4)	141(41.7)	254(37.6)

Determinants of corrective upper eye lid surgery refusals among TT patients

Variables associated with eye lid surgery refusal in binary logistic regretion at p value < 0.2 and enter to multi variable logistic regression model were duration with TT, other than health worker advice, observing operated person, observed outcome of surgery, knowledge about surgery, knowledge about TT outcome, age, decision maker, frequency of epilation, transport availability, trust on IECWs and education status.

Multivariable logistic regression analysis showed that respondents who epilate greater than once a week were 69% less to refuse corrective upper eye lid surgery than patients who had not epilate (AOR: 0.31, 95% CI: 0.17-0.6). And also respondents who epilate in time range between once a week up to once a month were 51% less to refuse corrective upper eye lid surgery than patients who had not epilate(AOR: 0.49, 95% CI:0.27-0.86). Upper eye lid surgery refusal was 71% less among patients who decide their health and health related conditions by discussion with family member than who decide their health and health related conditions by themselves (AOR: 0.29, 95% CI: 0.13-0.64). Respondents who know they had TT before five years were 50% less to refuse surgery than patients who knows less or equal five years (AOR: 0.5, 95% CI: 0.31-0.79). Respondents who had got personal advice other than health worker decreases refusing to surgery by 74% (AOR: 0.26, 95% CI: 0.14-0.5), 89% (AOR: 0.11, 95% CI: 0.04-0.28) and 54% (AOR: 0.46, 95% CI: 0.3-0.7) if from friends, health development army and government bodies respectively. Observing bad surgery outcome was 3.51 times more likely to refuse eye lid surgery than not observed patients (AOR: 3.51, 95% CI: 1.94-6.35). Respondents who had knowledge on eye lid surgery had 68% less to refuse eye lid surgery (AOR: 0.32, 95% CI: 0.16-0.64). In addition respondents who has no knowledge on TT out come if left untreated had 77% more likely to refuse eye lid surgery than who had knowledge on outcome of TT on eye if untreated (AOR: 1.77, 95% CI: 1.18-2.65). Surgery refusal were 74% less among respondents who have trust on health professionals (TT surgeons) compared to respondents who have no trust to TT surgeons(AOR: 0.26, 95% CI: 0.15-0.45).(table-7)

Table 7: Determinants of corrective upper eye lid surgery refusals among TT patients in Mecha woreda, w/gojjam, Ethiopia, 2018, (n=676).

Variables		Cases	Controls	COR[95%CI]	AOR[95%CI]
Duration with TT	≤ 5 years	271	208	Reference	Reference
	> 5 years	67	130	0.4 [0.28-0.56]	0.5 [0.31-0.79]*
Frequency of epilation	No epilation	204	145	Reference	Reference
	>once a week	27	74	0.27 [0.16-0.43]	0.31 [0.17-0.6]*
	Once/week to once/month	37	58	0.46 [0.3-0.74]	0.49[0.27-0.86]*
	< once a month	66	55	0.87 [0.58-1.32]	0.96[0.57-1.61]
Knowledge on eye lid surgery	No	50	17	Reference	Reference
	Yes	288	321	0.31 [0.17-0.54]	0.32 [0.16-0.64]*
Age	16-30	48	34	Reference	Reference
	31-45	115	83	0.98[0.58-1.65]	1.09[0.57-2.09]
	46-60	79	115	0.49[0.29-0.82]	0.53[0.27-1.03]
	>60	96	106	0.64[0.38-1.08]	1.03[0.52-2.03]
Knowledge on TT outcome if untreated	Yes	197	256	Reference	Reference
	No	141	181	2.23 [1.61-3.11]	1.77 [1.18-2.65]*
Trust on IECWs	No	98	25	Reference	Reference
	Yes	240	313	0.2 [0.12-0.31]	0.26[0.15-0.45]*
Decision maker in family	I	325	307	Reference	Reference
	Family member	11	31	0.4 [0.2-0.77]	0.29 [0.13-0.64]*
Other person advice	No	177	198	Reference	Reference
	My family	17	19	0.49[0.25-1]	0.83[0.34-1.99]
	Friends	24	54	0.26 [0.15-0.44]	0.26 [0.14-0.5]*
	H.D.A	7	28	0.14 [0.06-0.33]	0.11 [0.04-0.28]*
	Gov't body	113	141	0.44 [0.31-0.63]	0.46 [0.3-0.7]*
Observed surgery outcome	Not observe	68	54	Reference	Reference
	Bad outcome	129	41	2.5 [1.51-4.12]	3.51[1.94-6.35]*
	Good outcome	141	243	0.46[0.31-0.7]	0.63[0.38-1.02]

* - Significant at multivariable analysis ($p<0.05$)

7. DISCUSSIONS

Eye lid surgery refusal was found to decreases with duration of illness. This result contradicts with the study done in south wollo, Mehalsayint district, which revealed that respondents greater than five years with TT had 2.56 times more not to attend surgery than those respondents less or equal 5 years with TT(25). While it is supported by prospective cohort study done in Tanzania from identified 200 patients who needed surgery, the trichiasis surgical coverage at baseline was 16.9% but one year later the surgical uptake among these patients was 44.8% and among determinant's to decrease uptake to surgery were having minor lashes(19). In addition this finding is supported by a study done in north Ethiopia (14). This might be due to the symptoms during starting was mild but as time goes due to progressive scarring effect of the bacteria on eye lid(37) the inturned lashes which scratches the eye increases in number, causes severe pain. As the pain increases the patients may want treatment, to relief from this severe pain.

