To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India

DISSERTATION SUBMITTED AS PART OF FULFILLMENT FOR THE MS BRANCH III (OPHTHALMOLOGY) EXAMINATION DEGREE EXAMINATION OF THE TAMIL NADU DR.MGR MEDICAL UNIVERSITY, TO BE HELD IN MAY 2022.

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BONAFIDE CERTIFICATE

This is to certify that this dissertation ‘To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India ’ done towards fulfilment of the requirements of the Tamil Nadu Dr MGR Medical University, Chennai, for MS Branch III (Ophthalmology) examination to be conducted in May 2022, is a bona fide work of Dr.J. Ajay Santhosh David, postgraduate student in the Department of Ophthalmology, Christian Medical College, Vellore .

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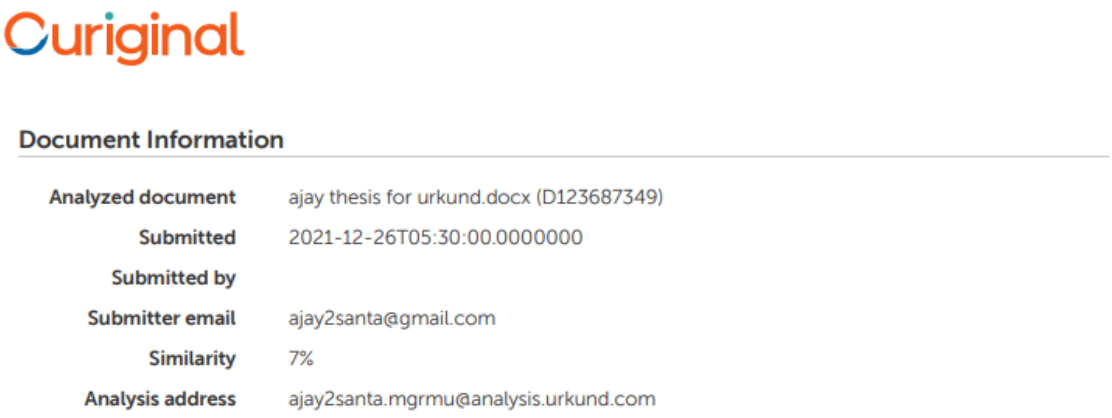

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ABSTRACT

TITLE:

To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India

OBJECTIVE:

To determine the Knowledge, Attitude and Practices of patients with respect to corneal ulcers in our drainage population.

METHODS:

A cross-sectional survey of patients who have never had a corneal ulcer, using a validated questionnaire to quantitatively assess the extent of Knowledge, Attitude and the Practice patterns of eligible patients was performed. A pilot study was done in order to be able to calculate an adequate sample size. Eligible patients from the general population surrounding our institution and were recruited from the waiting areas of:

1. Department of Ophthalmology, Christian Medical College, Schell Campus, Vellore

2. Community Health and Development Unit, CMC, Bagayam (CHAD)

3. Low Cost Effective Care Unit, Schell Campus, Vellore (LCECU)

The proforma contained questions which had scores assigned for each answer, in each of the 3 domains of Knowledge, Attitude and Practice. The scores were then quantitated and then analysed. A sub analysis based on area of residence (Urban / Urban slums / Slums), area from which they were recruited and diabetes, was also done.

RESULTS:

The complete sample size of 300 participants (100 from each of the 3 areas from where recruitment was done). About 1/3 of the participants were diabetic. 53 % of all the participants were from the urban areas of the city of Vellore. 39 % of people were from urban slum area in and around Vellore and 8% of people were from slums. We found that only 8% of the participants knew what a corneal ulcer was, even after a brief explanation in their native languages. Even in those patients who did know what a corneal ulcer was, knowledge regarding aetiology, risk factors and outcomes of corneal ulcers was found to be very limited. Diabetics, a high risk population for infections including corneal ulcers, also demonstrated very inadequate knowledge regarding corneal ulcers.

Regarding the attitude of the subjects, we found that there were a significant number of people who felt that a general practitioner would be able to treat the ulcer and many felt that the local chemist would give good drops for the ulcer.

On assessing the population about the Practices they follow to protect their eyes to reduce the risk of corneal ulcers we found that only about 1/3 of the participants used some forms of protection for their eyes in risky environments. 52 out of the 300 participants had also used native treatment methods like breast milk (48), coconut oil (25%) and even licking the eyes. Most of the participants (86%) however, had gone to an eye specialist for treatment of any eye problems they had, and 50% of these had

gone immediately, and only about 5% of subjects said they waited till symptoms worsened before meeting an eye doctor.

The total Knowledge score was similar in the samples from all the 3 areas. The Attitude score as well as the Practice scores were highest in the patients recruited from CHAD (p= 0.002 and 0.037). The total KAP score also was highest in the patients recruited from CHAD compared to the other groups (11.45). The total score of the CHAD group was also higher than the mean total sample score (10.87).

Subanalysis revealed that the participants from urban areas and better scores than those from suburban or Slum area.

CONCLUSION:

There was a gross lack of knowledge and awareness about corneal ulcers among residents in and around Vellore. The diabetic population also had low level of awareness about corneal ulcers, in spite of being a high risk population for corneal ulcers. The participants from CHAD had the highest insights among the population studied, regarding corneal ulcers, but even their knowledge was inadequate. The people residing in urban areas showed higher KAP scores, but even their knowledge was inadequate.

KEYWORDS:

Corneal ulcer, Knowledge, Attitude, Practices, corneal transplantation, risk of corneal ulcer, traditional practices, diabetics, KAP score.

INTRODUCTION

Corneal ulcers are an ocular emergency, and one of the commonest, most devastating eye diseases in developing countries that can lead to blindness, unless recognised and treated early. (1) However, in our country, many patients seek help late in the disease process due to various reasons including financial and logistic considerations.(2)

This delay in diagnosis and appropriate treatment results in a potentially easily treatable condition, becoming a much more severe condition. (3) At this advanced stage, medical and surgical treatment becomes considerably more expensive, and is often unsuccessful, resulting in severe complications such as corneal perforation, and even loss of the eye. Hence, public awareness that corneal ulcers is an ocular emergency, which requires prompt and appropriate management to prevent severe and permanent visual disability, needs to be promoted through health education strategies.(4)

This study is aimed at investigating the knowledge, attitudes and prevailing practice of corneal ulcer, in the population surrounding our institution using a quantitative KAP study design. Since we are a tertiary centre, patients who already have a corneal ulcer, are very likely to have already visited other health practitioners, and hence their knowledge regarding this condition could have been altered due to this contact. Hence we plan to use a sample of patients from 3 different areas who have not yet had a corneal ulcer, and are presenting to either our department, or two of our sister departments, for other unrelated conditions.

1. Department of Ophthalmology, Christian Medical College, Schell Campus, Vellore

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A sub-analysis based on age, occupation and education level will also be performed.

Multiple health education and public health interventions for blindness due to cataract, diabetic retinopathy, malnutrition, and glaucoma are already taking place as part of our Outreach services from the Department of Ophthalmology. However, before a systematic and directed effort at health education with regard to prevention and treatment of corneal ulcers in our population can be undertaken, we need to know the ground reality situation with regards to the knowledge and attitudes about corneal ulcers, and the practices of the people around our own hospital.

As our literature search did not reveal any Knowledge, Attitude & Practice (KAP) studies on corneal ulcers in our country, we decided to conduct a KAP study with respect to corneal ulcers in the drainage population of our institution.

The information obtained from this study will be used to plan or modify health education strategies towards corneal ulcers as required.

AIMS AND OBJECTIVES

Aim:

To determine the Knowledge, Attitude and Practice patterns in a quantitative manner with respect to corneal ulcers in our population to determine deficiencies and unsafe practices in order to plan health education.

Primary Objective:

To determine the Knowledge, Attitude and Practices of patients with respect to corneal ulcers in our drainage population.

Secondary Objectives:

1. To determine differences in knowledge, attitude and practice patterns based on age group, education level, and occupation in the population.

2. To determine differences in common practice patterns with respect to corneal ulcers in patients based on area of residence: urban areas, urban slums and rural areas

3. To determine the status of Health education with respect to knowledge and attitude towards corneal ulcers in our population of patients from urban areas, urban slums and rural areas

REVIEW OF

LITERATURE

INTRODUCTION:

In 2017, the Vision Loss Expert group performed a systematic review with a meta-analysis of all population-based datasets relevant to worldwide vision impairment and blindness that were published between 1980 and 2015, and reported that an estimated 596 million people were visually impaired globally, with 43 million who are blind.(1) 90% of the burden of blindness is in low /middle-income countries, like India of which 80% is avoidable. (5)

The WHO, in its World report on Vision in October 2019 reported that at least 2.2 billion people around the world have a vision impairment. (6) 1 billion of this was deemed preventable, or yet to be addressed.

In developing countries, corneal disease is the 2nd major cause of preventable blindness next to cataract due to its varied etiology. (7) Corneal ulcers are a major cause of visually significant corneal scarring in these countries.

A corneal ulcer is a vision threatening infection of the cornea that results in a permanent corneal scar that impairs vision. If left untreated, or if it is very aggressive, it can even result in loss of the eyeball. The commonest cause of corneal ulcers is trauma, especially with vegetative matter or mud/soil. Other causes are contact lens wear, dry eyes, lid deformities, corneal sensation impairment, chronic misuse of drops and systemic immunosuppression. (8)

The epidemiological pattern of corneal ulcer varies significantly from country to country but is commoner in developing countries compared to developed countries.

(3,5,6) Data from South India revealed that the incidence of corneal ulcer is more than 10 times higher (11.3 per 10 000) than in a comparable population in the USA. (9,10) Almost half (46.8%) of all corneal ulcers with positive cultures were fungal in origin. Corneal ulcers can also be caused by bacteria, viruses or protozoans.

THE CORNEA

The cornea is the transparent front part of eye which looks like a watch glass; it looks like a dome from anterior aspect. It forms anterior one sixth of the outer coat of the eyeball. (11)

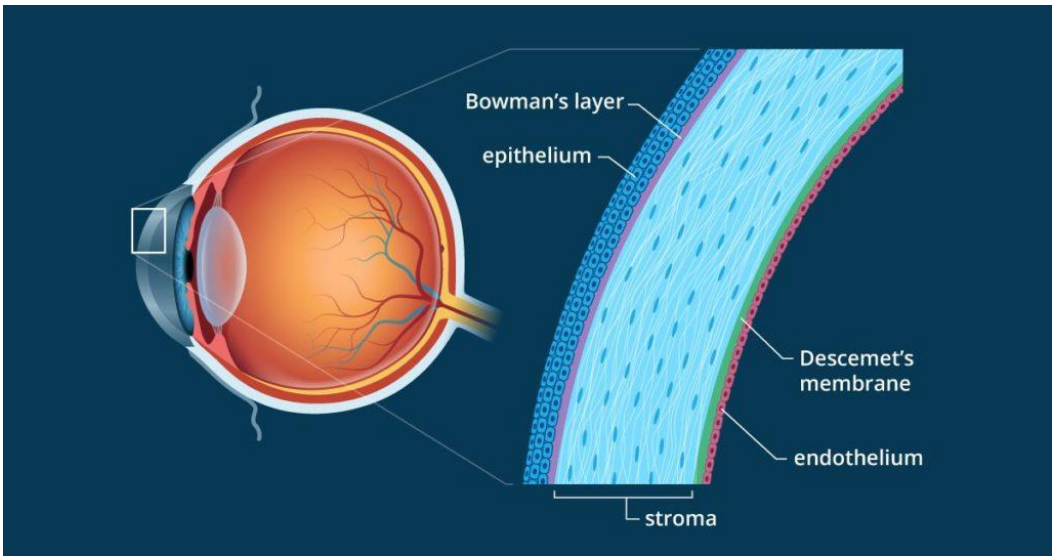

Figure 1: ANATOMY OF CORNEA

ANATOMY OF THE CORNEA

The Cornea consists of 6 layers

1) Outer epithelium,

2) Bowman’s layer

3) Stroma

4) Dua‘s layer

5) Descemet’s membrane

6) Endothelium

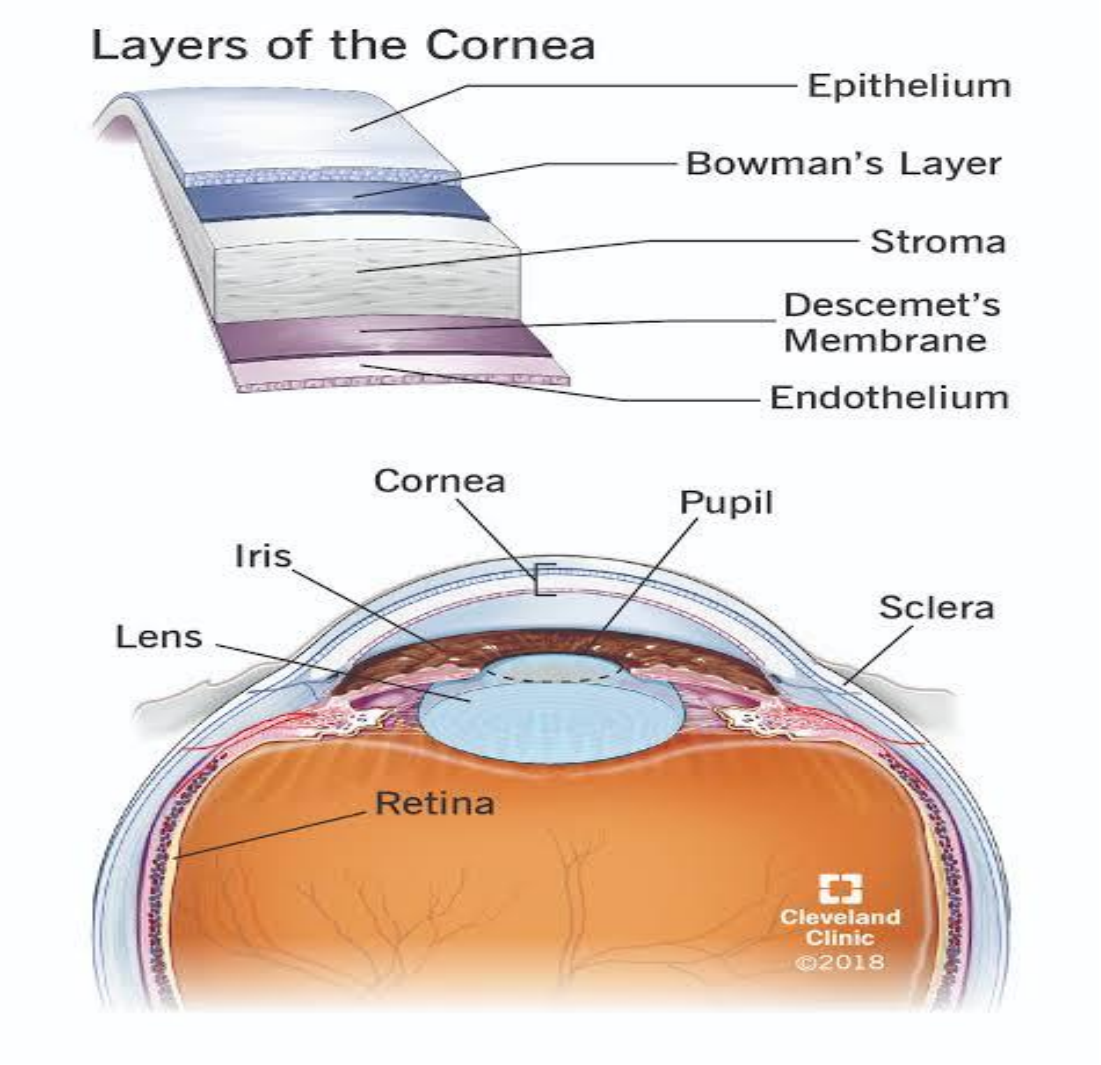

Figure 2: LAYERS OF CORNEA

The corneal epithelium

It acts as a first mechanical barrier to environmental pathogens. It has a very major role in air-tear film interface; the tears on the surface of the cornea play a major role in prevention of infection of the cornea. (11)

The Bowman's layer

It is a pseudo basement membrane about 15 microns thick in a normal individual. The Bowman layer does not regenerate to its natural architecture when injured but heals with scarring.

The stroma

This portion of the cornea constitutes the bulk of the tissue and accounts for 90 % of the thickness of the human cornea. The cellular components (i.e., keratocytes) compose 2-3 % of the stroma. More than 70 % of the dry weight of the cornea is constituted by collagen fibrils. The molecular shape, with its highly organized lattice arrangement, and well as the uniform regular and equally spaced fine collagen fibrils blocks the forward scattering of light and this is what is responsible for the transparency and mechanical strength of the cornea.

Damage to this part of the cornea following corneal ulcers results in disruption of this exquisite arrangement of the corneal collagen fibrils. The collagen fibrils laid down during the healing process is of varying sizes, with no regularity of arrangement, leading to loss of transparency and scar formation.

Dua's layer

This layer, described in 2013 by an Ophthalmologist of Indian origin, is present in the deepest layers of the corneal stroma. (12)

It is a well-defined, acellular layer that is exists in the pre-descemets cornea. measured 10.15 ± 3.6 microns composed of 5 to 8 lamellae of predominantly type-1 collagen bundles arranged in transverse, longitudinal, and oblique directions. The discovery of this layer has helped in enhancing the understanding of corneal biomechanics and anatomy and has played a major role in understanding posterior corneal pathology such acute hydrops, descemetocele and pre- descemets dystrophy. (12)

Descemet's layer

It's a strong homogenous layer, which is separated from stroma by Dua's layer. It represents the basement membrane for the underlying endothelium. It is 3 micrometres thick at birth and later thickens to about 10-12 micrometre.

Endothelium

It consist of single layer of polygonal cells. The cell density of the endothelium at birth is around 6000cells /mm^2, and this declines yearly. In adulthood, it is reduced to 2400-3000 cells/mm^2.

Corneal decompensation happens when the number reduces to less than 500 cells/mm^2. This layer is best evaluated using specular microscopy. (11)

Blood supply of cornea

The cornea is an avascular structure, one of the important reasons for its transparency. However, the periphery of the cornea, the limbus, does receive blood supply through the anterior ciliary vessels in the form of loops invading the periphery of the cornea. These provide nourishment.(11)

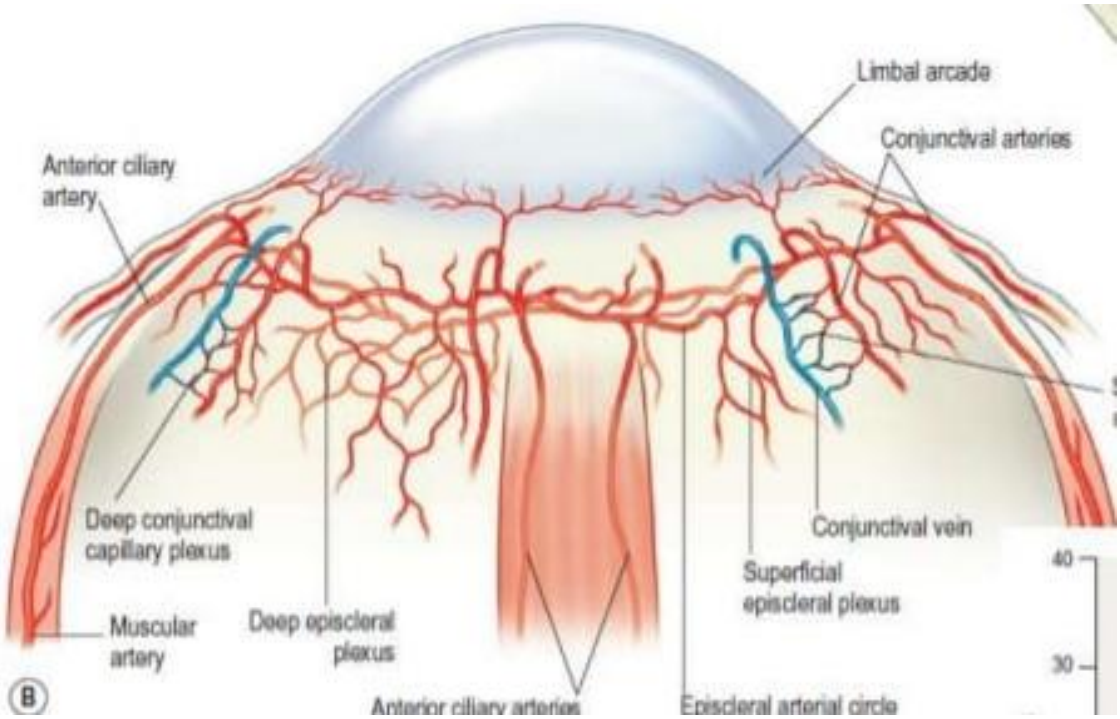

Figure 3: BLOOD SUPPLY OF CORNEA

Nerve supply

The cornea is the most densely innervated organ in the body and is supplied by long ciliary nerves which are branches of the nasociliary nerve from the trigeminal nerve. The corneal sensitivity has been found to decrease with age.

FUNCTIONS OF CORNEA (11,13)

1. Powerful refracting lens
2. Protection of intraocular contents
3. Absorption of drops which are topically used
4. Wound repair after anterior segment surgery or trauma
5. Replacement of tissues and maintaining transparency

TRANSPARENCY OF THE CORNEA (13)

The transparency of the cornea is due to the following factors:

- The relative dehydrated state,
- Its vascularity,
- Its uniform refractive index of the corneal layers
- Its uniform spacing of the collagen fibrils in the stroma,

These all contribute to the transparency of the cornea.

The highly regular arrangement of the collagen fibrils as well as the uniform sizes of collagen fibrils are the most important factors for corneal transparency. (13)

CORNEAL ULCER

A corneal ulcer is defined as a loss of epithelium with destruction of the underlying stroma and infiltration with cells, which may be infective organisms and/or inflammatory cells.(13)

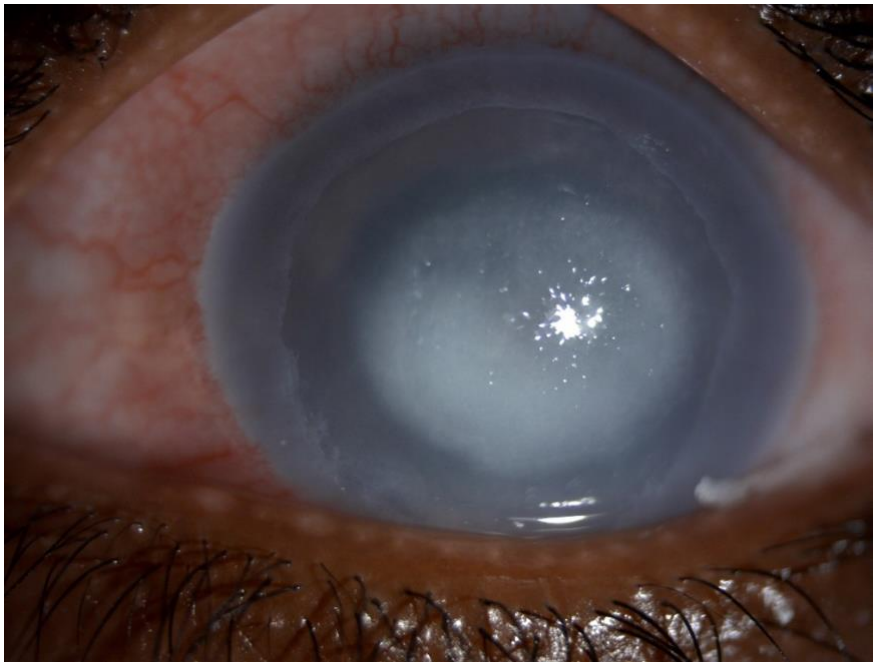

Figure 4: CORNEAL ULCER

A corneal infection can be suppurative or non-suppurative depending on the aetiology of the ulcer.

It can be caused by

1. **Bacteria** e.g.
    - Pseudomonas
    - Staphylococcus aureus
    - Staphylococcus albus
    - Pneumococcus
    - Neisseria gonorrhoea
    - E.coli
2. **Fungi** e.g.
    - Aspergillus species
    - Fusarium species
    - Candida albicans

3. **Viruses** e.g.
    - Herpes simplex
    - Varicella zoster
4. **Parasites** e.g.
    - Acanthamoeba
    - Onchocerciasis

This study specifically relates to suppurative corneal ulcers, especially bacterial and fungal ulcers.

RISK FACTORS

There are several risk factors that contribute to the development of microbial keratitis such as

1. Trauma
2. Contact lens use
3. Foreign bodies
4. History of previous ocular surgery
5. Exposure to contaminated water.
6. Secondary superimposed infections

Other risk factors for corneal ulcers are

- Following ocular chemical injury
- Neurotrophic disease, with lid or lash malposition,
- Dry eye
- Stem cells deficiencies (11)

.

Topical corticosteroids and topical anaesthetics can also hamper the local defence mechanisms.

Fungal ulcers are especially common following trauma with vegetative matter.

Viral ulcers are more and more becoming an important cause of corneal ulcers in developing countries as reported by studies done in China and Egypt. (14)

EPIDEMIOLOGY

According to WHO, there are 43 about million blind people worldwide. Ninety percent of corneal blindness that occurs due to corneal ulceration and ocular trauma, leading to corneal blindness, occurs in developing countries. (5,6)

In India there are approximately 6.8 millions of people estimated to have vision less than 6/60 in at least one eye.(2). The prevalence of blindness due to corneal pathology is reported to be 0.45% i.e. approximately 5.4 million people. Every year it is estimated that 25,000 to 30, 000 corneal blindness cases are added to the blindness and visual impairment in the country. (2)

CLINICAL FEATURES OF CORNEAL ULCERS (15)

Symptoms

1. Pain
2. Redness
3. Photophobia
4. Decreased vision
5. Discharge
6. White spot
7. Eyelid swelling
8. Watering

Signs

1. Conjunctival and circumcorneal congestion
2. Hazy cornea
3. Epithelial defect
4. Corneal infiltration

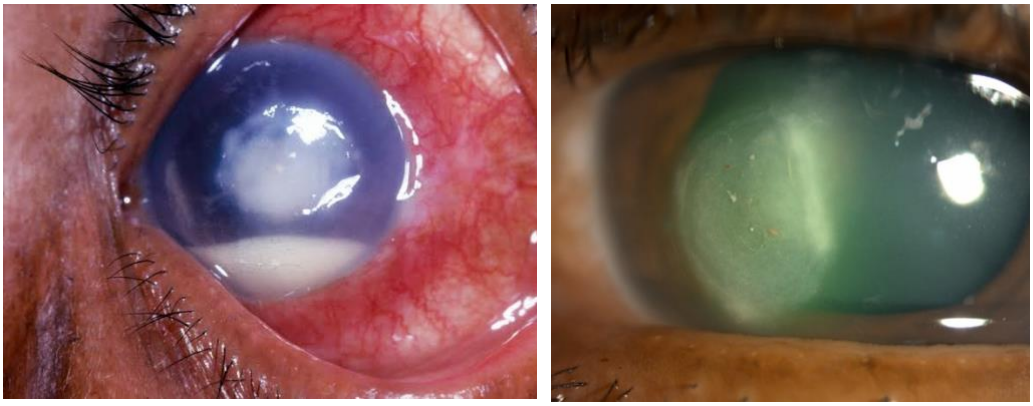

Figure 5: Figures showing Hypopyon and infiltrates

5. Corneal oedema
6. Necrotic slough
7. Vascularisation
8. Hypopyon
9. Corneal thinning and Desmetocele
10. Prolapse of uveal tissue
11. Anterior staphyloma

Clinical assessment of ulcers (15)

1. **Routine slit lamp examination**
    - Size
    - Area of infiltration
    - Depth of involvement
    - Severity
    - Location and extent

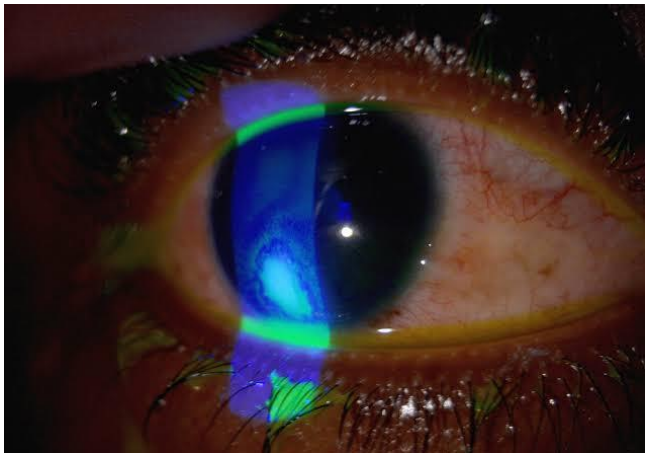

Figure 6: Epithelial defect on staining with fluorescein

Staining with fluorescein

2. **Diagnosis**

The determination of the cause for the corneal ulcer is paramount for its successful management in order to limit the amount of corneal blindness that results from it. Hence it is recommended that all corneal ulcers undergo micro biological evaluation. (16)

Samples are taken for bacterial and Fungal smears, as well as for culture and sensitivity tests.

- Smears are stained with Giemsa stain and gram staining for bacteria, and KOH or Lactophenol Cotton Blue staining for Fungi.
- Material from the edges and depth of the ulcer is also plated on culture media such as blood agar , chocolate agar and SDA agar.

Treatment

BACTERIAL ULCERS

Bacterial ulcers are rapidly progressive and need treatment at the earliest. Clinical examination and diagnosis by an experienced ophthalmologist and microbiological report of scrapings are essential for treatment of any corneal ulcer.

Before microbiological reports are available, empirical treatment with either fluoroquinolones (17), (18), (19) or combination therapy with fortified drops (cefazolin +tobramycin /gentamicin) can be used to start treatment in a suspected bacterial ulcer (20).

As corneal ulcers are one of the few true ocular emergencies, empirical therapy to start with is critical till the culture reports arrives. (16)

The frequency of the topical drops depends on the severity of the ulcer, and can be as frequent as every 5 mins for the first half hour of therapy.

1. Fortified aminoglycosides that are used are

- ✓ gentamicin
- ✓ tobramycin.

These have an excellent Gram-negative coverage, and are effective against *staphylococci* and some *streptococci* but not against *pneumococci.*

2. Cefazolin is the more commonly used cephalosporin. It has good coverage for non- penicillinase producing Gram-positive bacteria.

Some Ophthalmologist now prefer to use higher generation drugs such as Gatifloxacin or Moxifloxacin due to development of antibiotic resistance for other drugs. (21)

FUNGAL ULCERS

The incidence of fungal ulcers in increasing globally. (22) Treatment of fungal ulcers is complicated by the difficulty in diagnosing them, as advanced ulcers may resemble bacterial ulcers. Partially treated ulcers with drugs bought "over-the-counter" presenting to the Ophthalmologist complicates matters even more.

Additionally, fungi require more time for growth in culture media and sensitivity testing is limited. The first choice for treatment of filamentous fungal keratitis is Natamycin 5%. (22)

Response to treatment in fungal infections can be very slow. Drops are used every one to half hourly initially and then tapered according to its response. Therapeutic scraping helps in drug penetration.

It may take about 4 to 8 weeks for the complete resolution of the ulcer. Amphotericin B is the first choice against yeasts. (23)

Unlike treatment for bacterial ulcers which is mainly topical medication, intracameral Amphotericin B (5-10 µg) and oral antifungal agents have shown increased success rates when used in patients with advanced fungal ulcers, patients with deep stromal infiltrates or endothelial plaques.(23, 24). Voriconazole has the broadest spectrum of the azole antifungals and has good intraocular penetration after oral administration.

Figure 7: VORICONAZOLE

Voriconazole is a new, promising therapy for fungal keratitis that is refractory to standard antifungal agents. (25,26)

Signs of improvement:

1. Stabilization and no progression of infiltrate
2. Reduction in activity at margins of infiltrate / active edges getting blunted.
3. Reduction in adjacent stromal oedema and anterior chamber reaction.
4. Resolution of infiltration & progressive healing of epithelial defect.

CORNEAL ULCERS AND THE IMPACT ON PUBLIC HEALTH

Corneal ulcers are infections of the cornea that results in an acute, rapidly progressive corneal destructive process. It is one of the few ocular emergencies. Delay in presentation results in increase in the size of the ulcer, and subsequent poor outcomes such as a large corneal scar or loss of the eyeball. The high costs involved with microbiological procedures of smear and culture/sensitivity determination coupled with the perceived loss of productivity due to the need for hospital admission often results in patients trying their luck with over-the counter drops, or visiting native medicine practitioners for a solution.

Some of the treatment modalities that are recommended by traditional practitioners in our region are instilling breastmilk, coconut oil, Calotropis, or even licking the ulcer. This results in minor corneal infections becoming full-blown bacterial/fungal corneal ulcers. Sometimes, the patient does visit a local doctor (who may or may not be an ophthalmologist), who then prescribes intensive, empirical long-term multidrug treatment for corneal ulcers.(21) These practices then result in the patient presenting to a specialist very late, resulting in even higher treatment costs, with much longer durations of treatment required. Studies have shown that these practices in developing countries give rise to multidrug resistance of organisms associated with relentless worsening of the corneal ulcer, thus increasing the morbidity. (2,3) Thus, corneal ulcers are a major public health concern.

Figure 8: Corneal perforation

Figure 9: Corneal opacity

The problem of microbial keratitis in the developing world needs to be handled at the grassroots level. With simple training, most health care workers would be able to administer prophylactic drops or ointment after corneal abrasions. They could also be trained in how to recognize corneal ulcers early at the first stages of their development. (27)

RATIONALE FOR THIS STUDY

A lot of health education, screening and public health interventions for blindness due to cataract, diabetic retinopathy, malnutrition, and even glaucoma is already happening as part of our country's community ophthalmology efforts via the National Programme for Control of Blindness and Visually Impairment. (28, 29)

However, for any meaningful population strategy towards a systematic and directed effort at health education with regard to prevention and treatment of corneal ulcers can be undertaken, the ground reality with regards to the knowledge regarding corneal ulcers, and the practices of the people needs to be assessed.

However, our literature search did not reveal any Knowledge, Attitude& Practice studies on Corneal ulcers in our country . We did find a qualitative KAP study among residents in a County of Shandong Province, in China. (30) The investigators found that only 37.4% of participants had even heard of corneal ulcers. Of these respondents, 72.5% knew that corneal trauma might cause corneal ulceration, 37.6% (343/912) knew corneal ulceration might cause blindness and 52.2% (476/912) had received health education on corneal ulceration. With respect to Attitudes toward corneal ulceration, 55.1% of all participants thought they would not immediately seek help if corneal trauma occurred. In addition, 90.6% of participants would like to receive health education on corneal ulceration. It was found that age, occupation, education

level and contact lens wear were significantly associated with knowledge of corneal ulceration.

We decided to perform this study among residents of our drainage population, who have not had a corneal ulcer, in order to understand the prevailing Knowledge, Attitudes and Practices in the people of our area, so that we can then direct our health education to areas of deficiencies.

DESCRIPTION OF A "KAP" STUDY

KAP stands for Knowledge, Attitude and Practice**.**

A KAP study is conducted to investigate the human behaviour related to a certain topic.(31)

Knowledge refers to their knowing something with familiarity gained through experience or association of any given topic (corneal ulcer in this case).

Attitude refers to their feelings or way of thinking, or to any preconceived ideas that they may have towards corneal ulcer.

Practice refers to the ways in which they express their knowledge and attitude through their actions practically.

A KAP study helps us to identify what people know (Knowledge), how they feel (Attitude) and what they do (Practice). There may be considerable and significant gaps between what is said and what is practiced. The KAP study is a quantitative methodology with predefined questions which are formatted into a standardized questionnaire that provides quantitative as well as qualitative information.

KAP surveys can expose misunderstandings or misconceptions that could represent real obstacles and potential barriers to health education targeted at behaviour change. The KAP survey essentially records an "opinion". It can be used to increase insights in a current situation and helps the community health professionals to design and implement appropriate interventions. A KAP study can also be used to evaluate the effectiveness of certain interventions or programmes.(32)

Uses of a KAP Survey:

- Measurement of the extent of a known situation – i.e. it can help confirm or disprove a working hypothesis and provide new insights of a situation's reality.
- Enhancement of the knowledge, attitude, and practices of specific health-related subjects; acertain what is known and what is done about various health-related issues.
- Establishment of a baseline for use in future assessments of the effectiveness of health education activities aimed at changing health-related behaviour.
- A KAP survey report can help suggest an intervention strategy that more effectively adresses specific local circumstantial and cultural factors. Activities that are suited to the respective population involved can be more effectively planned. (33)

To begin a KAP study the following components are involved:

1. Define the survey objectives.
    - All information regarding the purpose of the survey
    - Areas of enquiry

2. Identification of the survey population and the sampling plan.
3. The survey protocol should be prepared. It defines
    - The elements to be included in the survey protocol
    - Identify key research questions
    - Creating a working plan and budget.
4. A questionnaire is made for the accomplishment of the data analysis plan. The questionnaire needs to be validated with other experts in the topic of the study.
5. The questionnaire is administered in the field after choosing survey dates, recruiting and training interviewers.
6. Data collected is finally analysed.
7. These results are then used to translate the survey findings into action and disseminate the survey findings by creating awareness amongst the people.

Cycle of a KAP survey project.

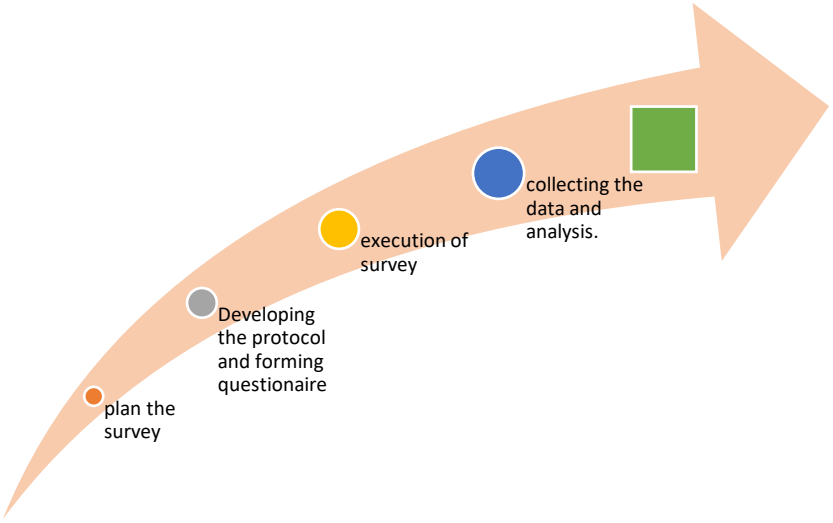

Figure 10: CYCLE OF KAP SURVEY PROJECT

KAP study can be of either a Baseline study or a RE KAP or evaluative KAP study**.**

1. The baseline KAP study is conducted in a region where no awareness programs or preventive campaigns have been conducted before **.** It provides us a solid basis for planning future campaigns and health program. It serves as a benchmark.

2. The RE KAP or Evaluative KAP is the other way around; it can be used as an important tool to evaluate the impact and efficiency of the several programs and

campaigns which have been already carried out at community levels to create awareness among the people**.**

The more number times a KAP survey is done, the more will be its effectiveness. It provides an up-to-date database about the knowledge, attitudes and practices, as well as qualitative information of the problems faced by the people at the grassroot level.

The advantages of the KAP study

A. The real strength of the structured questionnaire
B. Ability to collect distinct answers leading to an ideal qualitative and quantitative analysis.
C. Relatively small size of sample is needed for obtaining a generalized results on the population.
D. Simple survey design.
E. Gives the possibility for cross cultural comparison.

Limitations of the KAP study :

A. The reliability and validity of the data .
B. The difficulty in expressing the measurement of the intensity of the difference of opinions or attitudes reported**.**
C. The pre-coded choices of answers in questionnaire may not be sufficiently comprehensive, so not all answers would be easily accommodated.

D. Some participants may be forced to choose an inappropriate pre-coded choices of answers that might not be fully represent their views (27).

E. The KAP study can sometimes be expensive and time consuming**.**

F. There is always a potential risk for an interviewer bias, framing and recall bias, in which participant replies are being influenced by the pattern of the questionnaire**.**

G. Some questions are about socially desirable attitudes, states and behavioural may lead to potential social desirability bias.

MATERIALS AND METHODS

Design:

A cross-sectional survey of patients using a validated questionnaire to quantitatively assess the extent of Knowledge, Attitude and the Practice patterns of eligible patients from the general population surrounding our institution.

Setting:

The waiting areas of:

1. Department of Ophthalmology, Christian Medical College, Schell Campus, Vellore

2. Community Health and Development Unit, CMC, Bagayam (CHAD)

3. Low Cost Effective Care Unit, Schell Campus, Vellore (LCECU)

Outcome: We analysed and understood the prevailing knowledge, attitude and the practice patterns of patients with corneal ulcers attending our hospital, as well as residents of areas surrounding our institution with this study. A sub analysis based on age group (younger/older), education status and occupation is done.
Using this information, health education will be developed to address all deficiencies and misconceptions in these areas.

INCLUSION CRITERIA:

1. Age group >18 yrs attending the Dept. of Ophthalmology OPD, LCECU OPD, and CHAD OPD

2. Residents of Vellore district

EXCLUSION CRITERIA:

1. Previous history of corneal ulcers

2. Previous history of any blinding condition

Variables:

A Quantitative Questionnaire with questions on Knowledge, Attitude and Practice of corneal ulcers. All answers were given marks, which will be quantitated and then analysed.

The Questionnaire:

Validation:

As there is no validated questionnaire available as determined from our literature search, we constructed a questionnaire with these objectives in mind, which was then validated by 5 experts in the field (2 Ophthalmologists, 1 public health worker, 1 ophthalmic nurse and 1 optometrist)

Intra observer variation:

This was assessed by administering the questionnaire to 15 Class 4 workers in our institution by the same observer at a 10-day interval. The questionnaire was found to be very robust with an intra-observer correlation coefficient of 0.95 (95% CI 0.76,0.99)

In addition:

- There are 2 questions at the end of the questionnaire which will not be quantified. These are

1) Whether the participant feels that Health education on corneal education from our institution is lacking, and

2) Whether the participant has been involved with the care of anyone with a corneal ulcer.

This will give us a better perspective with respect to status of our health educations, and on the response to the questions in the questionnaire.

- All patients who do not know what a corneal ulcer is, or are found to have harmful practices will be given a brief health education regarding it after the administration of the questionnaire has been completed.

Data Sources/measurement:

1. Data from questionnaires all patients will be entered in the Epidata program for analysis.

2. Sub-analysis based on a. Age group: Younger (18 -39yrs); Older (40 -60yrs)

b. Education status: No schooling/schooling below 8th std/8th – 12th std/above 12th std

c. Occupation: No work / Housewife/ agricultural labourer/ non agricultural coolie work /skilled worker/ office worker

d. Address: Rural/urban slum/urban

Bias:

We used systematic random sampling to choose the patients from OPDs in order to avoid selection bias.

The validated questionnaire was administered, and answers recorded. Each answer was awarded marks as predetermined in the proforma. If there was any ambiguity in the answers to “others”, the mark was decided by an independent Ophthalmologist from the department.

Questions were asked privately, so that other patients in the same waiting area did not get biased on hearing the responses, or the health education being given.

The Proforma

The proforma was constructed in such a way as to determine the Knowledge, Attitude and Practices with respect to corneal ulcers in a quantitative manner i.e. All answers were given marks, which will be quantitated for each individual section, as well as a total for each participant. The result will then be analysed.

The proforma was validated by presenting it to 5 experts in the field (2 Ophthalmologists, 1 public health worker, 1 ophthalmic nurse and 1 optometrist)

This validated proforma was then used on 50 non-medical staff of the hospital, who volunteered, as a pilot study in order to calculate the sample size needed for this study. The sample size was 300 people.

Multiple answers were allowed for most of the questions.

The final proforma (Annexure 6) consisted of the Demographic details, and then 3 sections:

1. Knowledge: 15 Questions

   After informed consent, the participants were questioned in their native language, using layman's terms, regarding what a corneal ulcer is, and its symptoms, signs and treatment options. If the participant knew what a corneal ulcer was, the rest of the questions in this section were asked. If they did not know what a corneal ulcer was, they were not asked the questions pertaining to symptoms, signs and treatment of corneal ulcers. These questions in the proforma were skipped and the questions relating to Attitude and Practices were asked.

2. Attitude: 8 Questions

   These were questions relating to what they felt regarding treatment, contact and spread of corneal ulcers

3. Practice: 10 Questions

   These were questions pertaining to what they would do, where they would go for treatment, what treatment they would take in the event that they did get a corneal ulcer.

   The final question was regarding whether they felt that the Health Education given by our institution was adequate with respect to prevention and care of corneal ulcers.

At the end of the question session, the people who did not know about corneal ulcers were educated about it.

STATISTICAL ANALYSIS

Reliability analysis was done on the KAP score using intra-class correlation coefficient and its 95% CI in a separate set of participants (Fifteen Class 4 workers in our institution by the same observer at a 10-day interval) before starting the study.

Sample size calculation:

As no data on Quantitative KAP studies on corneal ulcers was available in the literature, we conducted a pilot study of 50 people, and used this to calculate the sample size.

The following formula was used to estimate population mean with a given precision:

$$n = \frac{Z^2_{(1-\alpha/2)}\sigma^2}{d^2}$$

where n is the required sample size; The value Z (1-) is taken from standard normal distribution for a 95% CI; is the expected standard deviation; and d is the precision.

The sample size calculation was estimated based on normality assumption on the KAP score using data from our pilot study on 50 participants.

Three hundred (300) participants were required to estimate with 95% CI that the sample mean score of KAP will not differ from the population mean by more than 0.8 with a standard deviation of 7.

The characteristics of the study participants was described using relative frequencies for categorical variables and means or medians with measures of spread (Standard deviation or interquartile range) for continuous variables.

The KAP score was analysed according to age groups, education and occupation groups and area of residence using student t-test or one-way analysis of variance.

Chi-square test was used to test the association between the socio demographic variables and the categorical outcomes using the KAP score.

All statistical analysis was done using statistical software Stata IC version 16.

RESULTS

RESULTS:

The study was conducted by recruiting participants from the OPD waiting areas of the following:

1. Department of Ophthalmology, Christian Medical College, Schell Campus, Vellore

2. Community Health and Development Unit, CMC, Bagayam (CHAD)

3. Low Cost Effective Care Unit, Schell Campus, Vellore (LCECU)

As per our sample size calculation derived from the pilot study of 50 patients that we did, 100 participants were recruited from each area and a total of **300 participants** were recruited.

The results of the questionnaire were uploaded on Epidata and analyzed using statistical software Stata IC version 16.

The following results were obtained from this study.

DEMOGRAPHY:

1. **AGE:**

The overall age distribution in the population studies were as follows:

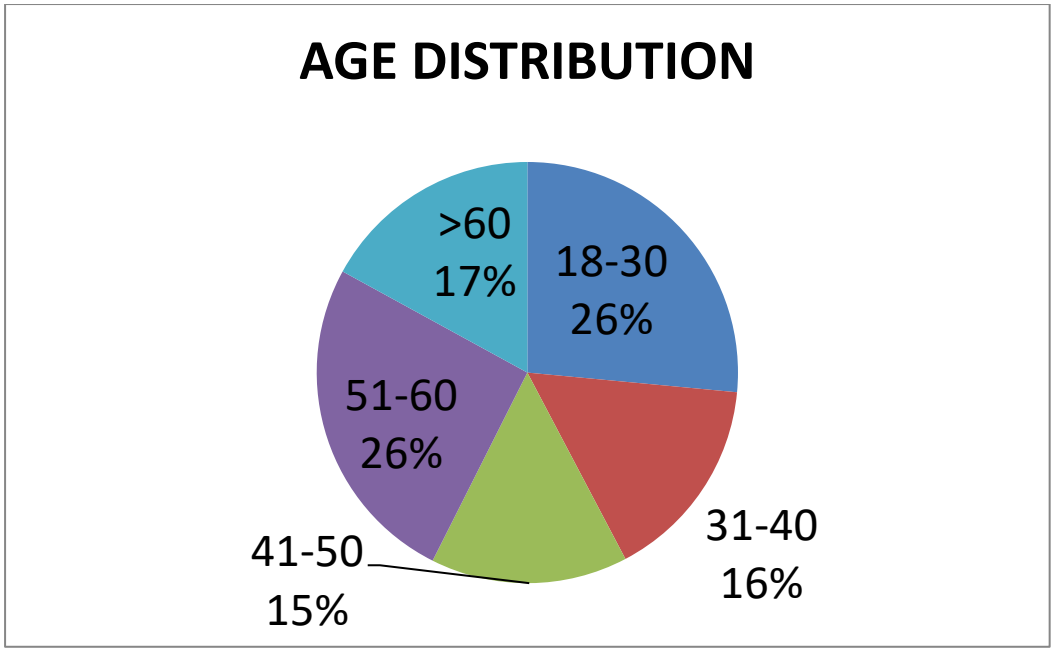

Figure 11: AGE DISTRIBUTION IN SAMPLE SIZE

All participants were above 18 years of age. 26% of participants each were from age group of 18-30 years, and 51 – 60 yrs. 16% were from 31-40 years, 15% were from 41-50 years. 18% were above 60 years of age.

The distribution of age groups among the three areas of data collection is given in the following table.

Table 1: DISTRIBUTION OF AGE GROUPS AMONG THE SUBGROUPS

AGE IN YEARS	CHAD	LCECU	SCHELL	TOTAL
18-30	42	12	31	85
31-40	18	19	13	50
41-50	10	21	17	48

51-60	19	29	15	63
>60	11	19	24	54

2. GENDER:

Among the participants 42% were males and 58% were females.

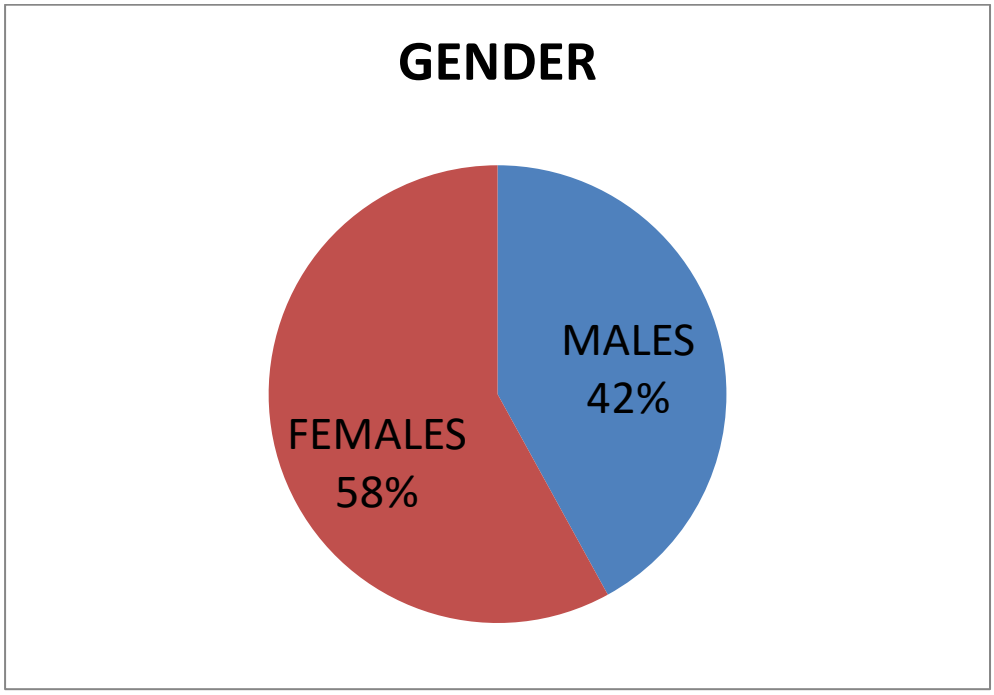

Figure 12: GENDER DISTRIBUTION OF THE STUDY POPULATION

The number of males and females in each subgroup studied is given in the table below.

Table 2: GENDER DISTRIBUTION AMONG SUBGROUPS

GENDER	CHAD	LCECU	SCHELL	TOTAL
MALE	41	30	55	126
FEMALE	59	70	45	174

3. RESIDENCE:

In the total population recruited, the majority (almost 53%) of people were from urban areas, 39% were from urban-slum areas and 8% from slum areas.