Practicing more frequent epilation in respondents associates with less to refuse surgery, 51% less from those who epilate in range time between once a week up to once per month and 68% less from those who epilate more than once per week. This is supported by study findings in south wollo, Mehalsayint which revealed that non-epilators had 3.22 more not to uptake surgery than who had epilation history at least once. Epilation is recommended for minor TT patients (< 5 lashes)(38). But if it practiced in major TT patients it might become more frequent & might add another load on day to day activity, rather they might choose a treatment which completely cures and giving them rest. Surgery is proven in TT patients improving the ability of operated individuals to perform productive activities, quality of life and also vision (30, 39). So it might be the reason why frequently epilators less to refuse surgery.

Surgery refusal is less among individuals who had knowledge on surgery (AOR 0.32: 95% CI: 0.16-0.64). This is supported by related study done in Tanzania for identifying Patient perceived barriers to Trichiasis Surgery, result showed that 26% of acceptors of surgery suggested that better education and advice about the surgery would help improve services(32). Another qualitative study in Tanzania revealed, from community health workers and patients raised long recovery time, fear of surgery pain & Poor anecdotal experiences with surgery as a reasons for refusing surgery(34). This is supported by a study done in basoliben, revealed that among majority of non-operated respondents 81% had no knowledge on eye lid surgery (24). Patients

who had knowledge for eye lid surgery means they knows that, surgery is conducted with lidocaine (without pain), takes short time to do surgery, needs short days to heal and to return work. Those might be helping for TT patients to decide to uptake surgery.

This study revealed that Surgery refusal is 77% higher among individuals who had no knowledge on TT outcome in eye if untreated (AOR 1.77: 95% CI: 1.18-2.65). This is supported by a study in Tanzania revealed that in surgery acceptors knowledge on TT progresses to blindness was 95.7% and in non-acceptors it was 87.7% (8% less in refusals) (32). Fear of losing vision comes from knowledge on TT effect on eye if untreated might be stronger motivator among operated patients to operate, but refusals lack it.

Surgery refusal had 74% less among respondents who had trust on IECWs (TT surgeons) compared to respondents who had no trust to IECWs. A study in south wollo in poor utilization of surgery shows non-significant result but descriptive stastics revealed 89.6% of respondents from non-operated and 98.8% of respondents from operated (9.2% more in controls) had trust to TT surgeons(25). From interviewed Surgeons (n=94) who were still in the programme in west amhara 15% of them thought that patients want an expatriate surgeon (not show trust to surgeons) for patient reasons not presenting to surgery site(28). The primary objective of patients when going to surgery place is to have successful outcome surgery (looking good after surgery), But a clinical trial studies in amhara region revealed that surgical failure (recurrence) rate is varying from 7% up to 50%, Eye contour abnormality (ECA) varying from 19% up to 28% and granuloma varying from 3.2% up to 5.6% between surgeons(40, 41). Surgeons who had low unfavorable outcome might get trust by patients and surgeons who had high unfavorable outcome might not get trust by patients. Fear of bad outcome might be one reason to refuse surgery in patients who had not trusting TT surgeons.

Eye lid surgery refusal was 71% less among patients who decide their health and health related conditions by their family member than who decide their health and health related conditions by themselves. The difficult part in patients to accept surgery is decision making(16). During a time their husband/wife, their father/mother and son/daughter might be helping to convince non-acceptors to receive surgery and also hesitant patients might be more willing to trust fellow their family members.

Getting advice other than health worker decreases refusal to surgery by 74%, 89%, and 54%, if it is from friends, health development army and government bodies respectively. This is supported by study done in Tanzania which shows other person was told to have surgery in 22.3% of respondents among acceptors and 19.2% of respondents among non-acceptors (3.2% more in acceptors)(32). It might be due to friends of patients especially who have a positive experience of surgery persuade others to come forward for surgery. In addition patients might be more willing to trust and fellow their leaders. That is why most operated patients are convinced to uptake surgery by kebele leaders and health development army's.

This finding revealed that respondents who observe bad outcome had 3.51 times more likely to refuse eye lid surgery than not observed patients. This is supported by study in Tanzania in which patients in focus group discussion raised a reason for refusing to surgery is that they wanted to see how others in the village did after surgery, and when they saw the rapid recovery of their neighbors, they wanted the surgery for themselves (34). A study in west amhara shows from interviewed 94 Surgeons who were still in the programme 9.5% of them thought that poor surgical quality were one reason for patients not presenting to surgery site (28). Patients who have a positive experience of surgery are the best ambassadors to their communities in terms of persuading others to come forward for surgery. Successful surgery patients could be strong voices to help convince non-acceptors to receive surgery, in contrary if they see unfavorable outcome surgery from previous operated persons they might hear bad stories about surgery which might had effect on their decision to undergone surgery.

8. STRENGTH & LIMITATION OF STUDY

Strength

- Inclusion of study participants from all kebeles of the District

Limitations of study

- Study included Trachomatous trichiasis cases that have been already screened by Health Workers and had not tried to search new cases because of cost and time.
- Severity grading of Trachomatous trichiasis was not measured, since information was collected from operated controls.

9. CONCLUSIONS

This study revealed that long duration with TT, frequently epilation, knowledge on eye lid surgery, having trust to surgeons, deciding by discussion with family member for own health and personal advice decreases refusing to surgery. In the other way observed bad outcome and lack of knowledge on trachomatous trichiasis outcome if untreated increases refusing to surgery.

10. RECOMMENDATIONS

Based on the findings of the study the following recommendations were suggested:-

- Integrated eye care workers (TT surgeons) should work to decrease unsuccessful (bad) outcomes surgery.
- Health workers should work to increase awareness of trachomatous trichiasis patients to uptake surgery as early as the disease starts.
- Health workers should work to increase awareness of TT patients, concerning to have knowledge on surgery process and effect of disease (TT) on their eye if untreated.
- Partners as well as the community should be encouraged to accompany trichiasis patients to surgery site.
- The government and NGOS should work to increase community perception towards IECWs (TT surgeons) those give eye lid surgery services.
- Family members should be encouraged to supporting and encouraging of patients to uptake surgery, they played a valuable role in decision making.
- Researchers should replicate this study by including severity grading of trachomatous trichiasis.

11 REFERECENCES

1.Nancy J. Allen M, Ph.D. Eliminating Blindness from Trachoma Infection 2012.

2.(ICTC) ICfTC. Preferred Practices for Zithromax®Mass Drug Administration. 2013.

3.World Health Organization LSoHTM, and the International Trachoma Initiative. Trachoma control, A guide for programme managers. WHO Library Cataloguing. 2006.

4.WHO. Trichiasis surgery for trachoma. WHO Library Cataloguing-in-Publication Data. 2013.

5.Anthony W Solomon, Kurylo E. The Global Trachoma Mapping Project. International Trachoma Initiative, Decatur, USA. 2014.

6.Rajak' SN, Burton MJ. Trachomatous Trichiasis and its Management in Endemic Countries. researchgate,pubmed. 2012;vol -57, no -2.

7.(ICTC) ICfTC. Training Curriculum for Trichiasis Case Identifier. International Coalition for Trachoma Control (ICTC),. 2015.

8.Johns Hopkins University BM. WORLD HEALTH ORGANIZATION Report of the 3RD GLOBAL SCIENTIFIC MEETING ON TRACHOMA. 2010.

9.WHO. Accelerating work to overcome the global impact of neglected tropical diseases a roadmap for implementation. 2012.

10.Federal Democratic Republic of Ethiopia MoH. national master plan for NTD (2013-2015). 2013.

11.King JD, Teferi T, Cromwell EA, Zerihun M, Ngondi JM, Damte M, et al. Prevalence of trachoma at sub-district level in ethiopia: determining when to stop mass azithromycin distribution. PLoS neglected tropical diseases. 2014;8(3):e2732.

12.Frick KD, Basilion EV, Hanson CL, Colchero MA. Estimating the burden and economic impact of trachomatous visual loss. Ophthalmic epidemiology. 2003;10(2):121-32.

13.Gebre T. Trachoma control & elimination in Africa. International Journal of Infectious Diseases. 2014;21:42.

14.Habte D, Gebre T, Zerihun M, Assefa Y. Determinants of uptake of surgical treatment for trachomatous trichiasis in North Ethiopia. Ophthalmic epidemiology. 2008;15(5):328-33.

15.WHO Alliance for the Global Elimination of Blinding Trachoma by the year 2020. Progress report on elimination of trachoma, 2013. Releve epidemiologique hebdomadaire. 2014;89(39):421-8.

16.Habtamu E, Burton M. Clearing the trichiasis backlog: experiences in Amhara, Ethiopia. Community eye health. 2015;28(90):38.

17.Federal Democratic Republic of Ethiopia MoH. Second Edition of National Neglected Tropical Diseases Master Plan. 2016.

18.J.C.Bowman1 R, Johnson1 GJ, OSS, NA, PM, JR, et al. Should trichiasis surgery be offered in the village? A community randomised trial of village vs. health centre-based surgery. Tropical Medicine and International Health. 2000;volume 5 no 8 pp 528–533

19.Michael Mahande, Manisha Tharaney, Edward Kirumbi, Edith Ngirawamungu, Robert Geneau, Lisa Tapert, et al. Uptake of trichiasis surgical services in Tanzania through two village-based approaches. The British journal of ophthalmology. 2007;91:139–42.

20.Andualem B, Beyene B, Kassahun M, Kassa A, Zerihun M. Trachoma Elimination: Approaches, Experiences and Performance of Interventions in Amhara Regional State, Ethiopia. J Eye Dis Disord. 2018;4(115):2.

21.Center C. Summary Proceedings, Eighteenth Annual Trachoma Program Review Focusing on 2020: 4 Years Remaining Atlanta, Georgia. 2017.

22.ethiopia Cc. Trachoma impact survey in amhara (TIS),. un published. 2016.

23.office Mwh. House to house trachomatous trichiasis screening report. 2017.

24.Kassahun Ketema Aredo1, Adugna Birhanu Kebede2, Mekonin Aychiluhim3, Hordofa MA. Determinants of Eye Lid Surgical Care Utilization Among Trachomatous Trichiasis Patients in Rural Communities: In the Case of Basoliben District, North West Ethiopia. American Journal of Internal Medicine. 2014.

25.Tedla Desta Meshesha, Goitom Halefom Senbete, Bogale GG. Determinants for not utilizing trachomatous trichiasis surgery among trachomatous trichiasis patients in Mehalsayint District, North-East Ethiopia. PLoS neglected tropical diseases. 2018.

26.Oliva MS, Munoz B, Lynch M, Mkocha H, West SK. Evaluation of barriers to surgical compliance in the treatment of trichiasis. International ophthalmology. 1997;21(4):235-41.

27.Rajak SN, Habtamu E, Weiss HA, Bedri A, Zerihun M, Gebre T, et al. Why do people not attend for treatment for trachomatous trichiasis in Ethiopia? A study of barriers to surgery. PLoS neglected tropical diseases. 2012;6(8):e1766.