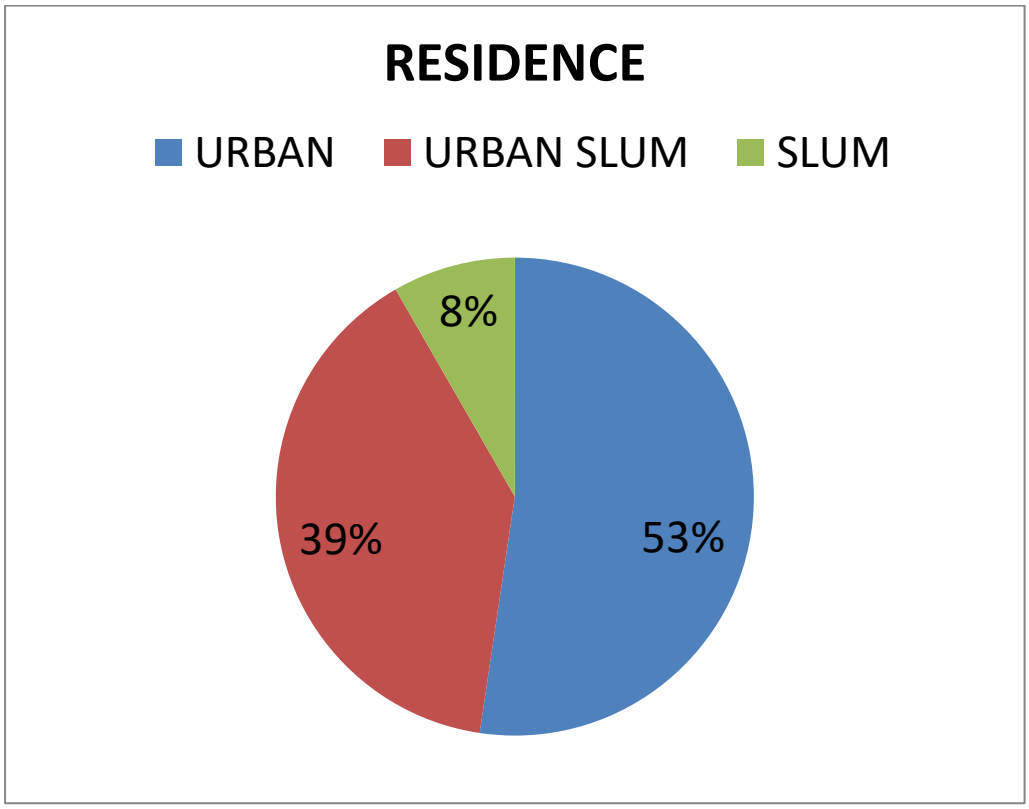

Figure 13: RESIDENCE DISTRIBUTION IN SAMPLE SIZE

The distribution of areas of Residence for each subgroup is given in Table 3 below.

Table 3: RESIDENCE DISTRIBUTION AMONG SUBGROUPS.

RESIDENCE	CHAD	LCECU	SCHELL	TOTAL
URBAN	53	50	54	157
URBAN-SLUM	42	45	31	118
SLUM	5	5	15	25

4. **PREVALENCE OF DIABETES**:

31.33% of people recruited for the study were diagnosed diabetes and 68.67% of people did not have any history of diabetes.

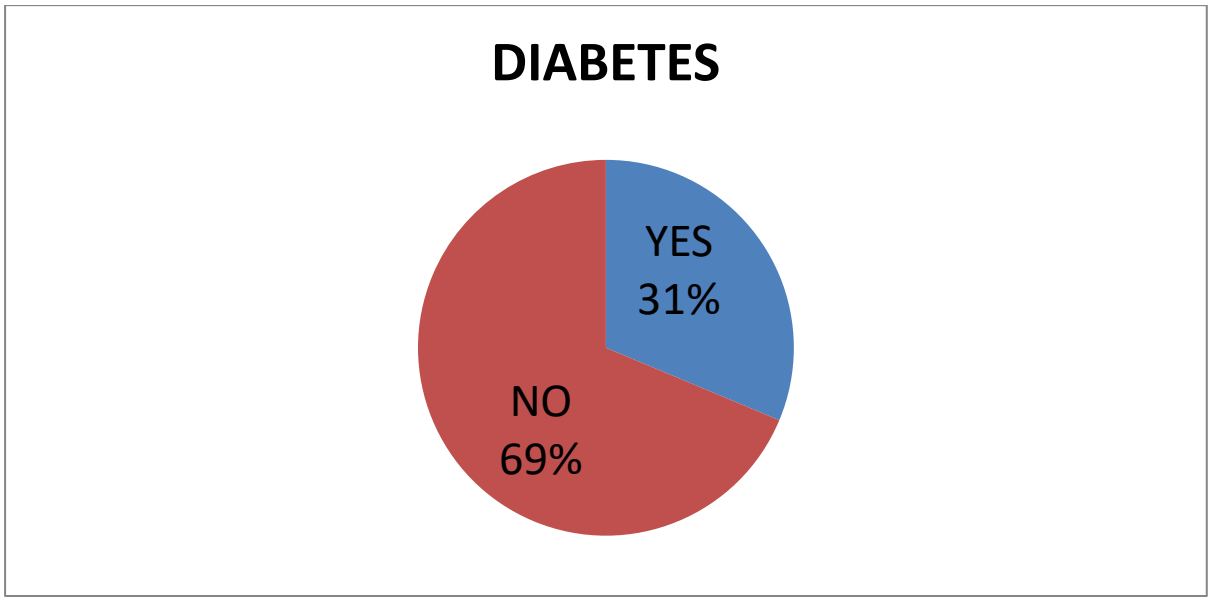

Figure 14: PREVALENCE OF DIABETES IN SAMPLE SIZE

The distribution of diabetics and non-diabetics for each subgroup is given in Table 4 below.

Table 4: PREVALENCE OF DIABETES AMONG SUBGROUPS

DIABETES	CHAD	LCECU	SCHELL	TOTAL
YES	28	31	35	94
NO	72	69	65	206

The Bar chart given below in Fig 5 pictorially represents this data.

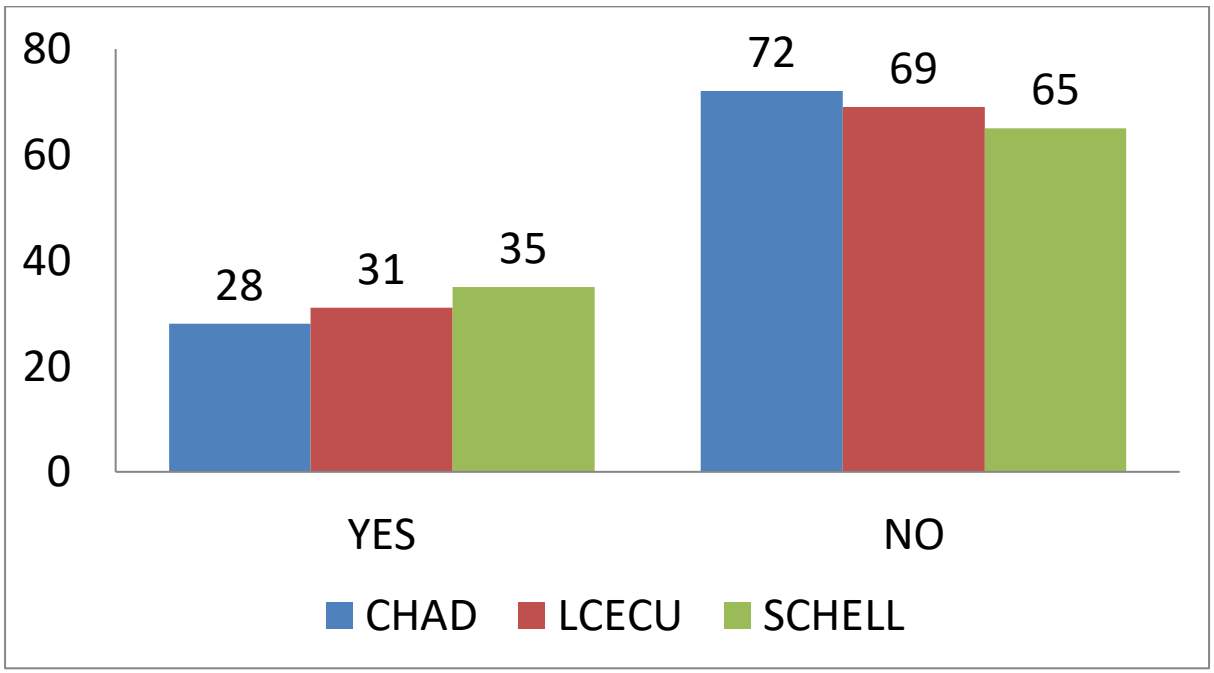

Figure 15: PREVALENCE OF DIABETES

5. KNOWLEDGE AMONG PARTICIPANTS

There were 15 questions in this section and multiple answers were allowed for most of the questions.

i. <u>Knowledge regarding diseases that can cause redness in eye with associated decreased vision:</u>

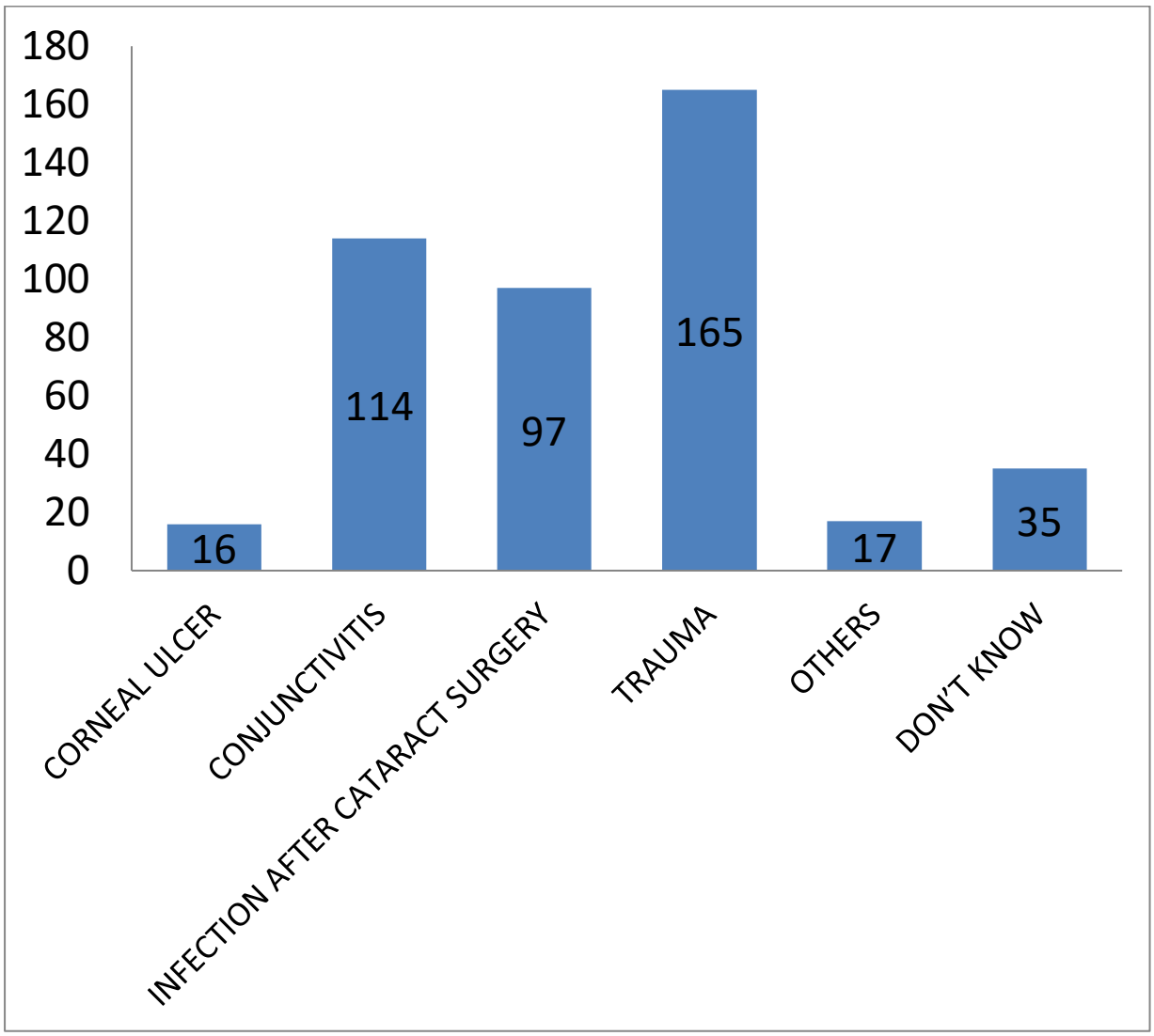

Figure 16: Knowledge about diseases that can cause redness in eye and decreased vision

55% (165 out of 300) of people knew that trauma can cause redness in eye and decreased vision. Only 5% reported that they knew that corneal ulcer can cause redness in eye and decreased vision. 38% (114 out of 300) felt that conjunctivitis causes red eyes with decrease in vision, and 33.3% of respondents said that infection after cataract surgery could cause this.

ii. Knowledge about corneal ulcer:

Only 24 out of 300 (3.7%) participants said that they knew or had heard about corneal ulcer. This was true even after a brief explanation of what a corneal ulcer is.

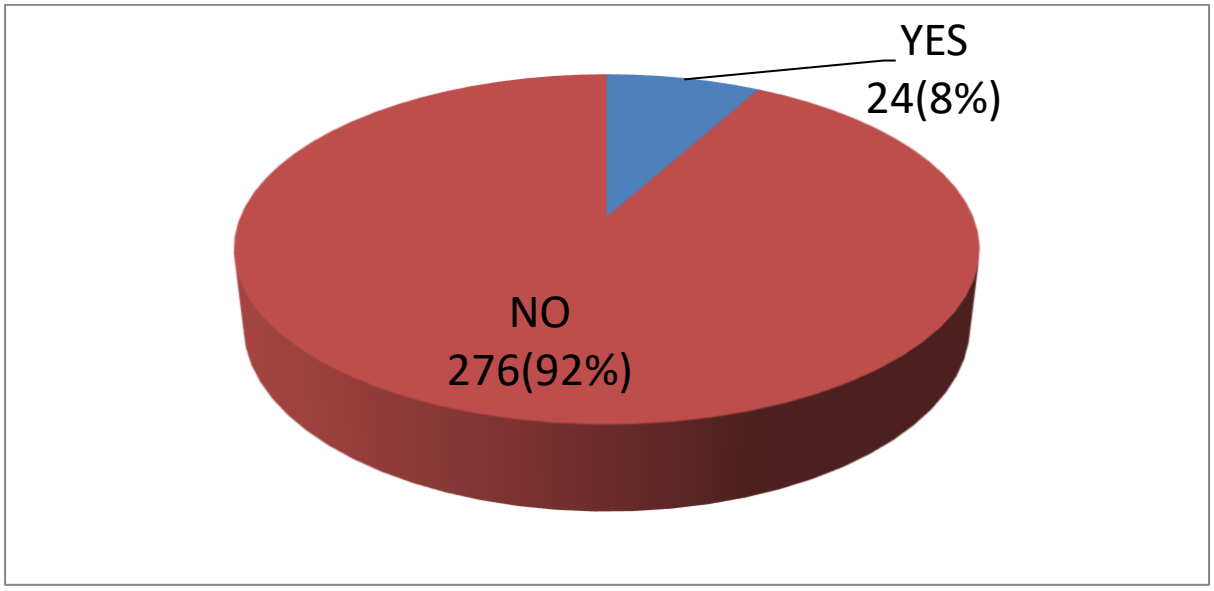

Figure 17: Knowledge about corneal ulcer

The following results are from the responses of those 24 people who knew what a corneal ulcer was. The remaining people were not asked the questions pertaining to symptoms, signs and treatment of corneal ulcers. These questions in the proforma were skipped and the questions relating to Attitude and Practices were asked.

At the end of their question session, each of the 276 people who did not know about corneal ulcers were educated about it.

iii. Knowledge about symptoms of corneal ulcer:

Out of the 24 people who knew about corneal ulcers, the following was their knowledge regarding the symptoms of corneal ulcer.

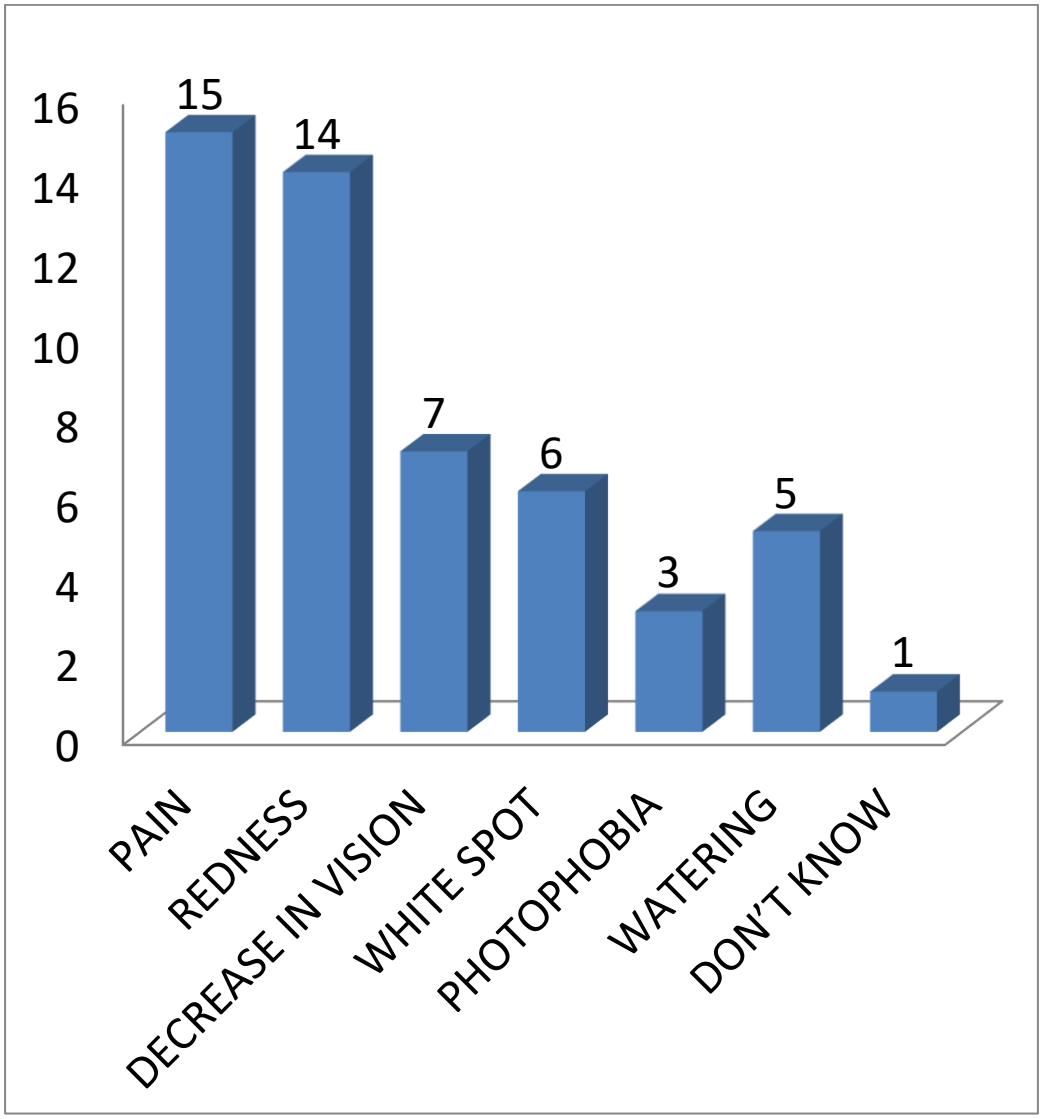

Figure 18: Knowledge about symptoms of corneal ulcer

In those participants who knew about corneal ulcer, only about two thirds of them i.e. 15 out of 24 (62.5%) said there would be pain and 14 out of 24 (58.3%), said there

would be redness. Less than 30% of these 24 respondents knew there would be decrease in vision (29%), a white spot (25%) and watering (20.8%).

iv. Knowledge regarding etiology of corneal ulcer

Out of the 24 people who knew about corneal ulcers, the following was their knowledge about etiology of corneal ulcer.

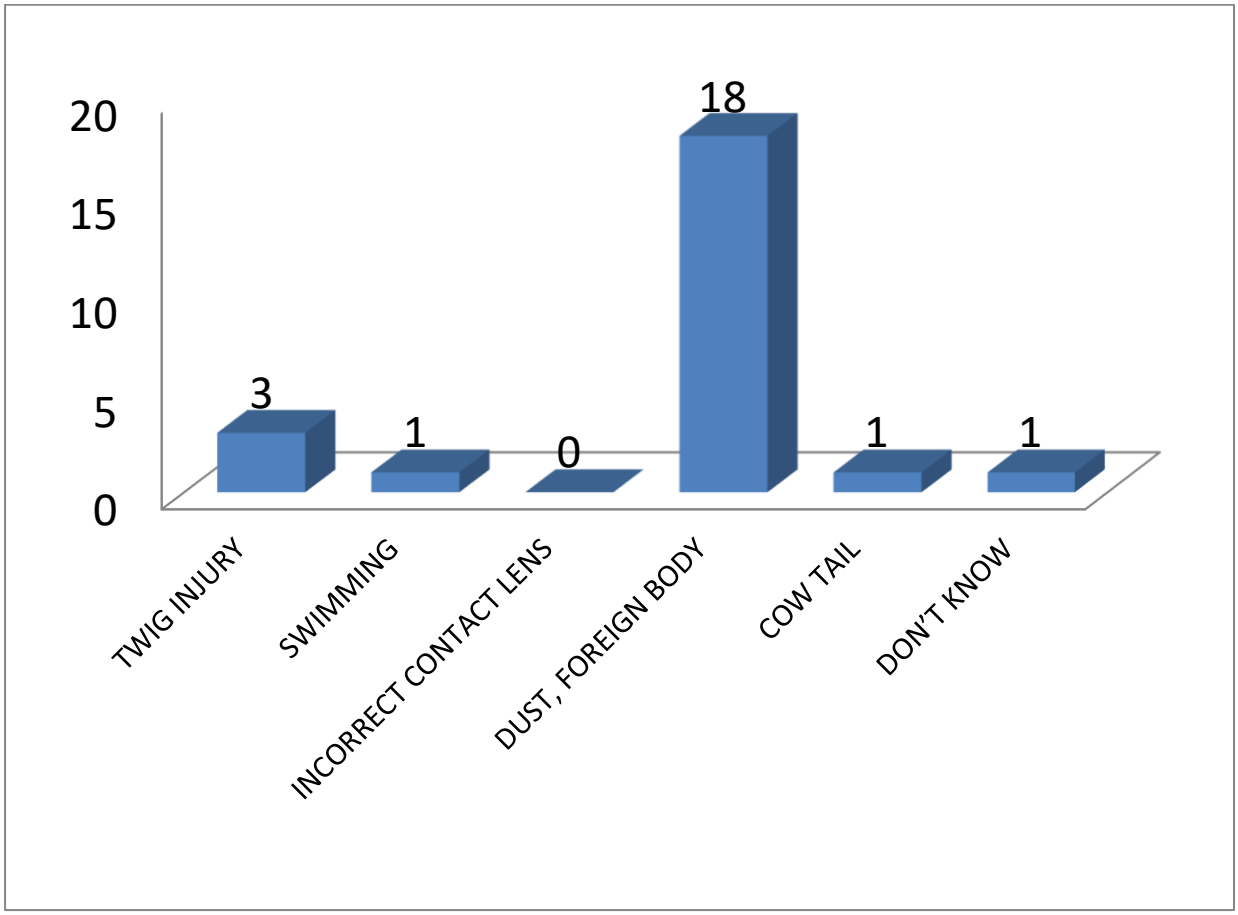

Figure 19: Knowledge about corneal ulcer etiology

The majority of patients (18 out of 24; 75%), knew that dust or foreign bodies can cause corneal ulcers. However, knowledge about other causes was relatively poor. No one said that that incorrect contact lens use could cause ulcers, probably because this was not a population where contact lens use would be expected to be prevalent.

v. Knowledge about population at risk for corneal ulcer

The following table shows the knowledge about population at risk for corneal ulcer in the 24 people who knew about corneal ulcers.