28.Habtamu E, Rajak SN, Gebre T, Zerihun M, Genet A, Emerson PM, et al. Clearing the backlog: trichiasis surgeon retention and productivity in northern Ethiopia. PLoS neglected tropical diseases. 2011;5(4):e1014.

29.Rajak SN, Habtamu E, Weiss HA, Kello AB, Abera B, Zerihun M, et al. The outcome of trachomatous trichiasis surgery in Ethiopia: risk factors for recurrence. PLoS neglected tropical diseases. 2013;7(8):e2392.

30.Habtamu E, Wondie T, Aweke S, Tadesse Z, Zerihun M, Melak B, et al. Impact of trichiasis surgery on daily living: A longitudinal study in Ethiopia. Wellcome open research. 2017;2:69.

31.Habtamu E, Rajak SN, Tadesse Z, Wondie T, Zerihun M, Guadie B, et al. Epilation for minor trachomatous trichiasis: four-year results of a randomised controlled trial. PLoS neglected tropical diseases. 2015;9(3):e0003558.

32.Bickley RJ, Mkocha H, Munoz B, West S. Identifying Patient Perceived Barriers to Trichiasis Surgery in Kongwa District, Tanzania. 2017;11(1):e0005211.

33.Bowman RJ, Faal H, Jatta B, Myatt M, Foster A, Johnson GJ, et al. Longitudinal study of trachomatous trichiasis in The Gambia: barriers to acceptance of surgery. Investigative ophthalmology & visual science. 2002;43(4):936-40.

34.Gupta KM, Harding JC. Why do patients refuse trichiasis surgery? Lessons and an education initiative from Mtwara Region, Tanzania. 2018;12(6):e0006464.

35.Molla Tafere AH, Biruhalem Kassa, Baye Berihun, Mekonen Tolla,, Yihalem Denekew YGSaFT. PARTICIPATORY RURAL APPRAISAL REPORT MECHA DISTRICT. BDU-CASCAPE working paper 5.

36.office Mwh. Mecha woreda health profile. merawi: un published; 2017.

37.Burton MJ, Rajak SN, Hu VH, Ramadhani A, Habtamu E, Massae P, et al. Pathogenesis of progressive scarring trachoma in Ethiopia and Tanzania and its implications for disease control: two cohort studies. PLoS neglected tropical diseases. 2015;9(5):e0003763.

38.Rajak SN, Habtamu E, Weiss HA, Kello AB, Gebre T, Genet A, et al. Surgery versus epilation for the treatment of minor trichiasis in Ethiopia: a randomised controlled noninferiority trial. PLoS medicine. 2011;8(12):e1001136.

39.Woreta TA, Munoz BE, Gower EW, Alemayehu W, West SK. Effect of trichiasis surgery on visual acuity outcomes in Ethiopia. Archives of ophthalmology. 2009;127(11):1505-10.

40.Habtamu E, Wondie T, Aweke S, Tadesse Z, Zerihun M, Gashaw B, et al. Oral doxycycline for the prevention of postoperative trachomatous trichiasis in Ethiopia: a randomised, double-blind, placebo-controlled trial. The Lancet Global health. 2018;6(5):e579-e92.

41.Habtamu E, Wondie T, Aweke S, Tadesse Z, Zerihun M, Gashaw B, et al. Predictors of Trachomatous Trichiasis Surgery Outcome. Ophthalmology. 2017;124(8):1143-55.

12 ANNEXES

12.1 INFORMATION SHEET

Introduction

Hello, my name is ----------. I am working as data collector for study being conducted in this area by Mr. Melese kitu (Health officer), who is studying his master's degree in epidemiology at Bair Dar University, College of medical & Health Sciences in Epidemiology Department. I kindly request you to offer me your attention to explain you about the study and being selected as the study participant.

Study Title: "DETERMINANTS OF CORRECTIVE EYE LID SURGERY REFUSALS AMONG TRACHOMATOUS TRICHIASIS PATIENTS IN MECHA WOREDA, WEST GOJJAM ZONE, 2018 G.C"

Purpose: This study is intended to identify associated factors for eye lid surgery refusals in Trachomatous trichiasis patient, in Mecha woreda, west gojjam zone, Ethiopia. Therefore, information obtained from this study may be used by MOH, organizations supporting services, researchers and local health planners.

Procedure and duration: First of all, you were selected by random method. I will administer a questionnaire to fill pertinent data about prevalence and associated factors for Trachomatous trichiasis. There is examination on eye and about 42 questions I have to answer. It takes about 20-30 minutes, so I kindly request you to spare me this time for filling this questionnaire.

Risks: The risks of being participating in this study are very minimal, but only taking few minutes from your time. Other than this the study will not cause any physical or psychological harm.

Benefit: There would not be any direct payment for participating in this study. But findings from this research may reveal important for knowing your TT status & planners and community at large.

Confidentiality: The information that you provide will be confidential. No information that will identify you. The findings of the study will be general for the study population and will not reflect anything particular of individual persons. The questionnaire will be coded to exclude showing names; no references will be made in oral or written reports that could link participants to research.

Rights: Participation in this study is fully voluntary. You have right to declare to participate in this study or right not to participate from the beginning, or stop at any time after starting participation. However, we hope you will answer the questions, which will benefit services you provide nation.

Contact address: If there are any questions or enquires any time about the study, please contact and speak to principal investigator.

Name: Melese kitu, Address: Phone *0918160680*, Email: melesekitu@ymail.com or melesekitu0@gmail.com

12.2 STATEMENT OF CONSENT

I have read (was read to me) the participant information sheet. I have clearly understood the purpose of the research, the procedure, risks and benefits, issues of confidentiality, rights of participating and contact address for any queries. I have given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with verbal.

Name of data collector and signature _____date _____/_____/2018

Code----------kebele----------got----------

12.3 QUESTIONNAIRE

Questionnaire- English version

Code	Questions	Answer categories	
Part I; Participant type filtering question			
001	Participant type	0……..operated cases 1……refusal case	
Part II: Socioeconomic and Demographic characteristics			
002	your age	…… years	
003	Sex	1. male 2. female	
004	Marital status	1. single 2. married 3. widowed 4.divorced	
005	What is your educational level	Can't read and write ……1 Read and write.……..2 Primary education(1-8)..…3 Secondary education(9-10)….4 College and above ……5	
006	What is your main occupation?	House-wife……1 farmer……2 merchant…….. 3 Daily Laborer---------- 4 G/Employer----------5 Other……. 6	
007	Residence	0. urban 1. rural	
008	What is your religion?	Orthodox……1 Muslim ……..2 Protestant ……..3 Others (specify) ……4	

009	Size of your family	……	
010	How much is your family average Monthly income (Birr)	……..	
Part III Eye condition & duration of trachomatous trichiasis			
011	Which eye is affected by TT?	Right eye/Left eye/ only……...0 Both eye……1	
012	From where health workers offer to operate you?	at home……..1 at h/post……. 2 at h/center……3 at hospital…….4	
013	For how many months/years since you have the trichiasis?	…….	
014	How much pain have you experienced by trichiasis on your eye?	0= None 1= Mild(feels pain not disturb any activity) 2= Moderate(sometimes disturb) 3= Severe(usually disturb normal activity)	
015	Do you epilate (cautering) when you feel pain?	No ……..0 Yes……..1	If no skip to 017
016	How often do you epilate or cautering?	1 = More than once a week 2 = once/week to once/month 3 = Less than once a month	
017	Do you believe that health professionals (TT surgeons) can do the surgery well?	No……..0 Yes…….1	
Part III: knowledge about the consequence of TT and eye lid surgery			
018	In the end, what can happen if you have Trachomatous trichiasis & not operate?	1….Blindness 2…..Reduced vision 3……the same 4…….No answer/don't know	

019	Is TT completely treatable	No …….0 Yes……..1	
020	Do you know surgery is conducted by lidocaine without pain?	No ……..0 Yes……..1	
021	For eye lid surgery which body part you thing is painless by lidocaine?	0..whole body 1….only eye lid	
022	How many minute do you think that eye lid surgery process takes?	0……≤ 30minute 1……> 30minute	
023	Where do you think is the site of surgery for TT?	0…….eye ball 1…… eye lid 2……..I don't know	
024	How many days do you think that the plaster on eye removed	0…….>2days 1…….≤ 2days	
025	How many days do you think that it takes to heal after surgery	0……> 14days 1……..≤ 14days	
026	How many days do you think that you return to work after surgery	0……> 3days 1……..≤ 3days	
Part IV: lack of time/busy by tasks & indirect costs			
027	How many distance you think is from your home to nearby h/institution	…….km.	
028	Is there transport from home up to nearest h/institution	No ……..0 Yes……..1	If no skip to 030
029	If yes to no 028…Amount of fee to nearest h/institution	……..	
030	Is there a road/space/ without transport (walking distance) from home up to nearest h/institution	No ……..0 Yes……..1	If no skip to 032
031	If yes to no 030 …how many hours it take by foot to nearest h/institution	……	
032	Can you move from your home to	No ……..0	If yes skip

	health institution by your own without assistant?	Yes……..1	to 034
033	If no to no 032 ….. Do you have care giver in your family?	No ……..0 Yes……..1	
Part V: Fear of bad outcome & health condition			
034	Do you know/see operated TT patient	No ……..0 Yes……..1	If no skip to 038
035	If yes, to ques. Num. 034 How you judge outcome of surgery	Bad outcome ……0 Good outcome……..1	If 1 skip to 038
036	If 0 to ques. Num. 035 From where you see bad out come?	1…..from family member 2…. from my village 3…. Far away my living room	
037	If 0 to ques. 035 What is that bad outcome	1…recurrence 2….over correction 3….granuloma 4….eye contour abnormality 5….i don't know	
038	Do you have diagnosed chronic disease	No ……..0 Yes……..1	If no skip to 040
039	If yes to no 038 …… what is that chronic disease?	1…….hypertension 2…….diabetic mellitus 3……..bronchial asthma 4……..others (specify)	
Part VI family or other person pressure			
040	Who is decision maker in your family in your health & health related problems?	I ……...…….0 my husband/wife……...1 my father/mother ……... 2 other family member ……..…3	

041	Other than health professionals is there any one advice you to operate?	No ……..0 Yes……..1	
042	If yes to no 041……Other than health worker who advise you to operate?	0……no one advise me 1……from my family 2…….my friends 3…….health development army 4……..from gov't body (kebeles head) 5……..other (specify	**End of questioner**

Thanks these is the end of the questioner

ፈቃድ መጠየቂያ

ጤና ይስጥልኝ ስሜ ----------ይባላል። አቶ መለሰ ክቱ(ጤና መኮነን) ከባህርዳር ዩኒቨርሲቲ ጤና ት/ት ክፍል በሚሰራው ጥናት ላይ አባል ነኝ። ጥናቱ የሚያተኩረው ለዓይን ጸቀብ ቀዶ ህክምና እምቢተኛች ተዛማጅነት ያላቸዉን ነገሮች ለማጥናት ነው። አቶ መለሰ ክቱ የጤና መኮነን ባለሙያ ሲሆን አሁን በባህረዳር ዩኒቨረሲቲ በኢፒዲሞሎጅ 2ኛ ድግሪዉን እየተማረ ሲሆን ለዓይን ጸቀብ ቀዶ ህክምና እምቢተኛች ተዛማጅነት ያላቸዉን ነገሮች በሚጫ ወረዳ ህብረተሰብ ያለበትን ሁኔታ ለማጥናት ነዉ።