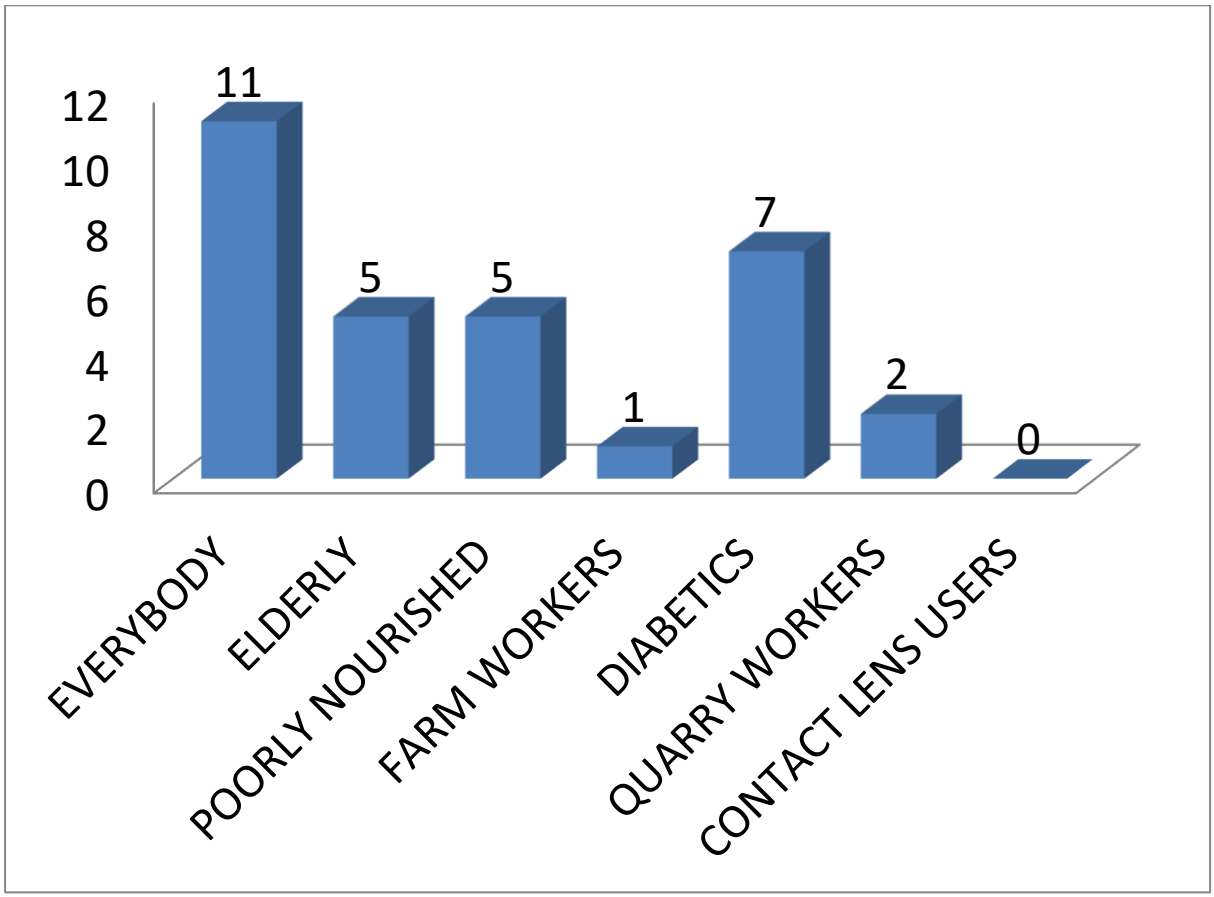

Figure 20: Knowledge about population at risk for corneal ulcer

Eleven out of 24 people (34.4%) said that all people were equally at risk for corneal ulcers. 20 -30% of people did say that elderly, poorly nourished and diabetics were more at risk for corneal ulcers. Again, no one said that contact lenses posed a risk for corneal ulcers.

vi. Knowledge regarding spread of corneal ulcers through direct contact

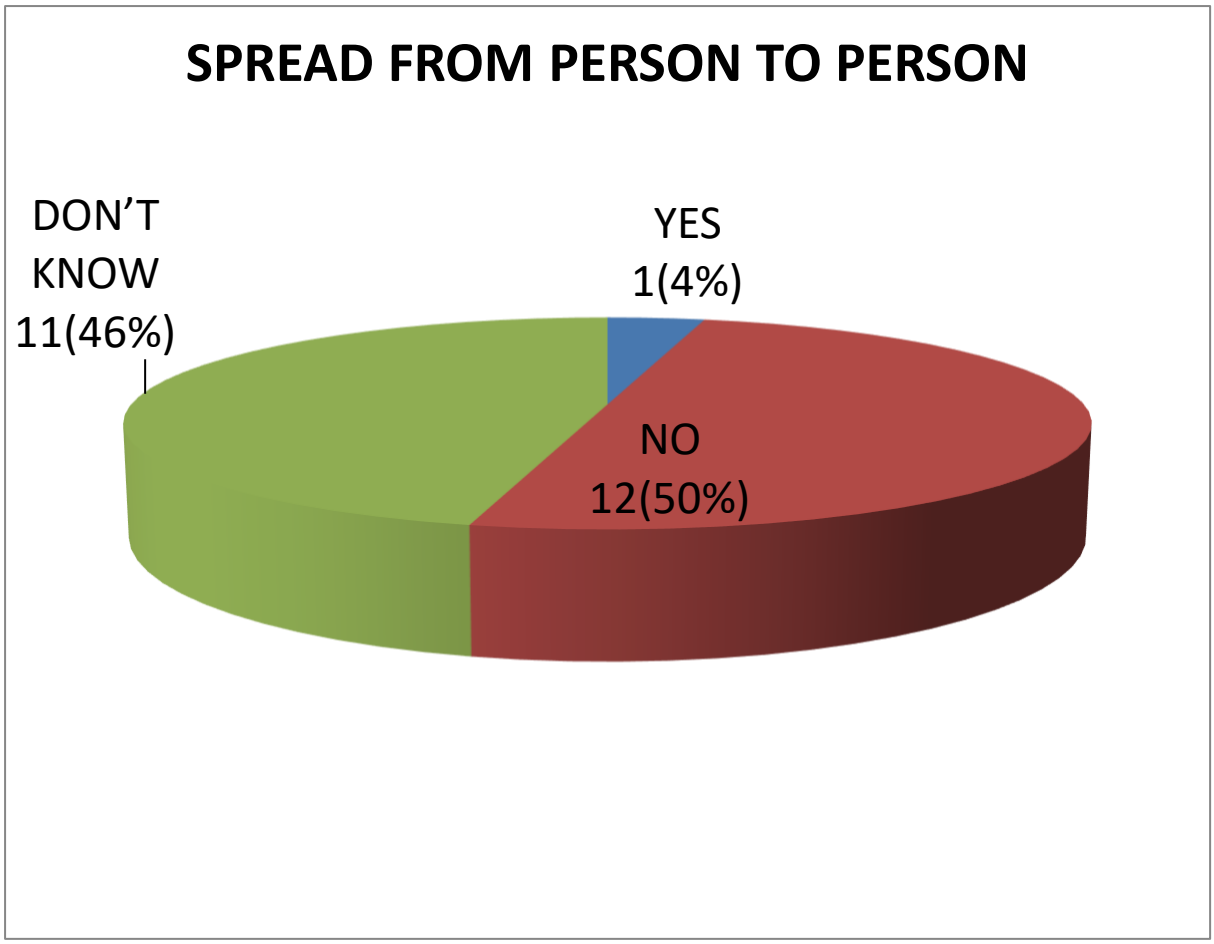

Figure 21: Knowledge regarding spread of corneal ulcer by direct transmission

50% (12/24) of people who had said they knew about corneal ulcers said that the ulcers do not spread by direct contact from one person to another. The rest of the respondents except one person (who said direct spread was possible), did not know if it could spread or not.

vii. Knowledge about the damage that can result from corneal ulcer

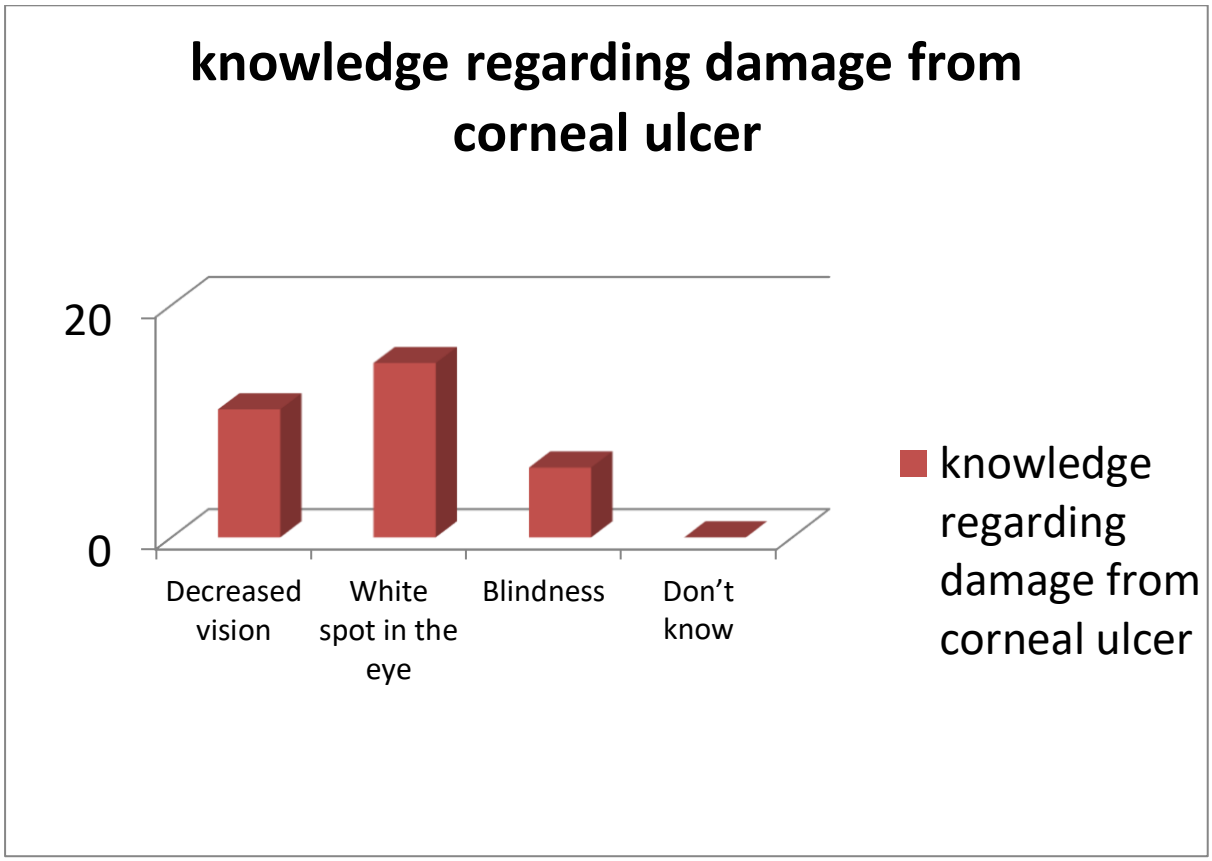

Figure 22: Knowledge regarding complications of corneal ulcer among the 24 people who knew about corneal ulcer

15 out of the 24 people (62.5%) knew that a corneal ulcer will result in a white opacity. 11 out of the 24 (45.8%) knew that it would result in decreased vision, while 6 people said it would result in total blindness.

viii. Knowledge regarding whether a corneal ulcer would heal without taking treatment

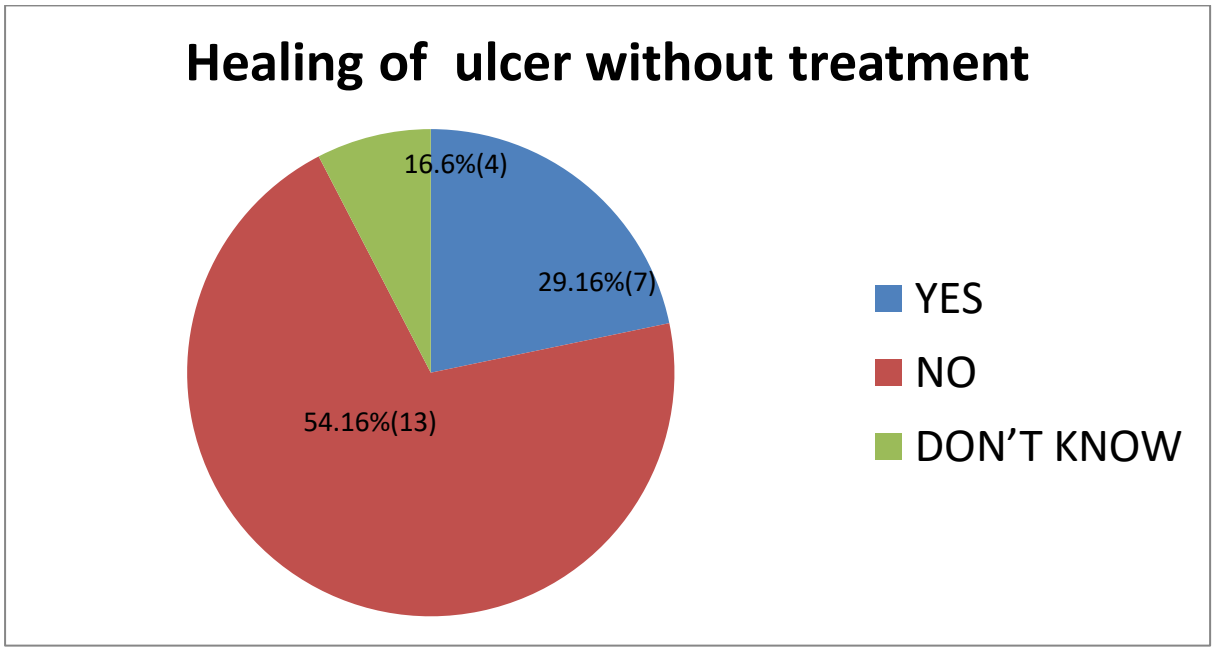

Figure 23: Knowledge of 24 people regarding treatment of corneal ulcer

Almost 30% of the respondents (7 people) felt that no treatment was needed and a corneal ulcer could heal on its own. However, 13 people (54.16%) did know that treatment was needed for an ulcer to heal.

ix. Knowledge regarding how soon initiation of treatment was needed:

Among people who answered that corneal ulcer should be treated, 7 people said that they would seek treatment immediately. The rest (6 people) said that they would seek treatment after 2-3 days only if their home remedies do not alleviate their symptoms.

x. Knowledge about who can treat corneal ulcer

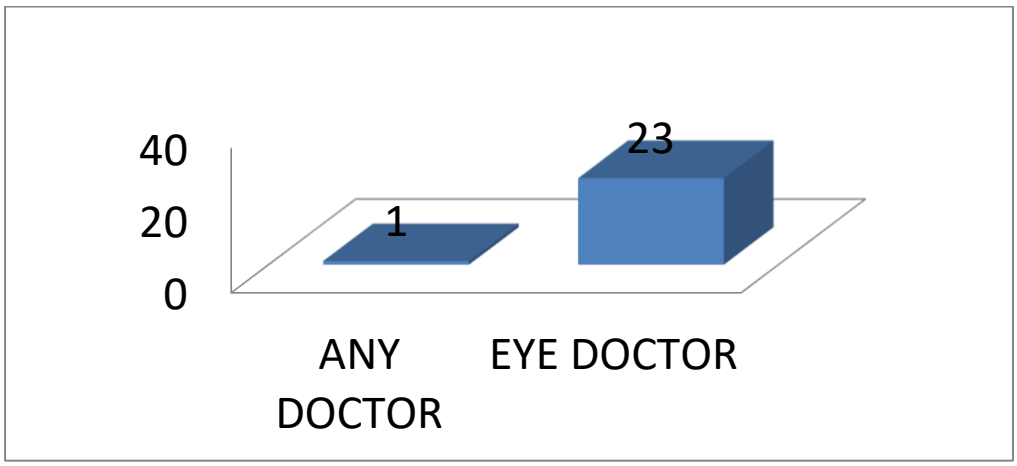

Figure 24: Knowledge about who can treat corneal ulcer

Most people who said they knew what a corneal ulcer was, said that it should be treated by an Eye specialist, rather than a general physician.

xi. Knowledge about treatment of corneal ulcer

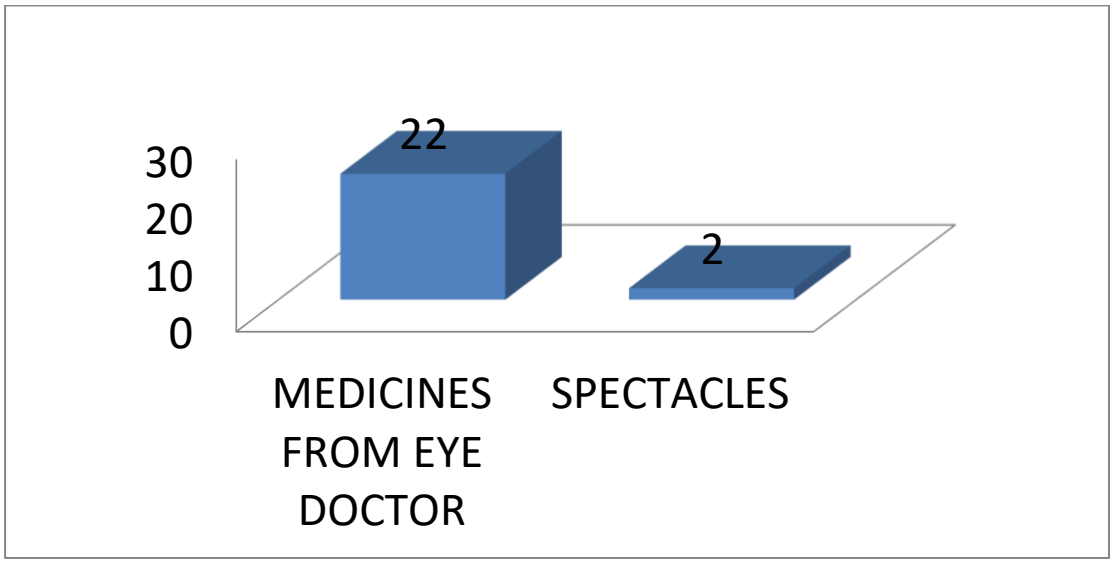

Figure 25: Knowledge about treatment of corneal ulcer

For this question again, most respondents said that medicines from an Eye specialist was the best treatment for a corneal ulcer. 2 people felt that spectacles were enough to treat the ulcer.

xii. Knowledge about duration of corneal ulcer to heal

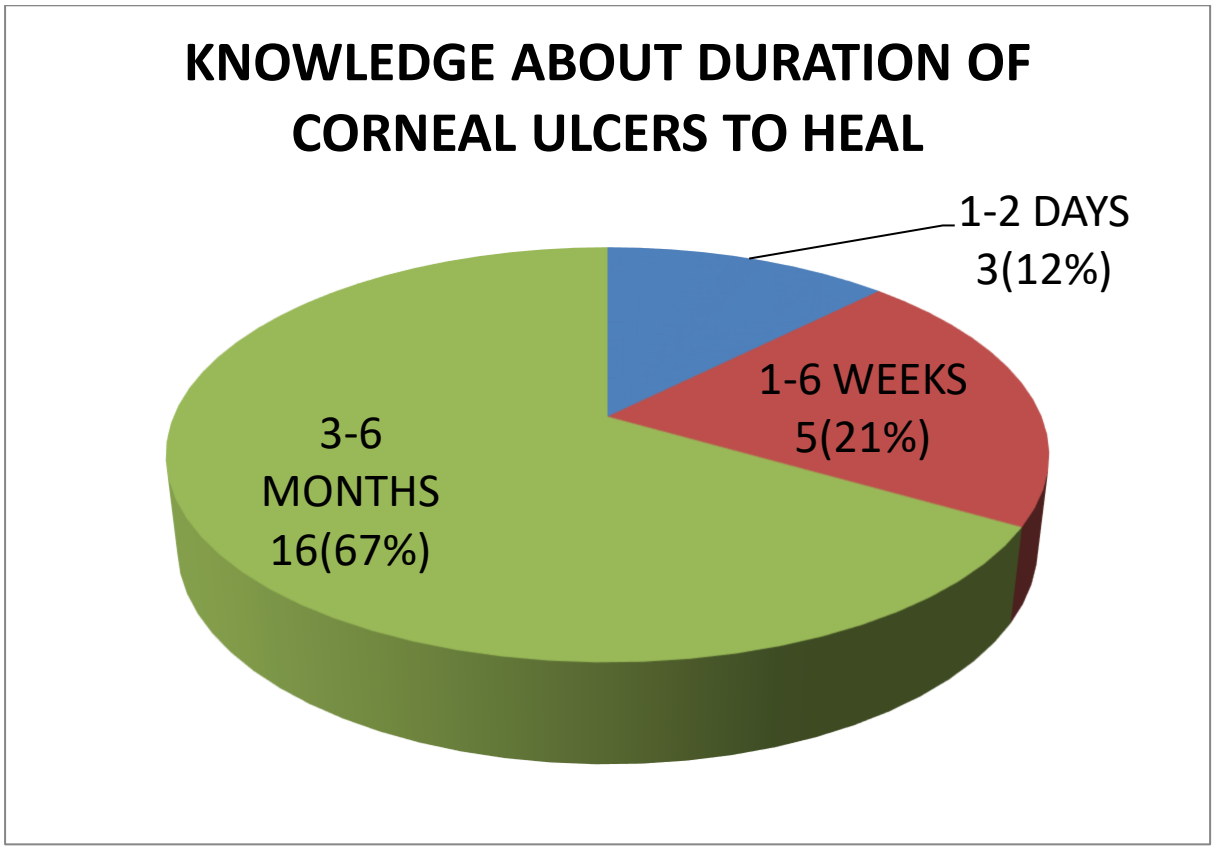

Figure 26: Knowledge about duration of corneal ulcer to heal

67% (16/24) of the respondents said that a corneal ulcer would take 3-6 months to heal completely. 3 people felt it would heal in 1-2 days, while 5 people said it would heal in 1-6 weeks.

xiii. Knowledge regarding restoration of vision by using spectacles alone

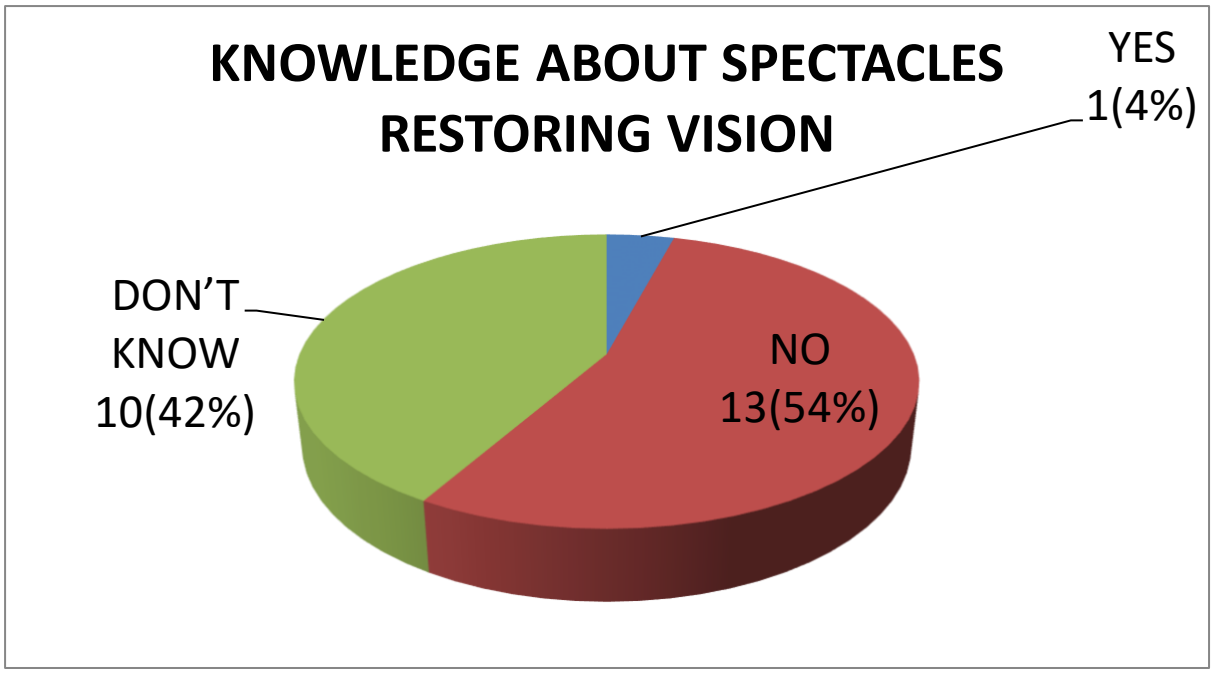

Figure 27: Knowledge regarding restoration of vision by using spectacles alone in corneal ulcer

13 people (54% of those who knew what a corneal ulcer was) said that spectacles alone would not suffice for restoration of vision after a corneal ulcer had healed. One person said it was enough, and 10 people did not know whether it was enough or not.

xiv. Awareness about corneal transplantation

Only 5 people out of 24 participants said that they knew about corneal transplantation,

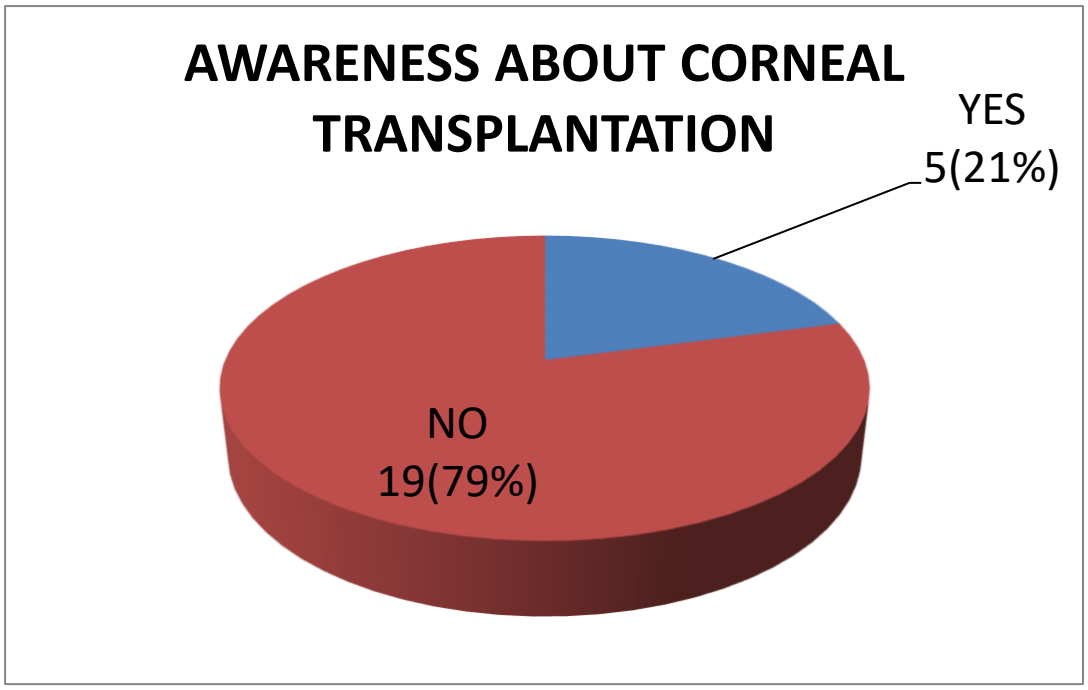

Figure 28: Knowledge about corneal transplantation

xv. Knowledge regarding visual restoration following Corneal transplant

Three out of the 5 people who knew about corneal transplantation said they knew it could be done to restore vision after corneal ulcer.

6. ATTITUDE OF PARTICIPANTS REGARDING CORNEAL ULCERS:

There were 8 questions in this section. All 300 participants were asked these questions.

i. Attitude regarding relation of diet and body immunity

To the question suggesting that diet had no role to play in immunity against infections, 231 out of the 300 participants (77%) disagreed, thus indicating that they did feel that a good diet helped improve immunity.