በጥናቱ በመሳተፍዎ ከልብ አመሰግናለሁ ። ከላይ ከተጠቀሰው ለዓይን ጸቀብ ቀዶ ህክምና እምቢተኛነት ጋር ያለወትን ሀሳብ እጠይቀወታለሁ። እርስዎ የሚሰጡት ትክክለኛ መረጃ ለወረዳ፤ለዞን እና ለሀገር አቀፍ የዓይን ጸጉር ወደ ውስጥ የመቀልበስ ለመከላከል አላማ ያገለግላል፤ ምርመራ እና 42 ቃለ መጠይቅ አለ። ቃለ-መጠይቁ ከ 20 እስከ 30 ደቂቃ ሊወስድ ይችላል። የሚሰጡት ማንኛውም መረጃ ምስጢራዊነቱ የተጠበቀ ነው። በጥናቱ መሳተፍ የጎላ ችግር የለውም ለቃለ-መጠይቁ ከሚወስዱት ጊዜ ባለፈ፤ነገርግን የርስዎ በጥናቱ መሳተፍ ምክንያቶችን በመለየት ለዓይን ጸቀብ ቀዶ ህክምና አገልገሎት ለማሻሻል ጠቃሚ ነው ።

በጥናቱ በመሳተፈዎ የሚያገኙት ቀጥተኛ ጥቅምም ሆነ ጉዳት የለውም፤ በጥናቱ መሳተፍ በፈቃደኝነት ላይ የተመሰረተ ነው ከጥያቄዎቹ የተወሰነውን ወይም ሙሉ በሙሉ ያለመመለስ መብት አለዎት፤ነገር ግን የርስዎ መሳተፍ እጅግ አስፈላጊ ስለሆነ እንደሚሳተፉ ተስፋ አለኝ።

የበለጠ መረጃ ካስፈለገዎት በሚከተሉት አድራሻ ጥናቱን የሚያካሂደው ሰው አድራሻ መጠቀም ይችላሉ ።

መለሰ ክቱ፤ ስ.ቁ። 0918160680, **ኢ.ሜል** : melesekitu0@gmail.com

ከላይ በተዘረዘሩት የቃል ስምምነት መሰረት

ለቃለ-መጠይቁ ተስማምተዋል

ከተስማሙ ቃለ-መጠይቁን ይጀምሩ

ፈቃደኛ ካልሆኑ ወደሌላ ተሳተፊ ይሂዱ

ቃለመጠይቁን ያካሄደው ስም ----------ፊርማ----------ቀን----------

ኮድ----------ቀበሌ----------

ወደ ሚቀጥለዉ ገጽ ይሂዱ

አማርኛ መጠይቆች

ኮድ	መጠይቆች	የመልስ አማራጮች	
ክፍል I; **የተሳታፊ ዓይነት የማጣሪያ ጥያቄ**			
001	**የተሳታፊ ዓይነት**	0……..**ቀዶ ጥገና የተሰሩ** 1…….**ፈቃደኛ ያልሆኑ(እምቢተኛ)**	
ክፍል II: **መሰረታዊ የግል ሁኔታዎች**			
002	**ዕድሜዎ** (**በዓመት**)	……	
003	**ጸታ**	1. **.ወንድ** 2. **ሴት**	
004	**የጋብቻ ሁኔታ**	1. **ያላገባ/ች** 2. **ያገባ/ች** 3. **የሞተባት** 4. **የፈታ/ች**	
005	**የትምህርት ደረጃዎ ስንት ነዉ**	1. **ማንበብና መጻፍ የማትችል** 2. **ማንበብና መጻፍ እችላለዉ** 3. **አንደኛ ደረጃ** (ከ1-8 **ክፍል**) 4. **ሁለተኛደረጃ**(ከ9-12 **ክፍል**) 5. **ሰርቲፊኬት እና በላይ**	
006	**መደበኛ የስራ ሁኔታ**	1. **የቤት እመቤት** 2. **አርሶ አደር** 3. **ነጋዴ** 4. **የቀን ሰራተኛ** 5. **የመንግስት ሰራተኛ** 6. **ሌላ**……..	
007	**የሚኖሩበት ቦታ**	0… **ከተማ** 1… **ገጠር**	
008	**ኃይማኖት**	1. **ኦርቶዶክስ** 2. **ሙስሊም** 3. **ሌላ**……	
009	**አጠቃላይ የቤተሰቡ አባላት ብዛት**	……..	

010	የቤተሰብዎ አማካኝ ወርሃዊ ገቢ ስንት ነዉ በብር?	……ብር	
ክፍል III፡ የዓይን ሁኔታ እና የበሽታው ቆይታ			
011	ጸጉር ያለበት የትኛው ዓይን ነው	የቀኝ /ግራ ዓይን/ ብቻ……0 ሁለቱንም ዓይን ……1	
012	ከየት ነው ቀዶ ህክምና ለመሰራት የተጋበዙት?	ከቤቴ …… .1 ከጤና ኬላ…….. . 2 ከጤና ጣቢያ……3 ከሆስፒታል…….4	
013	የአይን ጭራ መታጠፍ ምልክቱ ከጀመረዎት/እንዳለብዎት ካዎቁ/ ስንት ዓመት ይሆነዋል?	……ዓመት	
014	በጸጉሩ ምክንያት ምን ያህል ህመም ይሰማዎታል?	*0* = ህመም የለኝም 1 = በጥቂቱ(ቀላል ህመም ብቻ) 2 = መካከለኛ (ህመም እና የቀን ተቀን ስራ አልፎ አልፎ) 3 = እጅግ በጣም (ህመም እና የቀን ተቀን ስራ በአብዛኛው)	
015	ፀጉር ይነቅላሉ?	የለም…… 0 አዎ……1	መልስዎ የለም ከሆነ ወደ ጥያቄ 017 ይለፉ
016	መልስዎ አዎ…. ከሆነ በየስንት ጊዜው ፀጉር ይነቅላሉ?	1 = ከአንድ ጊዜ በላይ በሳምንት 2 = ከአንድ ጊዜ በሳምንት - አንድ ጊዜ በወር 3 = በወር ከአንድ ጊዜ በታች	
017	ጤና ባለሙያወች ቀዶ ህክምናውን በጥሩ ሁኔታ ይሰሩታል ብለው ያምናሉ	የለም……0 አዎ……1	
ክፍል III: ስለ ዓይን ጸጉር ወደ ውስጥ መቀልበስ እና ቀዶ ህክምናው ያለዎትን እውቀት			
018	የዓይን ጸጉር ወደ ውስጥ መቀልበስ ካልተሰሩ የመጨረሻ ውጤት ምንይሆናል ብለው ያስባሉ?	1. አይነ-ስውርነት 2. እይታ መቀነስ 3. ተመሳሳይ	

		4. አላውቅም 5. ሌላ……	
019	የዓይን ጸጉር ሙሉ ለሙሉ ይድናል ብለው ያስባሉ	1 = የለም 2 = አወ	
020	የአይን ቀዶ ህክምና በማደንዘዣ ያለ ህመም እንደሚሰጥ ያውቃሉ	1 = የለም 2 = አወ	
021	ለአይን ቀዶ ህክምና ለመስራት ማደንዘዣ ከተሰጠው የሚያደነዝዘው የትኛውን ነው	1….መላ ሰውነታችን 2……ቅንድብ ብቻ	
022	ለአንድ አይን ቀዶ ህክምና ለመስራት ተጀምሮ እስኪቸጨረስ ስንት ደቂቃ የሚወስድ ይመስለዎታል?	1…….. ≤ 30 ደቂቃ 2…….. > 30 ደቂቃ	
023	የአይን ቀዶ ህክምና የትኛው የአይን ክፍል ላይ የሚሰጥ ይመስልዎታል?	1…… ቅንድብ ላይ 2…….ካይን ካስ ላይ 3……..አላውቀውም	
024	ከተሰሩ በሁዋላ የሚታሸገው /ፕላስተር/ በስንት ቀን የሚወገድ ይመስለዎታል?	1……. ≤ 2 ቀን 2…… > ቀን	
025	ከተሰሩ በሁዋላ ለመዳን ስንት ቀን የሚፈጅ የመስልዎታል	1……..≤14ቀን 2……. > 14ቀን	
026	ከተሰሩ በሁዋላ ወደ ስራ ለመመለስ ስንት ቀን የሚፈጅ የመስልዎታል	1……..≤ 3ቀን 2…… > 3ቀን	
ክፍል IV: **ስለ አለዎት ጊዜ እና ተዘማጅ ክፍያ**			
027	ከቤትው እስከ ቅርቡ ጤና ተቃም ምን ያህል የሚርቅ የመስልዎታል	……ኪ.ሜ	
028	ትራንስፖርት ከቤትው እስከ ቅርቡ ጤና ተቃም አለ	0 = የለም 1 = አወ	መልስዎ የለም ከሆነ ወደ ጥያቄ 030 ይለፉ
029	መልስዎ አዎ ከሆነ……. የትራንስፖርት ክፍያ በብር ስንት ነው	……ብር	
030	ከቤትው እስከ ቅርቡ ጤና ተቃም በእግር	0 = የለም	መልስዎ የለም ከሆነ

	የሚጉዋዙት መንገድ አለ	1 = አወ	ወደ ጥያቄ ቁጥር 032 ይለፉ
031	መልስዎ አዎ ከሆነ…….. በእግር ስንት ሰአት ይዎስዳል	……	
032	ከቤትው እስከ ጤና ተቃም በራስዎት ያለማንም እገዛ መንቀሳቀስ ይችላሉ	0 = የለም 1 = አወ	መልስዎ አወ ከሆነ ወደ ጥያቄ ቁጥር 034 ይለፉ
033	ለ 032 መልስዎ የለም ከሆነ ….ተንከባካቢ /አጋዥ/ አለዎት	0 = የለም 1 = አወ	
ክፍል V: ቀዶ ህክምና ከተሰራሁ ደብላሻል ብሎ መፍራት			
034	የአይን ቀዶ ህክምና የተሰራ ሰው ያውቃሉ	0 = የለም 1 = አወ	መልስዎ የለም ከሆነ ወደ ጥያቄ ቁጥር 038 ይለፉ
035	የአይን ቀዶ ህክምና ተሰርቶ ያዩት ሰው ውጤቱን እንዴት አዩት	0…..ጥሩ ያልሆነ 1……..….ጥሩ የሆነ	መልስዎ 1 ከሆነ ወደ ጥያቄ ቁጥር 038 ይለፉ
036	ለጥያቄ 035 መልስዎ 0 ከሆነ ጥሩ ያልሆነ የአይን ቀዶ ህክምና ውጤት ከማን ነው ያዩት	1…..…ከቤተሰቤ 2……...ከሰፈሬ 3……ከሰፈሬ ውጭ ሩቅ ቦታ	
037	ለጥያቄ 035 መልስዎ 0 ጥሩ ያልሆነ የአይን ቀዶ ህክምና ውጤት ምን ነበር	1… ድጋሚ የዓይን ጸጉር 2…. ከሚገባው በላይ የተሰተካከለ/መበልጠጥ 3….የሚያድግ ሲጋ ያለው 4….ሌላ(ይጠቀስ)…… 5…. አላውቅም	
038	የታወቀ የቀየ በሽታ አለብዎ	0 = የለም 1 = አወ	መልስዎ የለም ከሆነ ወደ ጥያቄ 040 ይለፉ