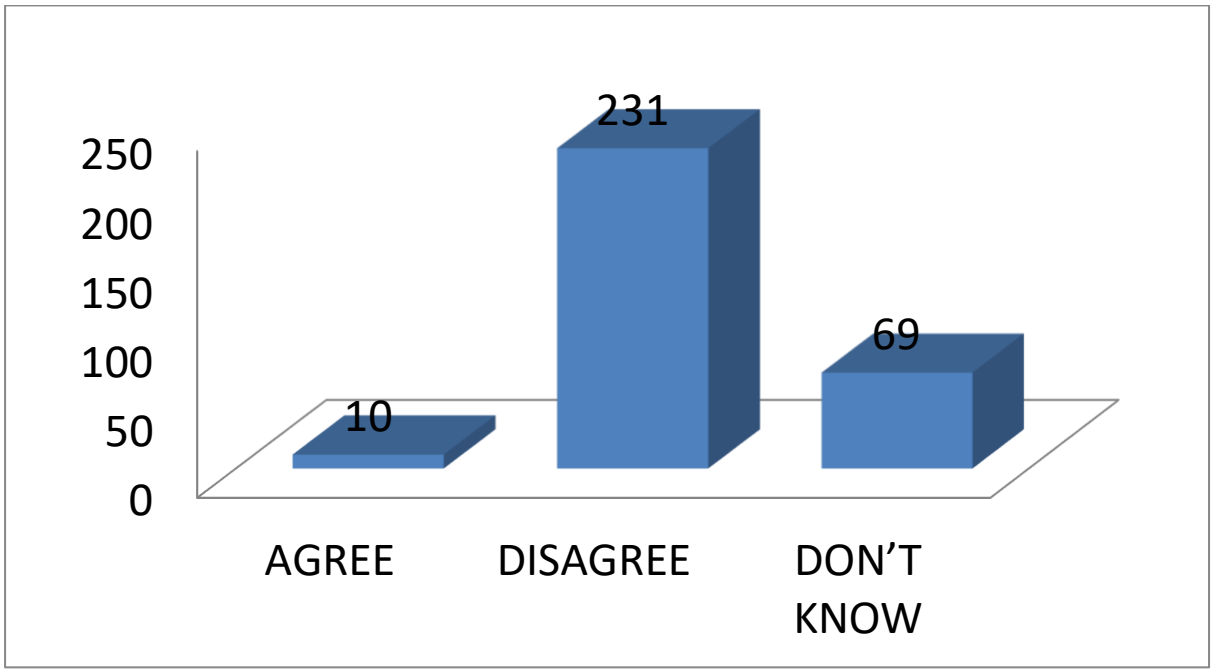

Figure 29: Attitude regarding relation of diet and body immunity

ii. Attitude regarding whom all to be approached for symptoms in eye

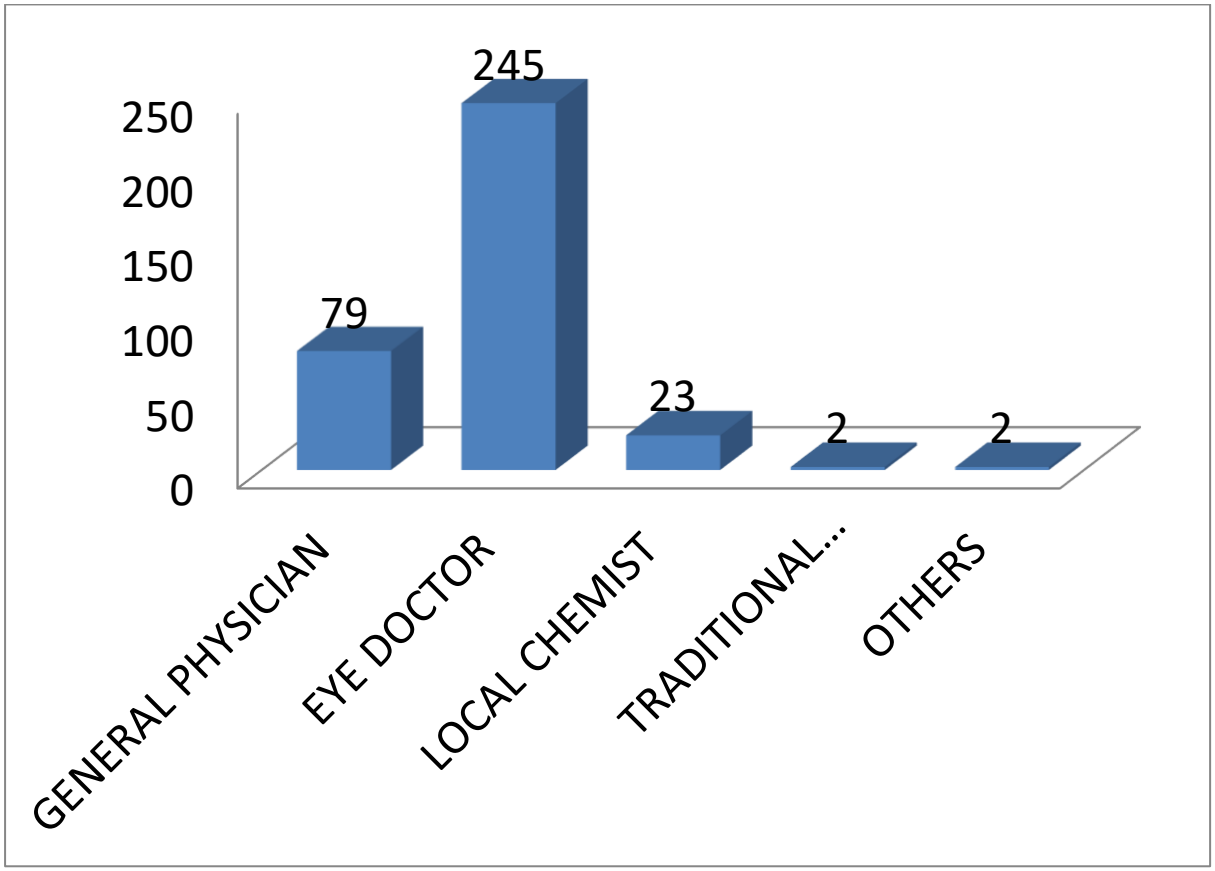

Figure 30: Attitude regarding whom all to be approached for symptoms in eye

The majority of participants (245/300; 81.7%) did feel that they would meet an eye doctor for eye symptoms, while 79/300 (26.3%) felt it would be enough to meet a general Physician. 23 respondents (7.7%) felt that they would go to a Chemist and buy drops over-the counter. Only 2 respondents (0.7%) said they would approach a Traditional practitioner for treatment.

iii. Attitude that postponing treatment as much as possible would be more convenient and less expensive

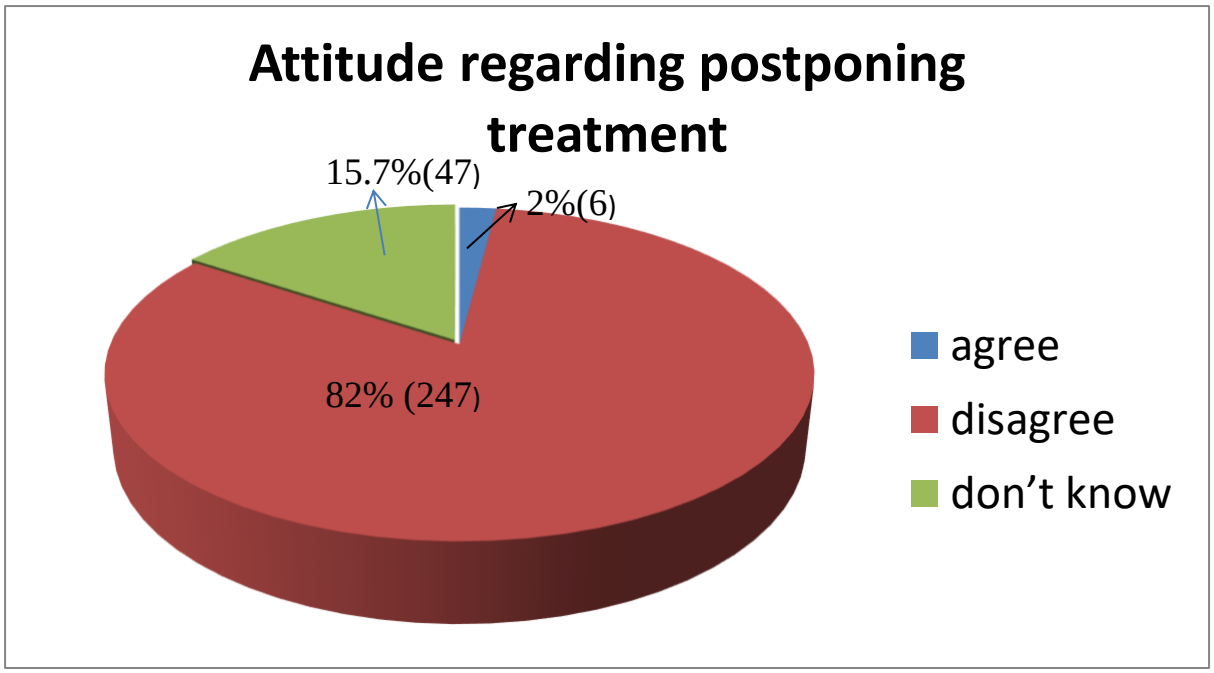

Figure 31: Attitude regarding postponing treatment as much as possible would be more convenient and less expensive.

247 out of the 300 respondents did not agree that postponing treatment as much as possible would be more convenient and less expensive than presenting immediately for treatment. 47 people did not know, and 6 people agreed with the statement.

iv. Attitude regarding need for follow up after treatment

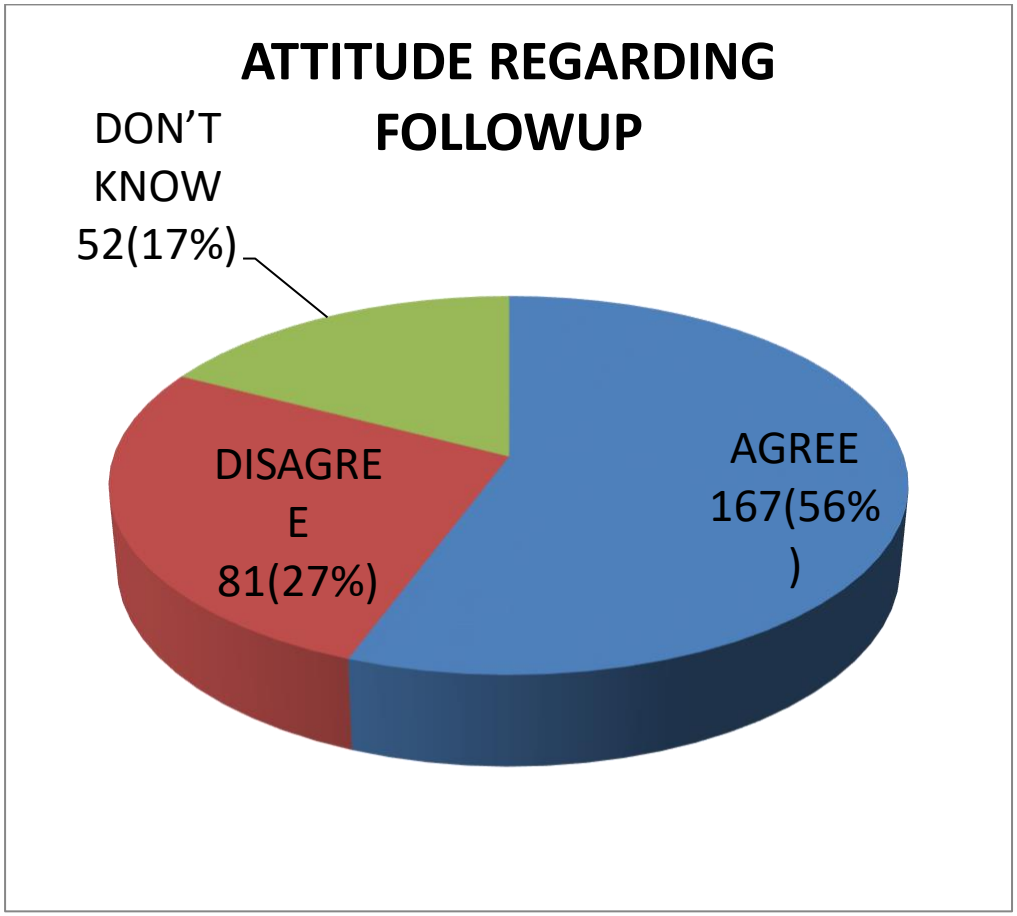

Figure 32: Attitude regarding need for follow up after treatment.

167 (56%) of the respondents agreed that regular follow up is needed even after pain and redness had resolved. 81 (27%) respondents felt that this was not needed.

v. Attitude regarding stopping treatment on their own once symptoms improve

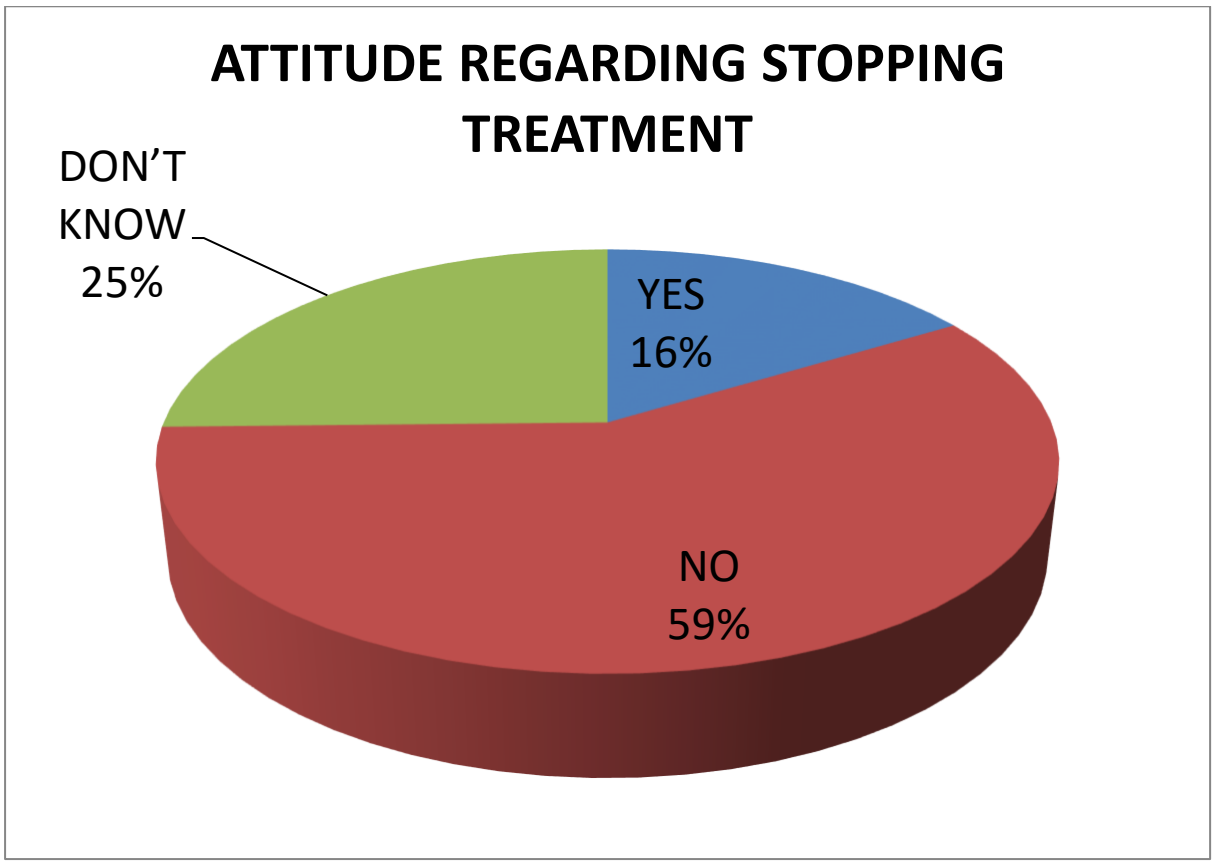

Figure 33: Attitude regarding stopping treatment once symptoms improve on their own.

177 people out of the 300 (59%) felt that they would not stop treatment on their own even if the symptoms reduced, while 48 people felt they would. 75 people did not know what they would do.

vi. Attitude regarding changing eye doctors when their symptoms do not improve

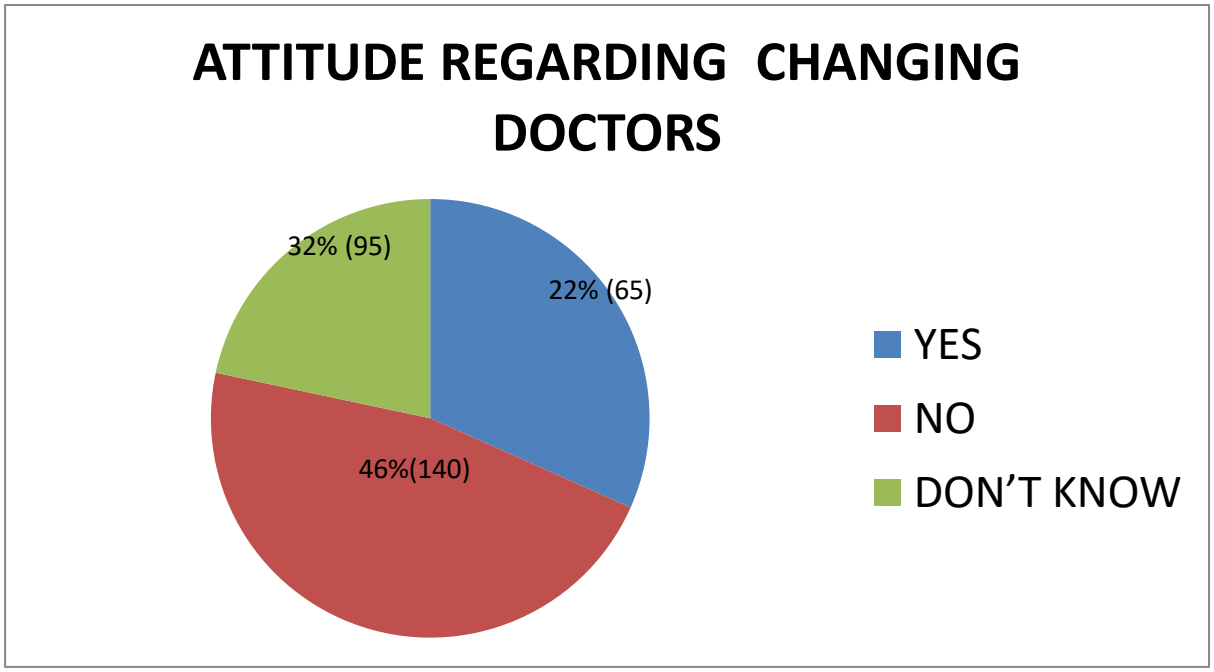

Figure 34:Attitude regarding changing eye doctors when their symptoms don't improve

140 people out of the 300 respondents said they did not think they would change doctors even if the symptoms did not improve, while 65 respondents said they would.

vii. Attitude regarding use of over-the-counter drugs

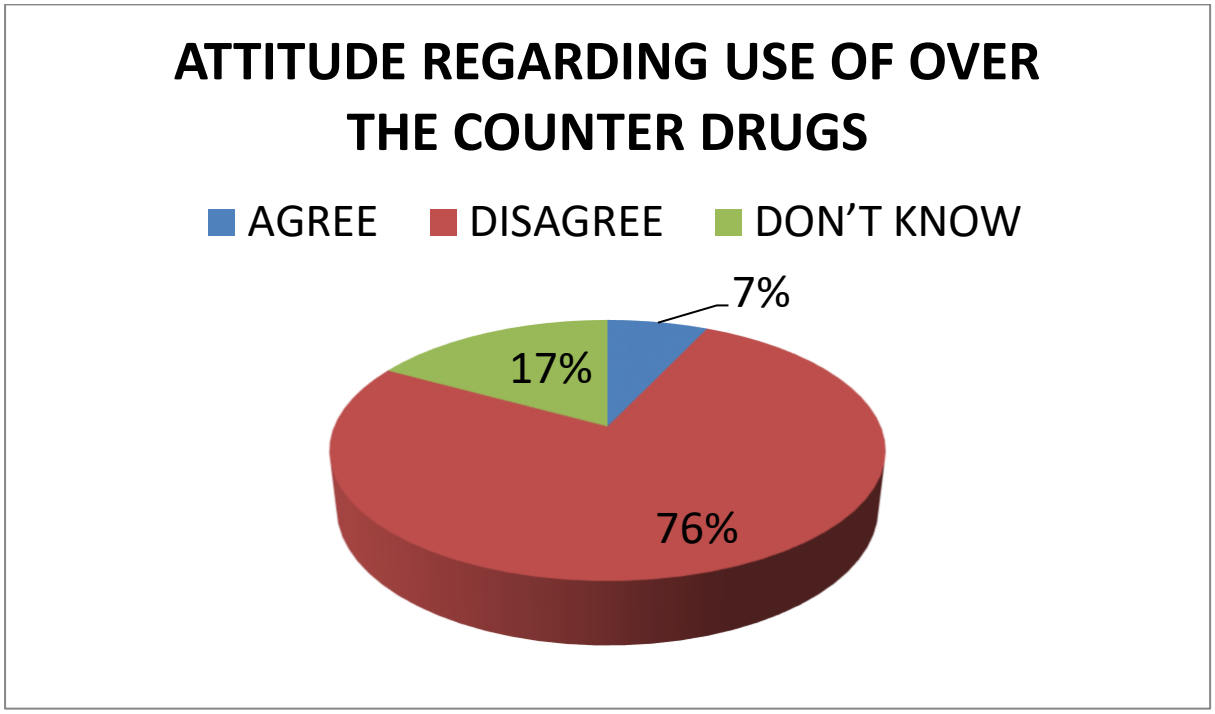

Figure 35: Attitude regarding use of over the counter drugs

228 of the participants (76%) did not agree that they would use over-the-counter medications before meeting an eye doctor if they developed pain and redness in their eyes.

viii. Attitude regarding refusal of usage of protective glasses

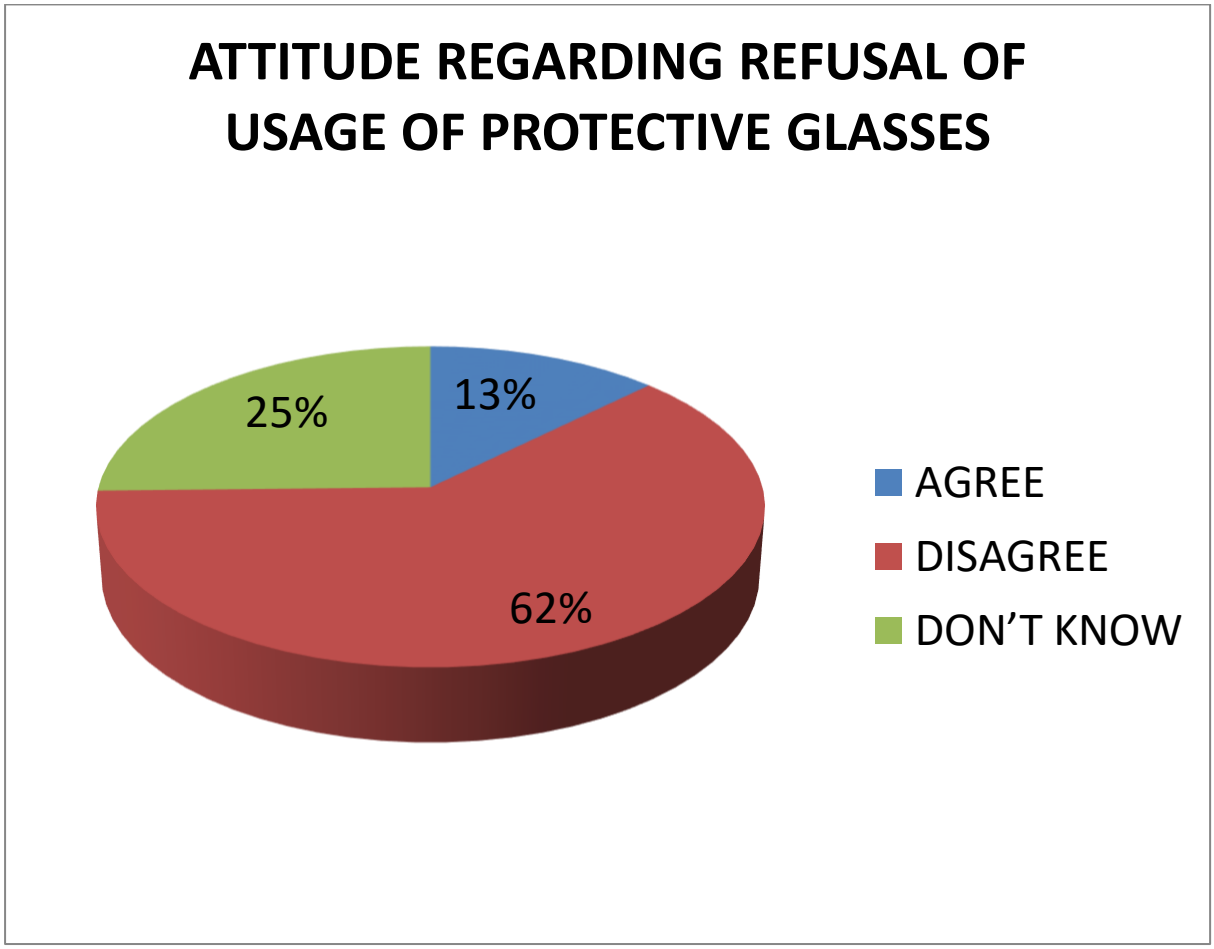

Figure 36: Attitude regarding refusal of usage of protective glasses

186 of the 300 respondents said they did not agree with the statement that they would be ashamed to use protective glasses while working in dusty environments like a mill of a quarry, while 75 people did feel that they would not use them.

7. PRACTICES FOLLOWED BY PARTICIPANTS:

There were 10 questions in this section.

i. Practice of protection of eyes to reduce the risk of corneal ulcer

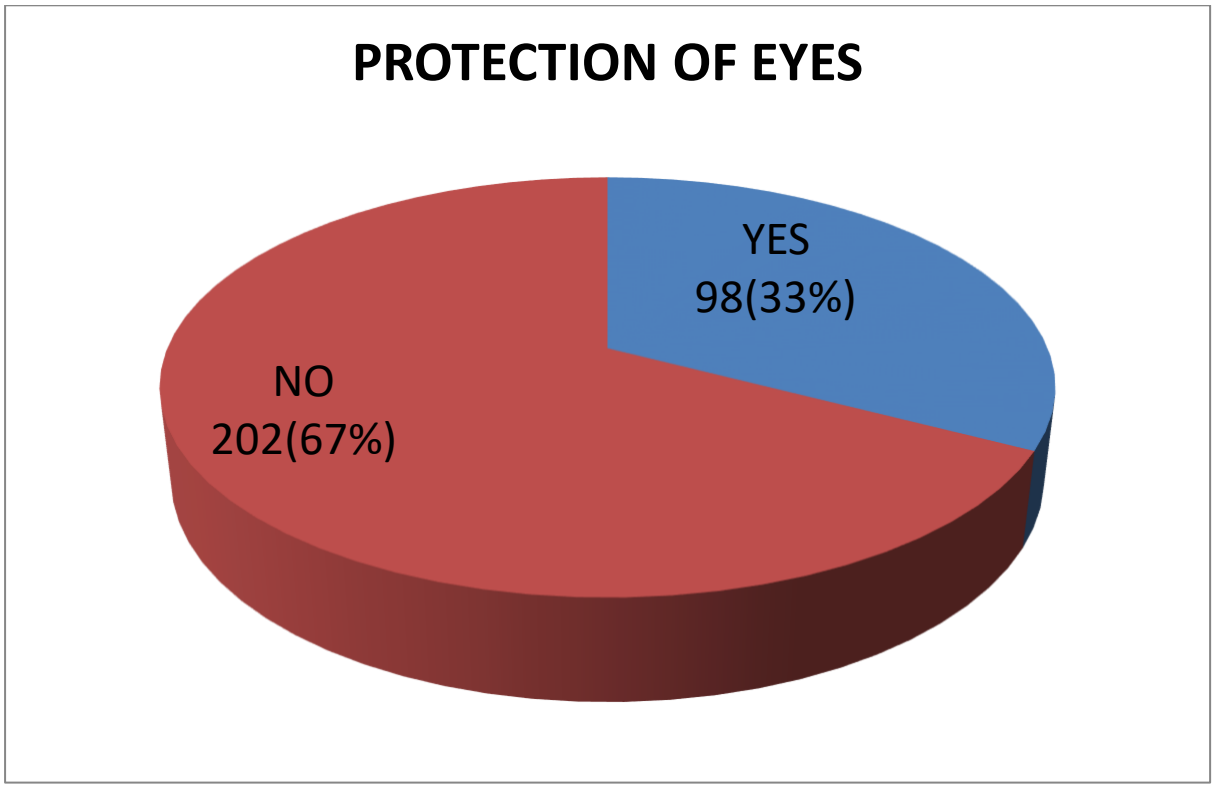

Figure 37: Practice of protection of eyes

On assessing the participants about the practices they follow to protect their eyes to reduce the risk of corneal ulcers, 98 people (33%) said that they do use some form of protection for their eyes while 202 (67%) of the participants did not follow any specific measures to protect their eyes.

ii. Types of Protection used

Among the 98 people who did use some measure to protect their eyes, the following figure gives the type of protection they followed.

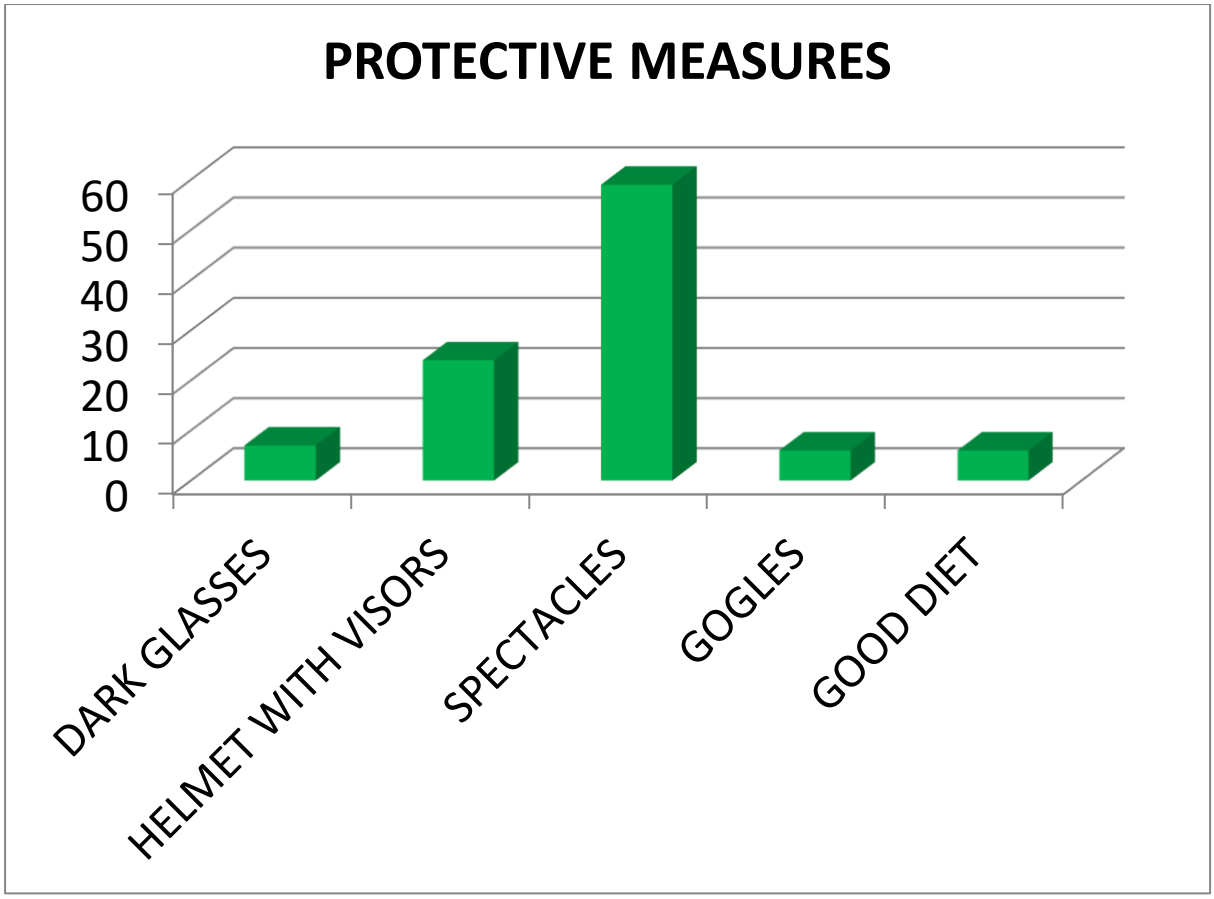

Figure 38: Protective measures used

59 people said they used spectacles, while 24 people said they used helmets with visors to protect the eyes. Seven people us dark glasses and 6 people use protective google in risky environments. 6 people say they take a good diet to help protect their eyes.

iii. Use of native methods of treatment for eyes

Participants were asked about the use of native methods of treatment for eyes by them or by their relatives. 58 (19%) people out of 300 had used some type of native methods of treatment.

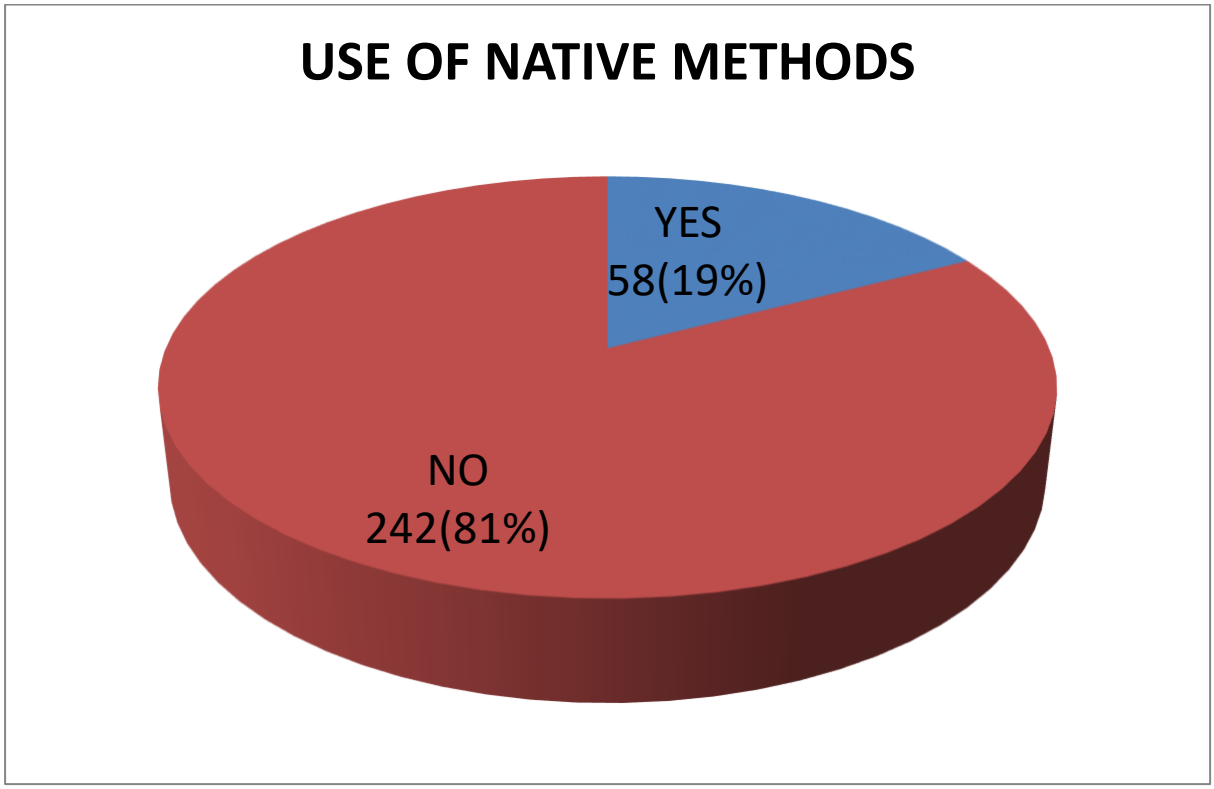

Figure 39: Use of native methods

iv. Among the native methods used the following figure gives the type of native methods they followed as a treatment for eyes.

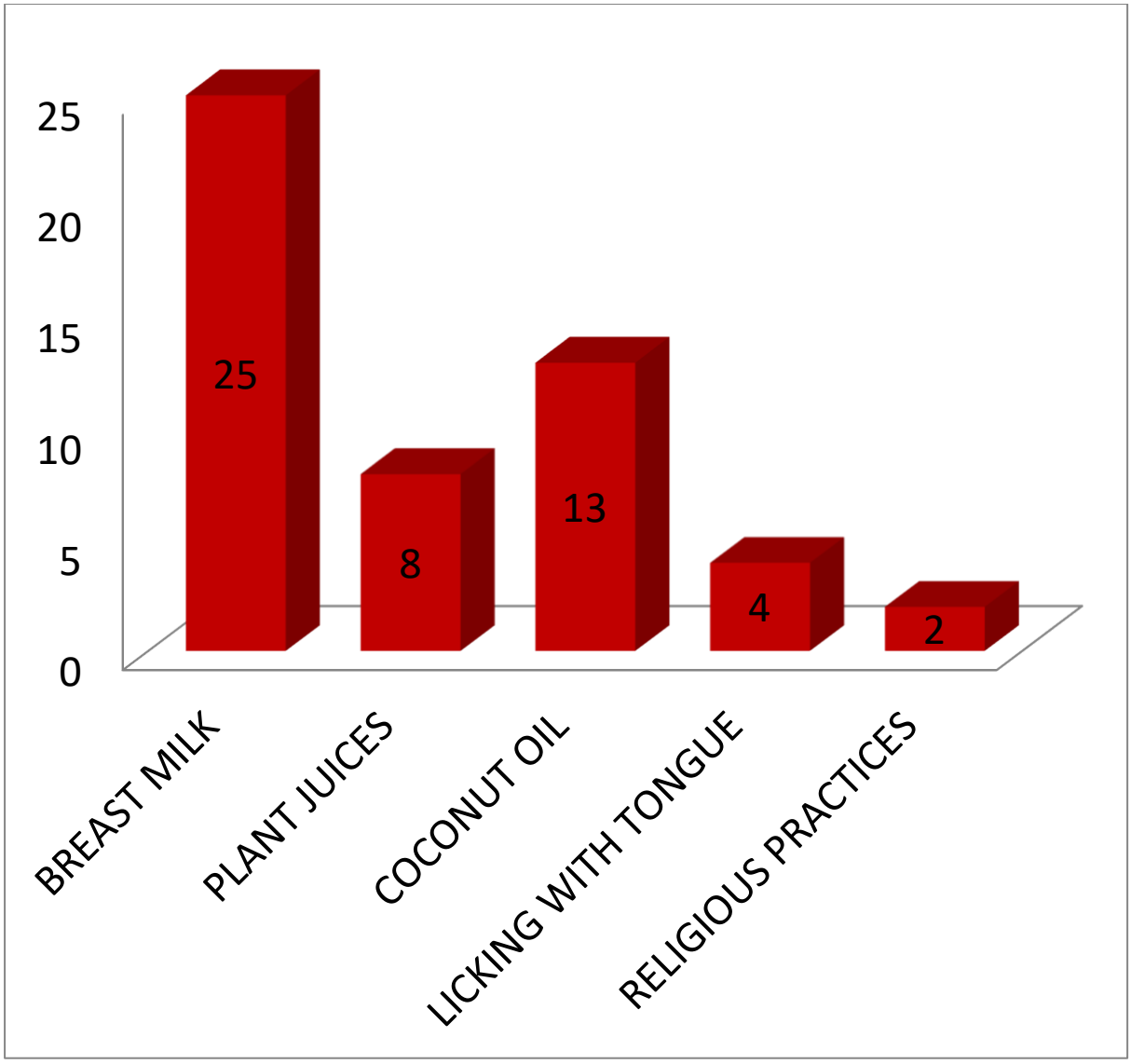

Figure 40: Types of traditional practices used

Instilling breast milk in the eye was the commonest type of native treatment used, while putting coconut oil in the eye was the 2nd commonest type. 4 people said that someone licking their eye was a type of treatment they had used. Eight people had used plant juices, and 2 people said religious practices had been used.

v. Practice of regularly using eye drops from chemists to protect their eye

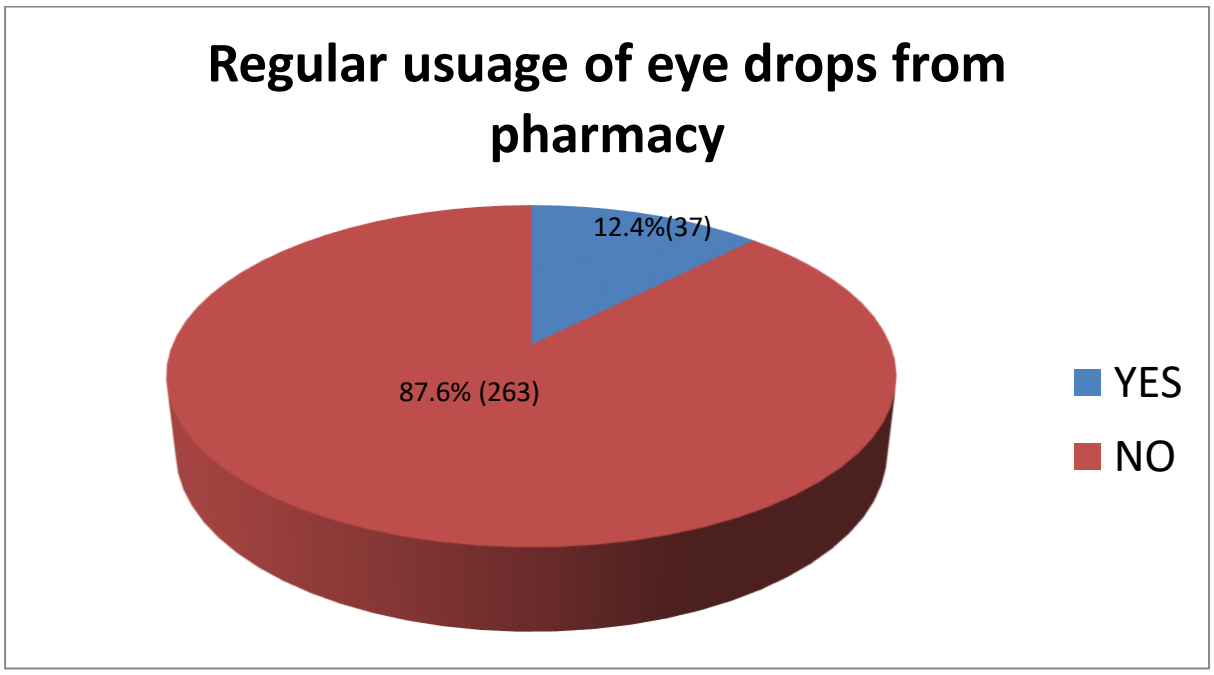

Figure 41: Practice of regularly using eye drops from chemists to protect their eye

37 out of the 300 participants said that they do use over-the-counter eye drops for their eyes.

vi. Conditions for which over the counter drops are used

Out of 37 people who use over the counter drops regularly, 32 people said they used it regularly for dryness and irritation and 5 people use it to increase the strength of the eye.

vii. Seeking eye-specialist for eye related issues

259 participants claimed that they go only to an eye specialist for their eye related issues and other 41 people claimed that they do not go to an eye-specialist.

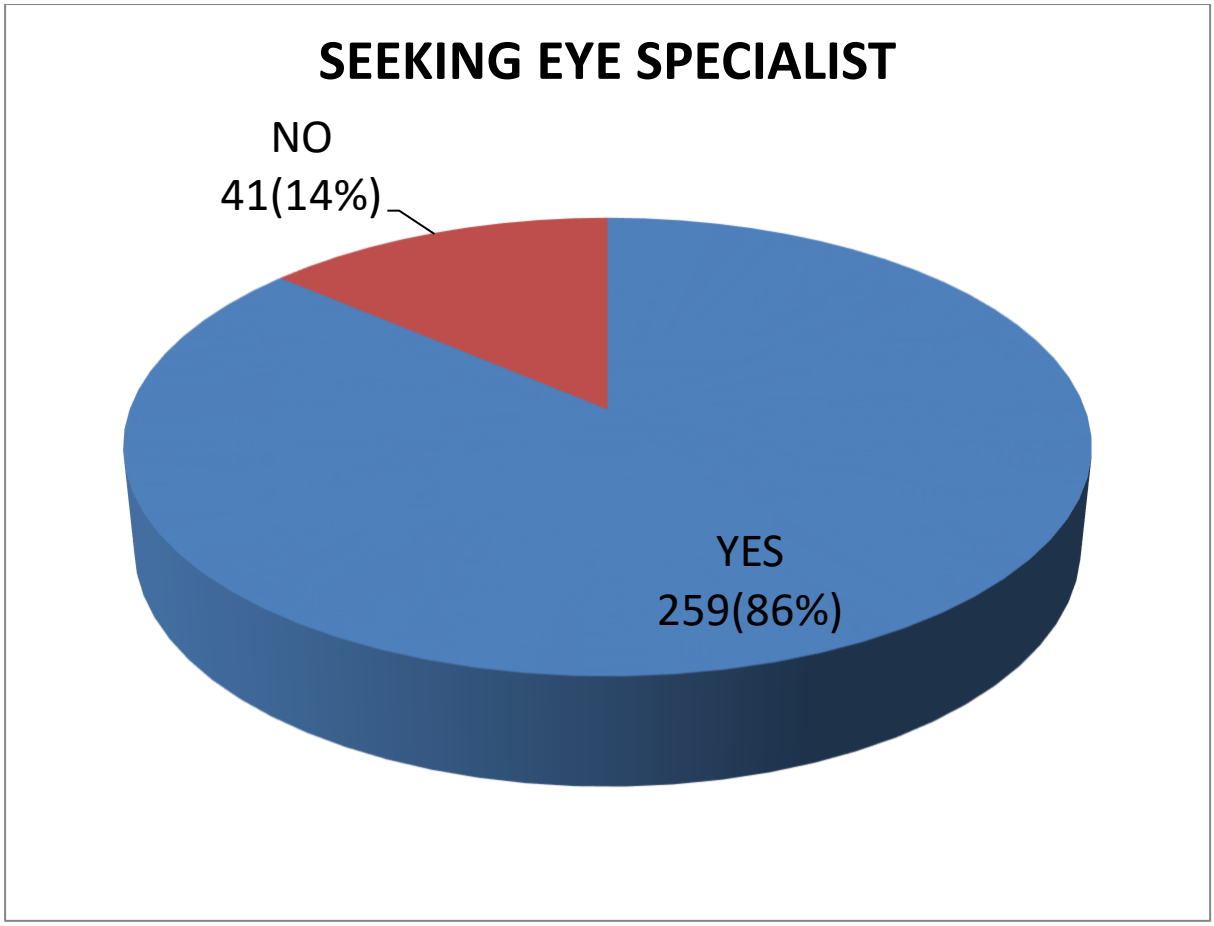

Figure 42: Seeking eye-specialist

viii. First line of approach for problems related to eye

All participants were asked about whom they would seek for help first if they have any redness, pain and watering in the eye. 224 people said they would meet and Eye specialist, while 52 people said they would first go to a General physician. 18 people said they would ask a local chemist for eye drops and 4 people said they would go to a Traditional practitioner.

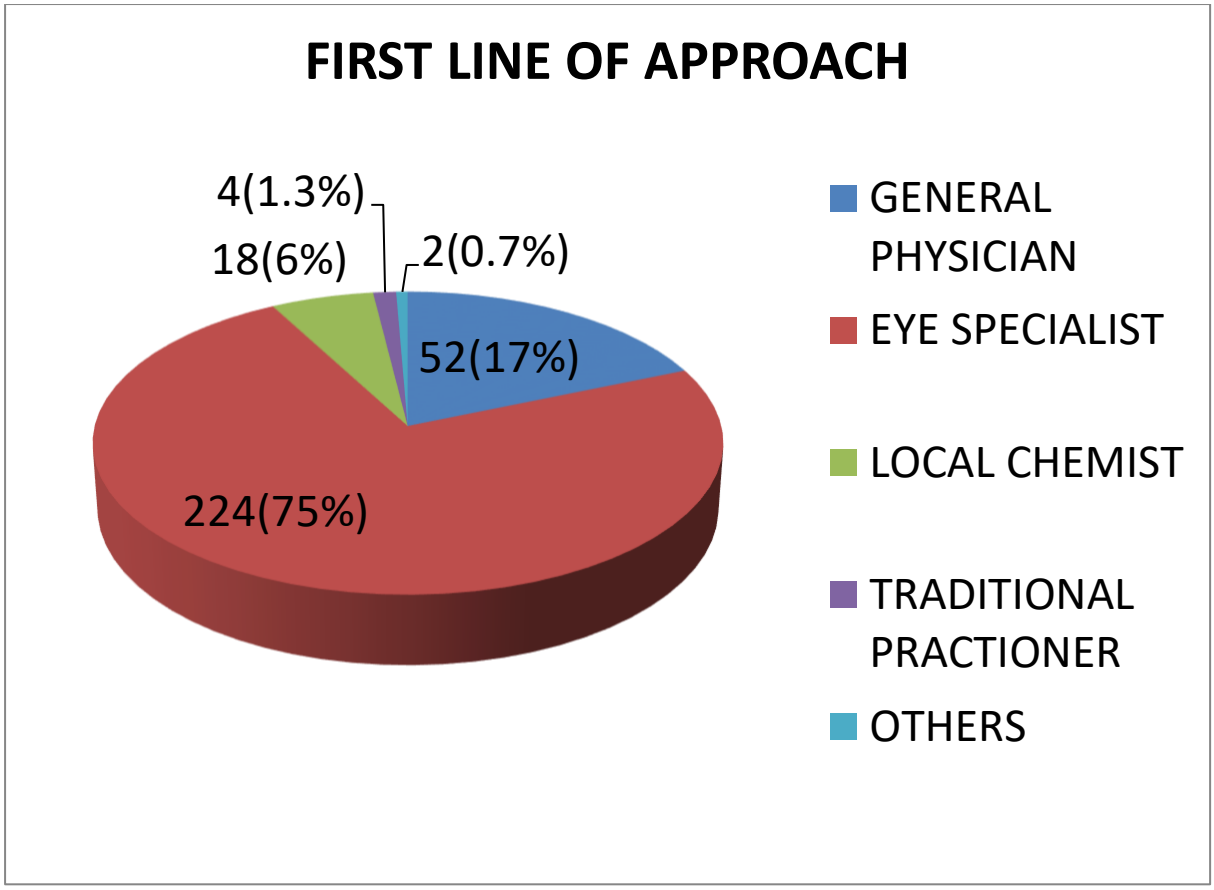

Figure 43: First line of approach

This trend is similar to the responses to Question 2 in the Attitude section.

ix. Time taken to seek treatment

The participants were asked of how soon they would seek treatment for their eye related issues. They differed in their opinion of seeking treatment immediately, within 2-3 days or seeking treatment only after their symptoms worsened.

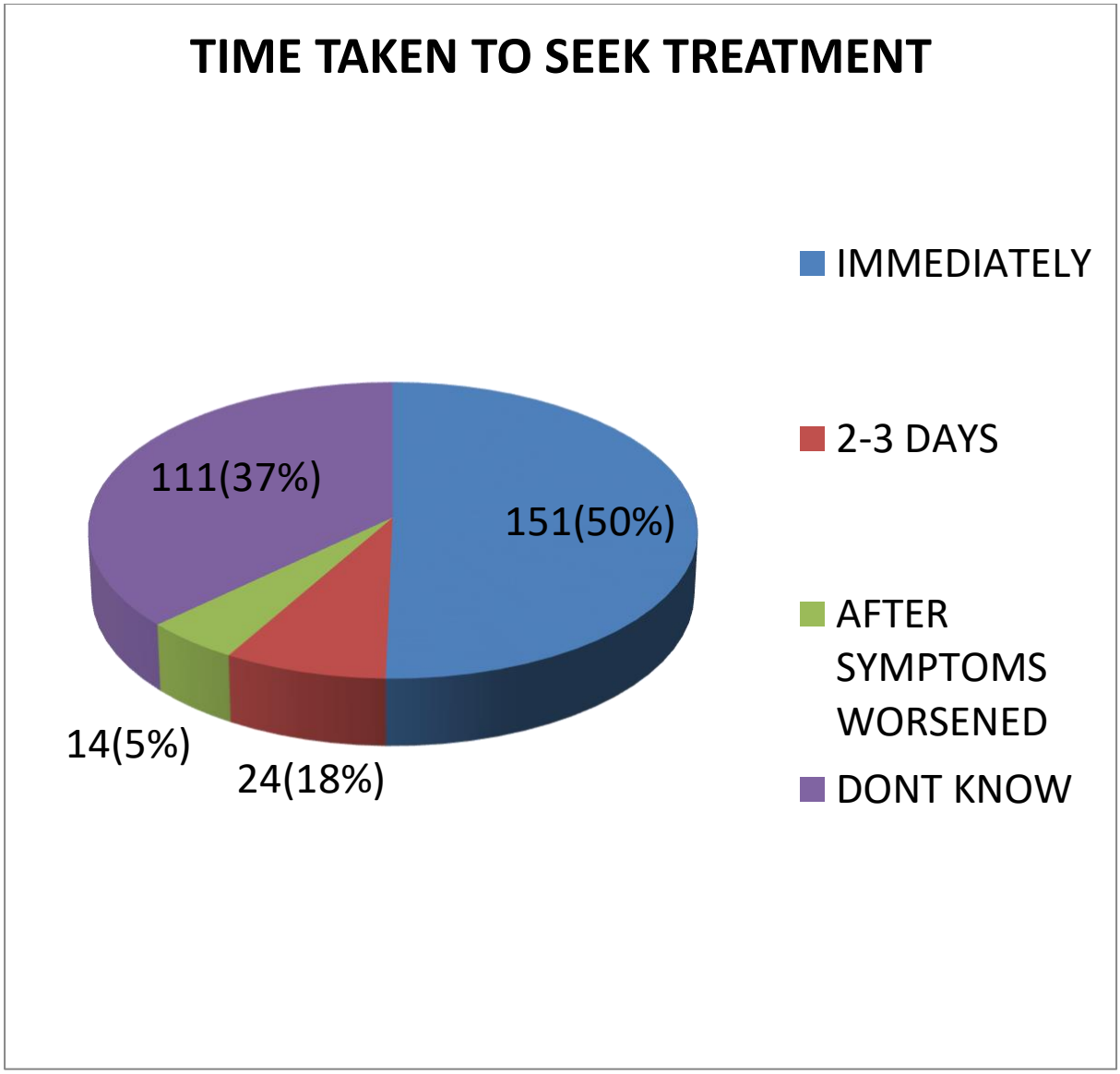

Figure 44: Time taken to seek treatment

50% of respondents said they would seek help for any redness /pain in the eye immediately. Only 14 people said they would only seek treatment after symptoms worsened.

x. Practice of monitoring blood sugar levels

The participants were asked about their awareness about the relation of corneal ulcers and diabetes. They were asked about the degree of correlation between keeping blood sugar levels under control and corneal ulcer management. The following were their opinion.