039	ለ 038 መልስዎ አወ ከሆነ.... የቆየ በሽታው ምን ነበር	1.....የደም ግፊት፣ 2.....የስካር በሽታ፣ 3.....አሰም፣ 4.....ሌላ(ይጠቀስ)	
ክፍል VI ,የቤተሰብ ወይም የሌላ ሰው ተጽኖ			
040	በራስዎት ጤና ጉዳይ ከቤተሰቡ ወሳኙ ማን ነው?	እኔ ብቻ፣.....0 ሚስቴ/ባሌ .....1 እናቴ/አባቴ .....2 ሌላ(ይጠቀስ) 3	
041	ከጤና ሰራተኞች ዉጪ እንዲሰሩ የመከሩዎት ሰዉ አለ?	0 = የለም 1 = አወ	
042	መልስዎ አዎ ከሆነ ከጤና ሰራተኛ ዉጪ እንዲሰሩ ማን መከሩዎት	1.....ከቤተሰቤ፣ 2.....ከጉዋደኞቸ፣. 3.....ከጤና ልማት ሰራዊት 4.....ከመንግስት አካላት(ሊቀመንበር 5.....ሌላ(ይጠቀስ)	ጥያቄ ጨርሰዋልዘ

ይህ የጥያቄዎቻችን መጨረሻ ነው። ጊዜ ወስደው እነዚህን ጥያቄዎች በመመለስ ላደረጉልን ትብብር በጣም እናመሰግናለን።

መረጃዉን የሞላዉ ባለሙያ ስም----------ፊርማ----------ቀን----------

12.4 PROPORTIONAL ALLOCATION OF SAMPLES IN EACH KEBELES

በሚጫ ወረዳ ለአይን ቆብ ቀዶ ህክምና እምቢተኞች ጥናት የተመረጡ ሰዎች ብዛት						
	ቀበሌ	የተለዩ	የተሰሩ	ያልተሰሩ(እምቢተኞች)	Selected refusal	Selected operated
1.	መርዓዊ -01	17	7	10	3	3
2.	መርዓዊ -02	8	4	4	1	2
3.	መርዓዊ -03	52	9	33	11	4
4.	እናምርት	39	15	20	7	6
5.	እናሽንፋለን	46	19	20	7	8
6.	ባችማ	103	13	50	17	5
7.	ቆለላ	30	12	18	6	5
8.	አንድነት	27	24	3	1	10
9.	ጠለታ/ተ/ድብ	76	13	40	13	5
10.	አ/አንባ	18	7	10	4	3
11.	ዕድገት	33	8	25	8	3
12.	ጣሪንጋ	27	9	11	4	4
13.	አጋምና	13	4	9	3	2
14.	ወ/አበይ	41	10	30	10	4
15.	መከኒ	42	8	31	10	3
16.	ጎራጎጥ	123	11	80	26	4
17.	ታ/ለስራ	57	10	37	12	4
18.	ዳጊ ክተማ	66	9	45	15	4
19.	ወለቢ	9	1	7	2	0
20.	ድ/በትግል	76	29	29	10	12
21.	ዳጋሊ	45	8	35	12	3
22.	አ/ልደት/ጅባቻ	48	4	40	13	2
23.	ኩርኩሪት	91	17	55	18	7
24.	ደረመኒ	33	7	23	8	3
25.	ሪም	44	27	18	6	11
26.	ቁ/ባህር	56	31	21	7	12
27.	ም/ገነት	144	27	79	26	11
28.	ብራቃት ዙሪያ	154	37	103	34	15

29.	ዘ/ህይወት	57	16	29	10	7
30.	ታ/ገበሬ	21	10	9	3	4
31.	በ/ገበሬ	45	9	32	11	4
32.	ፈ/ብርሀን	62	14	30	10	6
33.	ወ/በር	50	11	35	12	4
34.	ሰ/በተግባር	33	20	11	4	8
35.	ይ/ለምርት	26	10	16	5	4
36.	አ/መኖር	59	9	45	15	4
37.	ፈ/ህይወት	37	6	28	10	2
38.	ለ/ሰላም	16	10	6	2	4
39.	ባንብል	9	0	8	3	0
40.	ብ/ሱራ	62	2	53	17	1
41.	ዘ/ብርሀን	12	4	6	2	2
42.	ጎ/ሚዳ	4	2	2	1	1
43.	ጥ/ሚዳ	17	1	10	3	1
44.	አኖራይታ	8	2	5	2	1
45.	ተ/ተራራ	17	5	12	4	2
46.	ገ/ምድረ ገነት	12	3	9	3	1
ጠቅላላ ድምር		2275	843	1032	338	338

DECLARATION

I, the under signed, declared that this is my original work has never been presented in this or any other university and that all resources and materials used for the research, have been fully acknowledged.

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