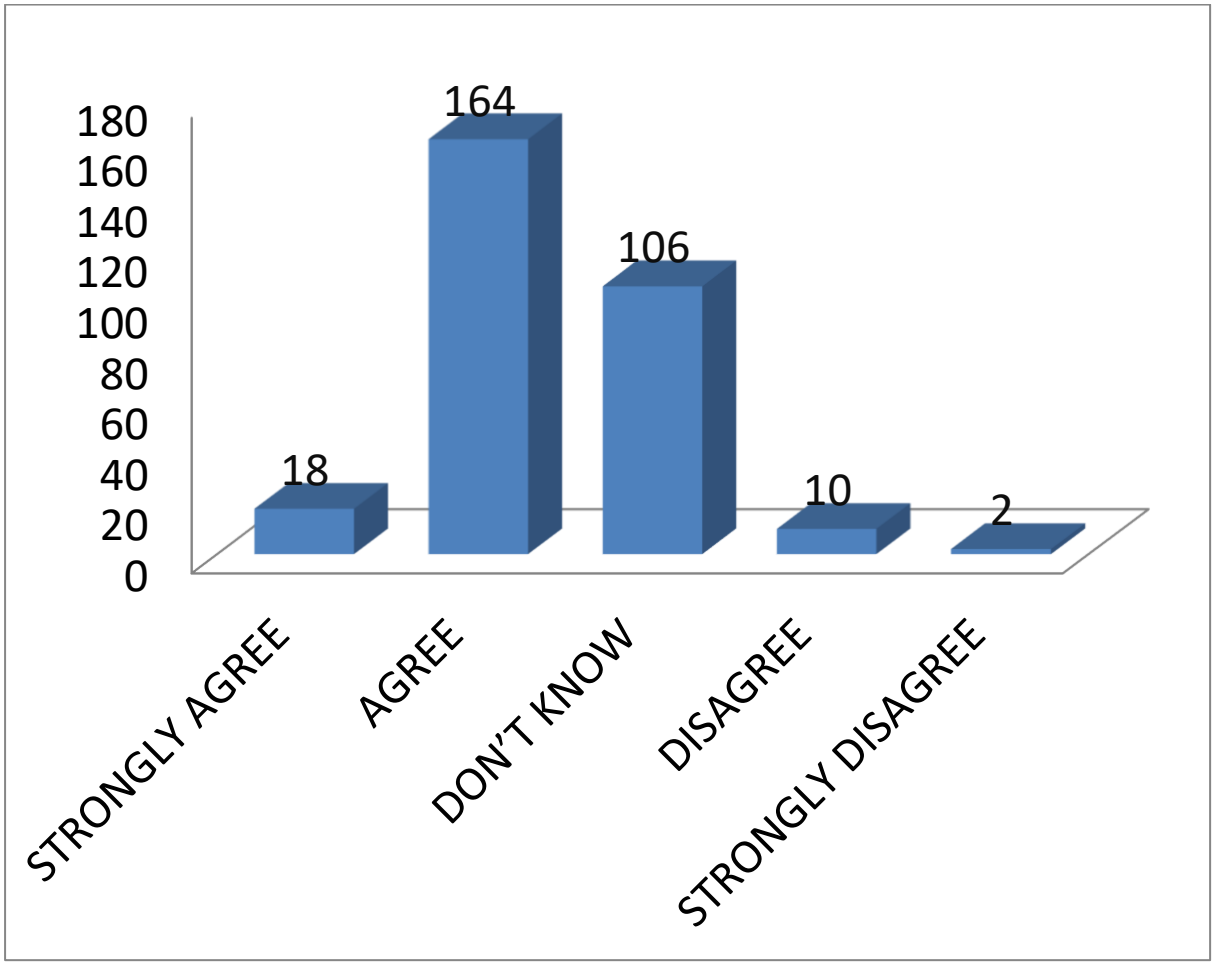

Figure 45: Monitoring of blood glucose levels

Most of the participants (54.7%) agreed that keeping their blood sugars under control was important, while 35.3% did not know that if there was any correlation between blood sugars and corneal ulcers.

8. **KAP SCORE**:

The KAP scores of all the participants were calculated and analyzed. The total score was analyzed for the whole sample as well as between the subgroups at each of the 3 locations. The Knowledge, Attitude and Practice scores were also individually analyzed.

Table 5: KAP SCORE

KAP SCORE	CHAD	LCECU	SCHELL	TOTAL
Knowledge score	0.68 ±3.7	1.15 ±4.1	0.73 ±3.4	0.85 ±3.7
Attitude score	5.77 ±1.7	4.82 ±1.8	5.53 ±1.6	5.37 ±1.7
Practice Score	4.96 ±1.7	4.31 ±2.0	4.64 ±1.9	4.68 ±1.9
KAP total score	11.45 ±5.1	10.28 ±5.8	10.90 ±4.6	10.87 ±5.2

The Knowledge score was highest in the patients recruited from LCECU but the p-value was 0.1669 which is not statistically significant. Thus, there was no significant difference in the knowledge score in each of the 3 groups of patients, and was almost similar in all subgroups. The mean score for the whole sample was 0.85, which was very low. This was because the majority of patients (276 out of 300) did not know what a corneal ulcer was even after a brief explanation, and so could not be asked any of the next 13 questions in the Knowledge section.

The Attitude score was higher in the patients recruited from CHAD and the p- value was 0.002 which is statistically significant. The mean score in the total sample was 5.37 compared to 5.77 in the CHAD group.

The Practice score was also highest in the patients recruited from CHAD and the p-value was 0.037 which is statistically significant. Thus the patients recruited from CHAD OPD had the best practices with respect to corneal ulcers/ eye disease. The mean score of the total sample was 4.68 compared to 4.96 in CHAD group.

The Total KAP score was highest in the patients recruited from CHAD and the p-value was 0.006 which is statistically significant. The mean score of the total sample was 10.87 compared to 11.45 in CHAD group.

Thus the CHAD group had the best Attitude, Practice and overall KAP score out of the 3 subgroups studied.

9. CORRELATION BETWEEN GENDER AND KAP SCORE:

On correlating gender with the total KAP score, males showed a slightly higher score compared to that of females (p=0.11), which was not statistically significant.

Table 6: GENDER AND KAP SCORE

GENDER	KAP SCORE
MALE	11.43 ± 4.6
FEMALE	10.46± 5.5

10. CORRELATION BETWEEN RESIDING AREA AND KAP SCORE:

The people residing in urban areas had a higher KAP score compared to other people and this was statistically significant with a p value of 0.006. Thus people residing in urban areas have the best knowledge and safe practices compared to that of people living in other areas.

Table 7: RESIDENCE AND KAP SCORE

RESIDING AREA	KAP SCORE
URBAN	11.85 ± 5.8
URBAN-SLUM	10.28 ± 4.2
SLUM	10.64 ± 3.6

11. CORRELATION BETWEEN DIABETES AND KAP SCORE:

The KAP scores between people with and without diabetes were almost the same and did not show any difference.

Table 8: DIABETES AND KAP SCORE

DIABETES	KAP SCORE
YES	10.72 ± 4.8
NO	10.94 ± 5.4

12. HEALTH EDUCATION.

The final question in the proforma was about their perception regarding the need of health education with specific respect to corneal ulcers. This question was a qualitative question and was not scored. 270 of the 300 participants felt that the health education system regarding awareness of corneal ulcer should be improved.

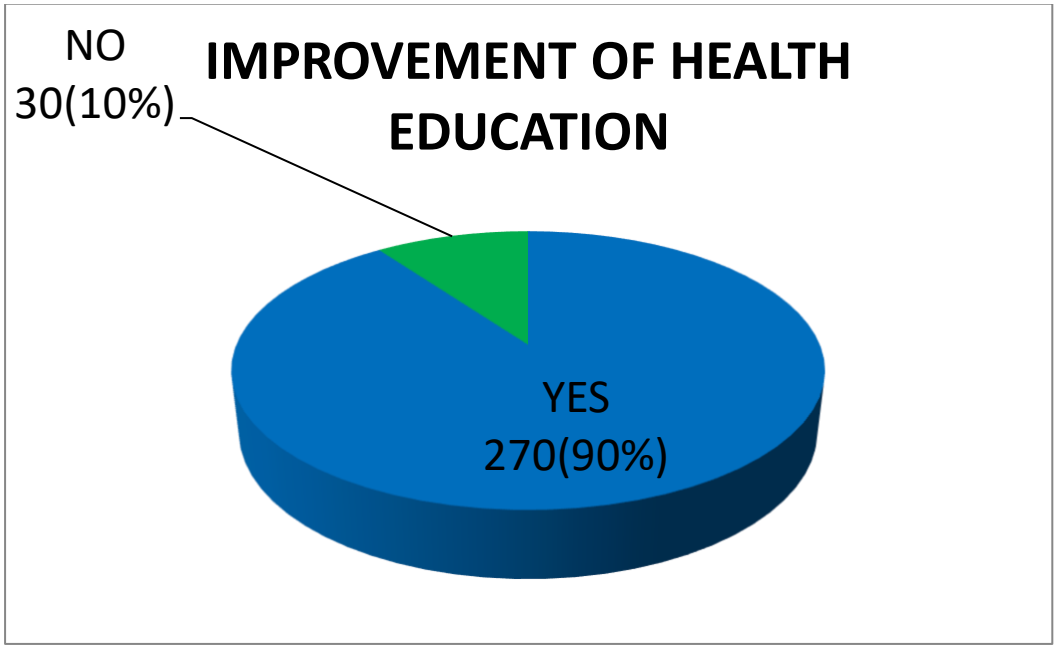

Figure 46: IMPROVEMENT OF HEALTH EDUCATION

DISCUSSION

This study was conducted in order to obtain a baseline understanding about the knowledge, attitude and practice with respect to corneal ulcers, of people attending OPD areas of the Department of Ophthalmology, Christian Medical College, Vellore, the Community Health and Development Unit, CMC (CHAD) and the Low Cost Effective Care Unit, Schell Campus, Vellore (LCECU)

. About 1/3 of the participants were diabetic.

53 percent of all the participants were from the urban areas of the city of Vellore. 39 percent of people were from urban slum area in and around Vellore and 8 percent of people were from slums. The KAP scores calculated showed that the participants from the urban areas were the highest. This would probably be because these people may have more exposure to education in schools, as well as via media like television and internet.

The most relevant finding of this study was that only 8% of the participants knew what a corneal ulcer was, even after a brief explanation in the native languages.

A study conducted by Ying Zhang et al in 2013 in a sub-urban region of China (30) found that 37.4% of people had some knowledge about corneal ulcer. Compared to this, the proportion of people from the drainage areas of the Department of Ophthalmology, CHAD and LCECU who know about corneal ulcers is dismally low.

In addition, even among those people who did know what a corneal ulcer was, the awareness regarding the nature of the disease or the etiology of the disease was conspicuously poor.

Regarding the knowledge about the duration of corneal ulcer for healing only 21% percent of people knew that it was 1-6 weeks and remaining 79% of people had erroneous knowledge about it.

Only 21% of people who knew what a corneal ulcer was, i.e. 1.6% of the total sample had knowledge about corneal transplantation and out of this number, only half knew that corneal transplantation can be used as a treatment of corneal ulcer. This shows the poor knowledge or awareness regarding corneal transplantation which in turn indirectly signifies people's poor knowledge regarding importance of eye donations in the community.

Regarding the attitude of the population regarding diet playing an important role in healing of corneal ulcers, ¼ of the respondents felt this was not true. Regarding the attitude of whom the people will approach as a first line of consultation while 81.7% claimed that they will approach an eye doctor, there were 26.3% of people who said that they will seek help from a general practitioner. This may be because they more frequently visit a general practitioner and so may have more trust in them. 7.6% of people still said that they would first approach a local chemist; this may be due to financial and time restraints.

Regarding the attitude of regular follow up even after the symptoms subside only 56% agreed that a regular follow up was necessary. 16% of people claimed that they will stop their treatment of their own once symptoms subside. This would explain the poor compliance for follow up among the population commonly encountered.

On assessing the population about the Practices they follow to protect their eyes to reduce the risk of corneal ulcers 98 people used some forms of practices to protect their eyes and 202 people did not follow any measures to protect their eyes

Participants were also asked about the use of native methods of treatment for eyes by them or by their relatives. 52 people out of 300 said they had used some form native method of treatment, the most common one being instillation of breast milk in the eye (48%), followed by coconut oil by 25% and plant juices by 15% of people. Some bizarre answers were also obtained, including 4 people who claimed that licking the eye would lead to healing.

This response in the practice section did not correspond to the answer given for a similar question asked in the attitude section where only 2 respondents (0.7%) said they would approach a Traditional practitioner for treatment.

86% participants said that they went to an eye specialist for their eye related issues with 73% claiming that they would go to an eye specialist as the first line of consultation. 19% went to a general physician, 6% to a local chemist and 1% to a traditional practitioner. This matched the trend of the answers given for a similar question in the Attitude section.

Regarding the practice of how soon the person will approach a doctor to seek treatment 50% claimed that they seek treatment immediately and this compared well to the 55.1% in the study in China conducted in 2013(30). 18% said that they will seek treatment only after 2-3 days. 14 people said they would seek treatment only after their symptoms worsened and 37% did not have any idea about this.

The participants were asked about their awareness about the relation of corneal ulcers and diabetes. They were asked about the degree of correlation between keeping blood sugar levels under control and corneal ulcer management. 61% agreed that blood sugar levels should be monitored during corneal ulcer treatment; 4% disagreed to this. 106 (35%) participants did not have any idea about the relation of diabetes and corneal ulcer.

The total Knowledge score was similar in all 3 subgroups studied, and the mean score of the total population was 0.85. The Attitude score as well as the Practice scores were highest in the patients recruited from CHAD ($p= 0.002$ and 0.037 respectively which is statistically significant). The total KAP score also was highest in the patients recruited from CHAD compared to the other groups as well as the Total sample score (10.87 compared to 11.45 in CHAD group).

Thus, it appears that the patients from the drainage area of CHAD hospital have better Attitude, Practice and Overall insight with respect to corneal ulcers compared to the people from the Dept. of Ophthalmology, and LCECU. It must be remembered that only people who have never had a corneal ulcer were included in this study. Hence, it can be inferred that the health education given by CHAD hospital to its drainage population regarding corneal ulcers must be better than that from the other 2 areas.

Finally, the participants were asked about the need of health education from our hospital and whether it should be improved. 90% of participants said that the health education system regarding awareness of corneal ulcer should be improved. This is

comparable to the study conducted in China by Ying Zhang et al in 2013(30) which also states that 90.6% of the people were willing for health education regarding corneal ulcer.

The gross lacunae in the awareness of corneal ulcers that we have uncovered by this study need to be addressed, and urgent steps have to be taken to educate the public regarding what a corneal ulcer is, what are the preventive steps that must be taken, what the acceptable treatment modalities are, and where appropriate treatment can be accessed. Education regarding the harmful effects of some of the native treatments like instilling unsterile breast milk, plant juices, coconut oil, and licking the eye has to be given to the public around our hospital.

CONCLUSION

1. There was a gross lack of knowledge and awareness about corneal ulcers among residents in and around Vellore.
2. The people residing in urban areas showed higher KAP scores, but even their knowledge was inadequate.
3. The diabetic population also had low level of awareness about corneal ulcers, in spite of being a high risk population for corneal ulcers.
4. The participants from CHAD had the highest insights among the population studied, regarding corneal ulcers, but even their knowledge was inadequate.
5. Some traditional practices which are very detrimental to eyes are still prevalent; this should be discouraged and the public should be educated about the harmful effects of it.
6. The participants recruited felt that there was insufficient health education regarding corneal ulcers and were willing to receive it.
7. More steps in creating awareness among public about corneal ulcers, especially the high risk population must be undertaken.

RECOMMENDATIONS

- Health education in the form of pamphlets, posters, and videos creating awareness by explanation of all signs and symptoms of corneal ulcer and how to prevent it can be initiated.
- Students can be encouraged to educate the public about corneal ulcers as a part of their curriculum activities which will help the public
- Awareness can be created by conducting health camps and health check-ups routinely in less privileged areas as well as by identifying the people at higher risk.
- Workers in occupations which have hazards / more likelihood of getting a corneal ulcer like quarries and dusty mills, as well as agricultural workers should be educated and can be given protective aids like goggles to prevent corneal ulcers.

LIMITATIONS

OF

THIS STUDY

1. Measurement of the intensity of the difference of opinions or attitudes reported**.**
2. The pre-coded choices of answers in questionnaire may not be sufficiently comprehensive, so not all answers would be easily accommodated.
3. Some participants may be forced to choose an inappropriate pre-coded choices of answers that might not be fully represent their views.
4. There is always a potential risk for an interviewer bias, framing and recall bias, in which participant replies are being influenced by the pattern of the questionnaire**.**
5. Some questions are about socially desirable attitudes, states and behavioural may lead to potential social desirability bias.
6. The areas of collection of data are located in Vellore city which although serves the draining population from nearby areas, has a majority of urban people approaching the health care.

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ANNEXURES

ANNEXURE 1: LIST OF TABLES AND FIGURES

LIST OF TABLES:

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ANNEXURE 2: IRB CLEARANCE FORM:

OFFICE OF RESEARCH
INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE, VELLORE, INDIA

Dr. B.J. Prashantham, M.A., Dr. Min (clinical)
Director, Christian Counselling Center
Chairperson, Ethics Committee

Dr. Anna Benjamin Pulimood, MD., Ph.D.,
Chairperson, Research Committee, Principal

Dr. Suceena Alexander, MD., DM., FASN.,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

January 8, 2021

Dr. J. Ajay Santhosh David,
PG Registrar,
Department of Ophthalmology,
Christian Medical College,
Vellore – 632 004.

Sub: Fluid Research Grant: New Proposal:
To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India
Dr. J. Ajay Santhosh David, Employment Number:21674, Post graduate registrar, Ophthalmology, Dr.Sanita Korah Employment number: 20067, Ophthalmology, Dr. Jeyanth Rose , Employment Number : 28456, ophthalmology, Dr . Alo sen Employment Number : 28710 ophthalmology, Dr. Antonisamy, Biostatistics.

Ref: IRB Min. No. 13549 [OBSERVE] dated 03.11.2020.

Dear Dr. J. Ajay Santhosh David,

I enclose the following documents:-

1. Institutional Review Board approval 2. Agreement

Could you please sign the agreement and send it to Dr. Suceena Alexander, Addl. Vice Principal (Research), so that the grant money can be released.

With best wishes,

Dr. Suceena Alexander
Secretary (Ethics Committee)
Institutional Review Board

Dr. Suceena Alexander, MD.,DM.,FASN.
Secretary - (Ethics Committee)
Institutional Review Board
Christian Medical College,
Vellore - 632 002, Tamil Nadu, India.

CC: Dr.Sanita Korah, Professor, Dept.of Ophthalmology, CMC

Ethics Committee Blue, Office of Research, I Floor, Carman Block, Christian Medical College, Vellore, Tamil Nadu 632 002
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Additional Vice-Principal (Research)

January 8, 2021

Dr. J. Ajay Santhosh David,
PG Registrar,
Department of Ophthalmology,
Christian Medical College,
Vellore – 632 004.

Sub: Fluid Research Grant: New Proposal:
To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India
Dr. J. Ajay Santhosh David, Employment Number:21674, Post graduate registrar, Ophthalmology, Dr.Sanita Korah Employment number: 20067, Ophthalmology, Dr. Jeyanth Rose , Employment Number : 28456, ophthalmology, Dr . Alo sen Employment Number : 28710 ophthalmology, Dr. Antonisamy, Biostatistics.

Ref: IRB Min. No. 13549 [OBSERVE] dated 03.11.2020.

Dear Dr. J. Ajay Santhosh David,

The Institutional Review Board **(Blue**, Research and Ethics Committee) of the Christian Medical College, Vellore, reviewed and discussed your project titled "To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India" on November 03, 2020.

The Committee reviewed the following documents:

1. IRB Application Format
2. Patient information sheet and Consent Form
3. Questionnaire
4. Permission Letter
5. CVs. Of Drs. Ajay Santhosh D, Alo Sen, Antonisamy, Sanita, Jeyanth Rose.
6. No. of Documents 1 – 5.

The following Institutional Review Board (Blue, Research & Ethics Committee) members were present at the meeting held on November 03, 2020 in the New IRB Room, Christian Medical College, Vellore 632 004.

Ethics Committee Blue, Office of Research, I Floor, Carman Block, Christian Medical College, Vellore, Tamil Nadu 632 002
Tel: 0416 - 2284294, 2284508 Fax: 0416 - 2262788 E-mail: research@cmcvellore.ac.in

Dr. B.J. Prashantham, M.A., Dr. Min (clinical)
Director, Christian Counselling Center
Chairperson, Ethics Committee

Dr. Anna Benjamin Pulimood, MD., Ph.D.,
Chairperson, Research Committee, Principal

Dr. Suceena Alexander, MD., DM., FASN.,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

Dr. Rohin Mittal	MS , DNB	Professor, Department of General Surgery, CMC Vellore	Internal Clinician
Mrs. Ida Nirmal	MSc Nursing	Professor, Addl Deputy Dean, College of Nursing, CMC, Vellore	Internal, Nurse
Mrs. Rebecca Sumathi Bai	MSc Nursing	Professor and Head of Specialty Nursing7, CMC Vellore	Internal, Nurse
Dr. HS. Asha	MBBS, DNB	Professor, Department of Endocrinology, CMC Vellore	Internal Clinician
Mrs. Mahasampath Gowri	M.Sc Biostatistics	Lecturer, Biostatistics CMC, Vellore	Internal, Statistician
Dr. Rekha Pai	MSc, PhD	Associate Professor, Pathology, CMC, Vellore	Internal, Basic Medical Scientist
Dr. Premila Abraham	M.Sc. Ph.D	Professor, Department of Biochemistry, CMC, Vellore	Internal Clinician

We approve the project to be conducted as presented.

Kindly provide the total number of patients enrolled in your study and the total number of Withdrawals for the study entitled: "To determine the Knowledge, Attitude and Practice Patterns regarding Suppurative Corneal Ulcers in the drainage population of a Tertiary Eye Hospital in South India" on a monthly basis. Please send copies of this to the Research Office (research@cmcvellore.ac.in).

The Institutional Ethics Committee expects to be informed about the progress of the project, Any **adverse events** occurring in the course of the project, any **amendments in the protocol and the patient information / informed consent**. On completion of the study you are expected to submit a copy of the **final report**. Respective forms can be downloaded from the following link: http://172.16.11.136/Research/IRB_Polices.html in the CMC Intranet and in the CMC website link address: http://www.cmch-vellore.edu/static/research/Index.html.

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Dr. Suceena Alexander, MD., DM., FASN.,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

Fluid Grant Allocation:

A sum of 8,000/- INR (Rupees Eight thousand Only) will be granted for 1 year.

Yours sincerely,

Dr. Suceena Alexander
Secretary (Ethics Committee)
Institutional Review Board

Dr. Suceena Alexander, MD.,DM.,FASN.
Secretary - (Ethics Committee)
Institutional Review Board
Christian Medical College,
Vellore - 632 002, Tamil Nadu, India.

IRB Min. No. 13549 [OBSERVE] dated 03.11.2020

Ethics Committee Blue, Office of Research, I Floor, Carman Block, Christian Medical College, Vellore, Tamil Nadu 632 002
Tel: 0416 – 2284294, 2284508 Fax: 0416 – 2262788 E-mail: research@cmcvellore.ac.in

ANNEXURE 3: PERMISSION LETTERS

FROM,

Dr.Ajay Santhosh David,

PG Registrar.

Department of Ophthalmology,

Christian medical college,

Vellore.

Through,

Dr.Sanita Korah,

Head of Department of Ophthalmology,

CMC Vellore.

TO,

Dr.Vinod Abraham,

Head of CHAD,

CMC Vellore.

Respected Sir,

Subject-Request to recruit patients from CHAD OPD waiting areas for PG dissertation

I am planning to do a PG research study entitled "KAP of corneal ulcer" under the guidance of Dr.Sanita Korah, Professor and Head of Department of Ophthalmology.I request you to allow me to recruit patients from your OPD waiting areas for the study.Your support and help is highly solicited.

Thanking you,

Yours sincerely,

Dr.Ajay Santhosh David,

07/10/2020

Vellore.

Dr Ajay can proceed with the study in CHAD Hospital.

13/10/20

FROM,

Dr.Ajay Santhosh David,

PG Registrar.

Department of Ophthalmology,

Christian medical college,

Vellore.

Through,

Dr.Sanita Korah,

Head of Department of Ophthalmology,

CMC Vellore.

TO,

Dr.Sunil Abraham,

Head of LCECU,

CMC Vellore.

Respected Sir,

Subject-Request to recruit patients from LCECU OPD waiting areas for PG dissertation

I am planning to do a PG research study entitled "KAP of corneal ulcer" under the guidance of Dr.Sanita Korah, Professor and Head of Department of Ophthalmology.I request you to allow me to recruit patients from your OPD waiting areas for the study.Your support and help is highly solicited.

Thanking you,

Yours sincerely,

Dr.Ajay Santhosh David,

07/10/2020

Vellore.

ANNEXURE 4: PARTICIPANT INFORMATION SHEET

STUDY TITLE: KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING CORNEAL ULCER AMONG GENERAL POPULATION DRAINING INTO TERITARY CARE CENTER.

You are being invited to take part in this research study carried out in the Department of Ophthalmology, Schell Eye Hospital, Christian Medical College, and Vellore. The information in this document is meant to help you decide whether or not to take part in this study. Before you decide whether or not you wish to take part, please read the information provided below carefully. Please take time to ask questions – do not feel rushed or under pressure to make a quick decision. You should clearly understand the risks and benefits of taking part in this study so that you can make a decision that is right for you. This process is known as 'Informed Consent'. Refusal to participate in the study or withdrawal from the study will not lead to any penalty or affect your matters with the investigators or the institution.

What is the purpose of the study?

Our study will assess the Knowledge, Attitude and Practices of patients with respect to corneal ulcers in our drainage population.

Why have I been invited?

You have been chosen because you have fulfilled the criteria of being a resident of Vellore

What will happen if I take part?

If you take part in the study, you will be requested to answer a questionnaire.

What are the possible benefits of taking part?

You can gain awareness about corneal ulcer and can then help you suspect it if you get it, and gain help from a tertiary care centre. This will reduce further complication due to late presentations. Additionally, by participating in this study, you will be helping us to understand the current health awareness scenario to make necessary changes in health education programs to improve awareness which can help patients in future. There will be no immediate benefits/monetary benefits on being a part of this study.

What are the possible risks of taking part?

There are no risks involved in taking part in this study. The personal information collected will remain strictly confidential, and only the interpretation of data will be published.

What if there is a problem?

If you wish to complain about any aspect of the way in which you have been approached or treated during the course of this study, you should contact the Principal investigator or you may contact Research Office, Carman Block, Bagayam, Vellore, 632002, email - research@cmcvellore.ac.in or researchothers@cmcvellore.ac.in, phone - 0416 2284294.

Who has reviewed this study?

The Institutional Review Board (IRB) of the Christian Medical College, Vellore, has reviewed this study.

By signing this document, you will be allowing the research team investigators, to analyse the information you give. The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

Thank you for reading this.

If you agree to enter the study, please sign the attached consent form.

Contact Person (Principal Investigator)
J.Ajay santhosh david
Department of Ophthalmology, Schell Campus,
Christian Medical College, Vellore.
Phone: 9994472922, ajay2santa@gmail.com.

கிறித்துவ மருத்துவக் கல்லூரி, வேலூர்.
கண்மருத்துவத்துறை,

பங்கேற்பாளர்தகவல்தாள்:

ஆய்வுத்தலைப்பு:

மூன்றாம்நிலைப்பராமரிப்புமையத்திற்குக்கழிந்துசெல்லும்பொதுமக்கள்தொகையி

னருள்கருவிழிப்(படலப்)புண்பற்றியஅறிவு, மனப்பான்மைமற்றும்செயல்பாடுகள்.

தேதி:

வேலூர்கிறித்துவமருத்துவக்கல்லூரியின்ஷெல்கண்மருத்துவமனையில்நடத்தப்படும்இந்தஆய்வுத்திட்டத்தில்பங்கேற்குமாறுநீங்கள்அழைக்கப்படுகிறீர்கள்.
இந்தஆய்வில்பங்கேற்பதாஇல்லையாஎன்பதைமுடிவுசெய்யஉங்களுக்குஉதவுவதற்காகஇந்தஆவணத்தின்தகவல்தரப்படுகிறது.
இந்தஆய்வில்நீங்கள்பங்கேற்பதாஇல்லையாஎன்பதைமுடிவுசெய்வதற்குமுன்னால்கீழேதரப்படும்தகவல்களைதயவுசெய்துகவனத்துடன்படித்துப்பாருங்கள்.
சந்தேகங்களைக்கேட்கநேரம்எடுத்துக்கொள்ளுங்கள்.
விரைவானமுடிவுஎடுக்கவேண்டும்என்றுவேகமாகவோகட்டாயத்தின்கீழோசெய்யவேண்டாம். இந்தஆய்வில்பங்கேற்பதன்நன்மைகள், இடர்ப்பாடுகள்பற்றிநீங்கள்தெளிவாகப்புரிந்துகொள்ளவேண்டும்.
அப்போதுதான்உங்களுக்குச்சரியானதொருமுடிவைநீங்கள்எடுக்கமுடியும்.
இந்தச்செயல்முறைக்குத்'தகவலறிந்தஒப்புதல்' என்றுபெயர்.
இந்தஆய்வில்பங்கேற்கமறுப்பதோ,
இதிலிருந்துவிலகுவதோஎவ்விததண்டனைக்கும்இட்டுச்செல்லாது.
அல்லதுபுலனாய்வாளர்கள்மற்றும்நிறுவனத்துடன்உங்கள்தொடர்புகளைஎவ்விதத்திலும்பாதிக்காது.

இந்தஆய்வின்நோக்கம்என்ன?
கழிந்துசெல்லும்தொகையினருள்கருவிழிப்புண்கொண்டநோயாளிகள்அந்நோயைப்பொறுத்தமட்டில்எவ்விதஅறிவு, மனப்பான்மை, நடப்புகளைவைத்திருக்கிறார்கள்என்பதைஎங்கள்ஆய்வுமதிப்பிடும்.

நான்ஏன்இதற்கெனஅழைக்கப்பட்டுள்ளேன்?
வேலூரில்வசிப்பவர்என்றதகுதியைநீங்கள்பூர்த்திசெய்வதால்உங்களைஅழைத்துள்ளோம்.

நான்இதில்பங்கேற்றால்என்னநிகழும்?
இந்தஆய்வில்நீங்கள்பங்கேற்றால்ஒருவினாநிரலின்கேள்விகளுக்குநீங்கள்விடையளிக்குமாறுகேட்டுக்கொள்வோம்.

பங்கேற்பதனால்சாத்தியமாகும்நன்மைகள்என்ன?

கருவிழிப்படலப்புண்பற்றியபுரிதல்உங்களுக்குஏற்படும்.
உங்களுக்குஅதுஇருக்குமோஎன்றசந்தேகம்உண்டானால்,
உங்களால்ஒருமூன்றாம்நிலைப்பராமரிப்புமையத்திலிருந்துஉதவிபெறமுடியும்.
காலதாமதாகசிகிச்சைக்குவருவதனால்ஏற்படும்கூடுதலானசிக்கல்களைஇதுகுறைக்கும். மேலும்இந்தஆய்வில்நீங்கள்பங்கேற்பதனால், எதிர்காலநோயாளிகளுக்குஉதவக்கூடியவாறுஇன்றையவிழிப்புணர்வுநிலையில்அதனைஅதிகமாக்குகின்றகல்வித்திட்டங்களில்தேவையானமாற்றங்களைஏற்படுத்துதற்குமுடியும்.
இந்தஆய்வில்பங்கேற்பதால்உடனடியானஆதாயங்களோபணவருமானமோகிடைக்கஇயலாது.

பங்கேற்பதால்ஏதேனும்சிக்கல்கள்எழச்சாத்தியம்உண்டா?
இந்தஆய்வில்பங்கேற்பதால்எவ்விதஇடர்ப்பாடுகளும்ஏற்படவாய்ப்பில்லை.
நாங்கள்சேகரிக்கும்உங்கள்சொந்தத்தகவல்கள்கண்டிப்பாகஇரகசியமாகவைக்கப்படும். தகவல்கள்அடிப்படையிலானவிளக்கங்கள்மட்டுமேவெளியிடப்படும்.

ஏதேனும்பிரச்சினைஉண்டானால்என்னசெய்வது?
இந்தஆய்வின்போதுஉங்களைஎவரேனும்அணுகுவதிலோசிகிச்சைதருவதிலோஎந்தவிஷயத்திலேனும்நீங்கள்புகார்அளிக்கநினைத்தால்,
நீங்கள்முதன்மைப்புலனாய்வாளரை, அல்லதுஆய்வுஅலுவலகம், கார்மன்பிளாக், பாகாயம், வேலூர்-632002என்றமுகவரிக்குத்தொடர்புகொள்ளலாம்.
அல்லதுresearch@cmcvellore.ac.in or researchothers@cmcvellore.ac.in என்றமுகவரிக்குமின்னஞ்சல்செய்யலாம். தொலைபேசிஎண்0416-2284294.

இந்தஆய்வைமீள்நோக்குச்செய்தவர்யார்?
வேலூர்கிறித்துவமருத்துவக்கல்லூரியின்நிறுவனமேற்பார்வைக்கழகம் (ஐஆர்பி) இதனைமீள்நோக்குச்செய்துள்ளது.
இந்தஆவணத்தில்கையெழுத்திடுவதன்மூலம்ஆய்வுக்குழுப்புலனாய்வாளர்கள்நீங்கள்தரும்தகவல்களைப்பகுப்பாய்வுசெய்யஅனுமதிதருகிறீர்கள்.
இந்தஆய்வில்பெறப்படும்தகவல்கள்அறிவியல்சஞ்சிகைகளிலோஅறிவியல்கூட்டங்களிலோஅளிக்கப்பட்டால்அவைஉங்கள்அடையாளத்தைவெளிப்படுத்தாது.
இந்தத்தகவல்களைப்படித்தமைக்குநன்றி.

நீங்கள்ஆய்வில்பங்கேற்கவிரும்புவீர்களானால்இத்துடன்இணைக்கப்பட்டுள்ளஒப்புதல்படிவத்தில்அன்புகூர்ந்துகையொப்பமிடவும்.

தொடர்புக்கானநபர் (முதன்மைப்புலனாய்வாளர்)
ஜே. அஜய்சந்தோஷ்டேவிட்
கண்மருத்துவத்துறை, ஷெல்வளாகம்.,

கிறித்துவ மருத்துவக் கல்லூரி, வேலூர்.
தொலைபேசி எண்: 9994472922, ajay2santa@gmail.com.

ANNEXURE 5: INFORMED CONSENT FORM

Title of Research Project: : knowledge attitude practice of corneal ulcer an observational cross sectional study

Study Number: _____

Subject's Initials: _____ Subject's Name_____

Date of Birth / Age: _____

(Subject) (i) I confirm that I have read and understood the information sheet dated _____ for the above study and have had the opportunity to ask questions. [ ]

(ii) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. [ ]

(iii) I understand that the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published. [ ]

(iv) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s). [ ]

(v) I agree to take part in the above study. [ ]

Signature (or Thumb impression) of the Subject/Legally Acceptable

Date: _____/_____/_____

Signatory's Name: _____ Signature:

Or

Representative: _____

Date: _____/_____/_____

Signatory's Name: _____

Signature of the Investigator: _____

Date: _____/_____/_____

Study Investigator's Name: _____

Signature or thumb impression of the Witness: _____

Date: _____/_____/_____

Name & Address of the Witness: _____

<u>ஒப்புதல் படிவம்</u>

ஆய்வுத்தலைப்பு: அறிவு, அணுகுமுறை மற்றும் கார்னியல் புண்ணின் நடைமுறை. ஒரு குறுக்கு வெட்டு கண்காணிப்பு ஆய்வு .

***ஆய்வு எண்*: _____**
***பங்கேற்பவரின் தலைப்பெழுத்துகள்*: _____**
***பங்கேற்பாளர் பெயர்*: _____**
***பிறந்த தேதி / வயது*:_____**

(நோயாளி)

(i) மேற்கண்ட ஆய்வுக்கு _____தேதியிட்ட தகவல் தாளை நான் படித்துப் புரிந்துகொண்டேன் என்பதையும் கேள்விகளைக் கேட்கும் வாய்ப்பையும் பெற்றுள்ளேன்என்பதை உறுதிப்படுத்துகிறேன். [ ]

(ii) ஆய்வில் நான் பங்கேற்பது சொந்த ஆர்வத்தினால் என்பதையும், எந்த காரணமும்தெரிவிக்காமல், எந்த நேரத்திலும் நான் ஆய்வில் இருந்து விலகிக்கொள்ள உரிமைஉள்ளது என்பதையும், இதனால் எனது மருத்துவ கவனிப்பு அல்லது சட்ட உரிமைகள்பாதிக்கப்படாது என்பதையும் நான் புரிந்து கொள்கிறேன். [ ]

(iii) நடப்பு ஆய்வு மற்றும் அது குறித்து கூடுதலாக மேற்கொள்ளப்படும் எந்தவொரு ஆராய்ச்சிக்கும் பொருந்தக்கூடிய என் உடல்நலம் பற்றிய பதிவுகளை பார்க்க, இந்த ஆய்விலிருந்து நான் விலகியிருந்தாலும் கூட நெறிமுறைக் குழு மற்றும் ஒழுங்குமுறை அதிகாரிகளுக்கு என் அனுமதி தேவையில்லை என்று நான் புரிந்து கொள்கிறேன். இந்த அணுகலை நான் ஏற்கிறேன். இருப்பினும், எனது அடையாளம் பற்றிய தகவல்கள் மூன்றாம் தரப்பினருக்கு வெளியிடப்பட மாட்டாது என்பதை நான் புரிந்து கொள்கிறேன்.[ ]

(iv) இந்த ஆய்விலிருந்து கிடைக்கும் எந்தவொரு தரவு அல்லது முடிவுகளின்பயன்பாட்டை அறிவியல் நோக்கத்திற்காக மட்டும் பயன்படுத்தப்படுவதை நான்கட்டுப்படுத்த மாட்டேன் என்று ஒப்புக்கொள்கிறேன். [ ]

(v) மேற்கண்ட ஆய்வில் பங்கேற்க ஒப்புக்கொள்கிறேன். [ ]

ஆய்வில் பங்கேற்பவரின் / சட்டபூர்வமாக ஏற்றுக்கொள்ளக்கூடிய அவரது பிரதிநிதியின் கையொப்பம் (அல்லது கட்டைவிரல் ரேகைப்பதிவு)

நாள்: _____/_____/_____

கையொப்பமிட்டவரின் பெயர்: _____

கையொப்பம்:

அல்லது

பிரதிநிதி: _____

நாள்: _____/_____/_____

கையொப்பமிட்டவரின் பெயர்: _____

புலனாய்வாளரின் கையொப்பம்: _____

நாள்: _____/_____/_____

புலனாய்வாளரின்பெயர்: _____

சாட்சியின் கையொப்பம்அல்லது கட்டைவிரல் பதிவு: _____

நாள்: _____/_____/_____

சாட்சியின் பெயர்மற்றும்முகவரி: _____

ANNEXURE 6 : PROFORMA

KAP OF CORNEAL ULCER

Initial (optional)

Age:	Gender: M/F	Phone No: (optional)		
Diabetes Y /N	Occupation:			
Residence:		Urban	Urban Slums	Slums

KNOWLEDGE

1. What diseases in the eye can cause pain with redness and decreased vision? (Tick if subject volunteers answer)

a. Corneal ulcer	1
b. Conjunctivitis	0
c. Infection after cataract surgery	1
d. Trauma	1
e. Others (glaucoma/uveitis)	1
f. Others (irrelevant)	0
g. Don't know	-1

2. Do you know what a corneal ulcer is?

a. Yes	1
b. No	-1

If Yes to Question 2, administer Questions 3- 17.(If No (even after a brief explanation), go to Attitude section

3. What are the symptoms of a corneal ulcer?(Tick if subject volunteers answer)

a. Pain	1
b. Redness	1
c. Decrease in vision	1
d. Swelling	1
e. White spot	1
f. Photophobia	1
g. Watering	1
h. Others	
i. Don't know	0

4. Do you know what can lead to corneal ulcer? (Tick if subject volunteers answer)

a. injury with twigs	1
b. swimming in village ponds?	1
c. incorrect use of contact lens	1
d. Injury with Dust/soil/foreign bodies	1
e. Cow-tail	1
f. Others	
g. Don't know	0

5. Who are the people more at risk for corneal ulcer? (Tick only if subject volunteers answer

a. Everybody	0
b. Elderly	1
c. Poorly nourished	1

d.	People who work on farms	1
e.	Diabetics	1
f.	Quarry workers	1
g.	Contact lens wearer	1
h.	Others	

6. Can corneal ulcers spread from one person to the next?

a.	Yes	-1
b.	No	1
c.	Don't know	0

7. What damage can a corneal ulcer do to the eye? (Tick only if subject volunteers answer)

a.	Decreased vision	1
b.	Loss of the eyeball	1
c.	Retinal disease	0
d.	Blindness	1
e.	White spot in eye	1
f.	Others	
g.	Don't know	0

8. Do most corneal ulcers heal without any treatment?

a.	Yes	-1
b.	No	1
c.	Don't know	0

9. If No; when should treatment start? (If Yes, skip to next question)

a.	Immediately	1
b.	If other home remedy measures do not reduce symptoms in 2-3 days	0
c.	Only if symptoms become significantly worse	-1
d.	Don't Know	0
e.	Others	

10. Who can treat corneal ulcer?

a.	Anybody	-1
b.	Any doctor	0
c.	Only Eye doctor	1
d.	Traditional doctors	-1
e.	Others	
f.	Don't know	0

11. How is a corneal ulcer treated?

a.	Medicines from an eye doctor	2
b.	Spectacles	1
c.	Native medicines	-1
d.	Black magic (Mandhrams)	-1
e.	Others	

f. Don't know	0

12. How long does it usually take for a corneal ulcer to heal?

a. 1-2 days	0
b. 1 - 6 weeks	1
c. 3- 6 months	0

13. Following any corneal ulcer, the method to completely restore vision is by using spectacles.

a. Yes	-1
b. No	1
c. Don't know	0

14. Do you know what a corneal transplantation is?

a. Yes	1
b. No	0

15. If Yes, can it be done to improve vision after a corneal ulcer?
(If No, skip to Attitude section.)

a. Yes	1
b. No	0

Attitude:

1. I do not think my diet has anything to do with getting an infection in my body.

a. Agree	-1
b. Disagree	1
c. Don't know	0

2. If you developed redness, pain and watering in the eye, who of the following do you think is it ok to consult? (Tick all options that the subject agrees to)

a. A general physician,	1
b. An Eye doctor	2
c. A local chemist for medicines	-1
d. A traditional medicine person	-2
e. Others (black magic/plant juices/licking/etc)	-2

3. (If I ever had a corneal ulcer,) I feel that Postponing treatment as much as possible would be more convenient and less expensive.

a. Agree	-1
b. Disagree	1
c. Don't know	0

4. (If I ever had a corneal ulcer,) Once the symptoms of any eye problems have reduced, and I am comfortable, I do not feel regular follow up would be necessary unless symptoms worsen again.

a. Agree	-1
b. Disagree	1
c. Don't know	0

5. (If I ever had a corneal ulcer,) I feel that it would be Ok to stop treatment on my own when my symptoms improve.

a. Yes	-1
b. No	1
c. Don't know	0

6. (If I ever had a corneal ulcer,) I feel that it would be Ok to keep changing to different eye doctors if I do not feel better in 1-2 days

a. Yes	-1
b. No	1
c. Don't know	0

7. If I developed pain, redness and watering in my eye, I would use over the counter drugs before meeting a doctor.

a. Agree	-1
b. Disagree	1
c. Don't know	0

8. I would be ashamed of using / would find it inconvenient to use protective glasses if I were working in dusty places like a mill or quarry or field.

a. Agree	-1
b. Disagree	1
c. Don't know	0

Practice:

1. Do you do anything to protect your eyes and so reduce the risk of corneal ulcer?

a. Yes	1
b. No	0

2. If Yes, What? If No skip to Q3

a. Dark Glasses	1
b. Visor/ Helmet with visor	1
c. Spectacles	1
d. Protective glasses	1
e. Good diet	1
f. Others	

3. Have you / any relatives used any native methods for treatment of an eye disease?

a. Yes	0
b. No	1

4. If Yes, what? If No, skip to Q 5

a.	Breast milk	-1
b.	Plant juices	-1
c.	Coconut oil	-1
d.	Black Magic (Mandhrams)	-1
e.	Licking eye with tongue	-1
f.	Others	

5. Do you use regular eye drops daily suggested by the pharmacy shop workers to protect your eyes from eye problems?

a.	Yes	-1
b.	No	0

6. If Yes, For What?

a.	Dryness	0
b.	For Strength	-1
c.	Others	

7. Would you go **only** to an eye-specialist for all your eye-related problems

a.	Yes	1
b.	No	0

8. Who would you **first** go to if you developed redness, pain and watering in the eye?

a.	A general physician,	1
b.	An Eye doctor	2
c.	To get medicines from a local chemist	-1
d.	A traditional medicine person	-2
e.	Others (black magic/plant juices/licking/etc)	-2

9. How soon would you seek treatment from an Eye doctor?

a.	Immediately	1
b.	If other measures do not reduce symptoms in 2-3 days	0
c.	Only if symptoms become significantly worse	-1
d.	I would never go to an eye doctor	-1
e.	Don't Know	0
f.	Others	

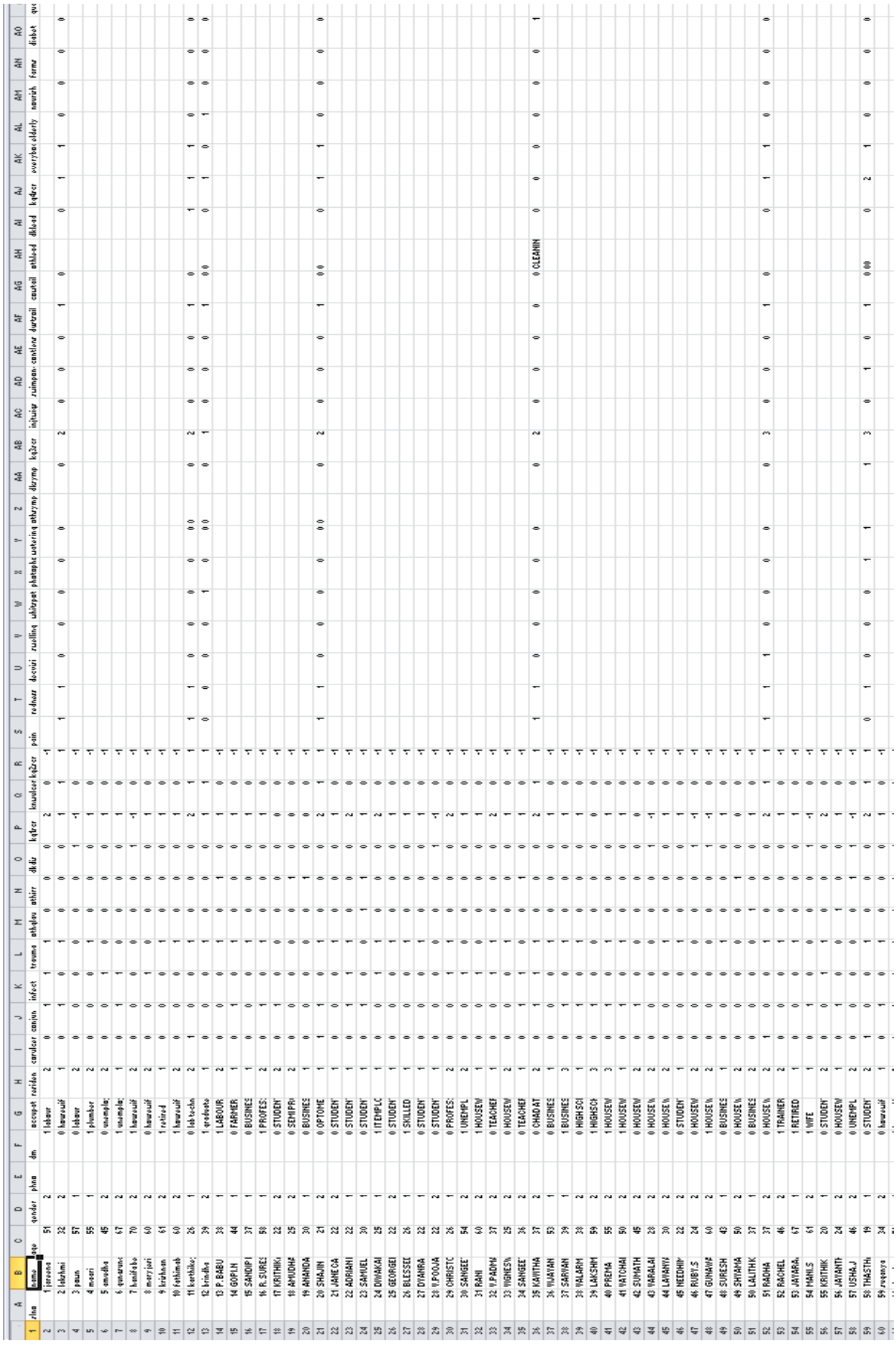
10. I will check that my blood sugars are controlled if I ever get a corneal ulcer.

a.	Strongly Agree	2
b.	Agree	1
c.	Don't know	0
d.	Disagree	-1
e.	Strongly Disagree	-2

Do you feel health education on corneal ulceration from our hospital is lacking and should be improved?

a.Yes	
b.No	

ANNEXURE 7: DATA ENTRY SHEET



	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD
1	quarry	lonruwar	athrirk	kq5rcr	zpread	kq6rcr	virian	eblazz	retinal	blind	eyezpat	atheye	dkeye	kq7rcr	healuat	kq8rcr	treatyar	athtreat	kq9rcr	treatulc	athtulc	kq10rcr	eyedact1	zpectt1	natmedt	blkmaqtf	dntknutf	athtreat	kq1brcr	healulce	kq12rcr	zpectulc	kq13rcr	transcar	tranzyar	knawarcr	diet	qenphy	eyedac	chomma	tradmed	at
2																																				1	1	0	2	0	0
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4																																				-2	1	0	2	0	0
5																																				0	1	0	2	0	0
6																																				0	0	0	2	0	0
7																																				0	1	0	2	0	0
8																																				-2	1	0	2	0	0
9																																				0	1	0	2	0	0
10																																				0	1	0	2	0	0
11																																				0	0	0	2	0	0
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17																																				0	1	0	2	0	0
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19																																				-1	0	1	0	0	0
20																																				-1	1	0	2	0	0
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23																																				1	1	0	2	0	0
24																																				0	1	0	2	0	0
25																																				1	1	0	2	0	0
26																																				0	1	0	2	0	0
27																																				0	1	0	2	0	0
28																																				0	1	1	2	0	0
29																																				-2	1	0	2	0	0
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32																																				0	1	0	2	0	0
33																																				1	1	0	2	0	0
34																																				0	0	0	2	0	0
35																																				0	1	0	2	0	0
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37																																				0	1	1	0	0	0
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39																																				0	1	0	2	0	0
40																																				-1	1	0	2	-1	0
41																																				0	1	0	2	-1	0
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43																																				-1	0	0	2	-1	0
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55																																				-2	1	0	2	0	0
56																																				1	1	0	2	0	0
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60																																				0	1	1	2	0	0

	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS
1	athpain	aq2rcr	partroat	roqfup	ztaptrt	chandac	dovpain	arhamed	attitudo	pratoct	pq1rcr	darkqlr	holmet	zpoctp2	pratqlr	qnaddlot	athprat	pq2rcr	natured	pq3rcr	milk	juice	cacuail	blkmaq	licking	athmthd	pq4rcr	eyedrop	pq5rcr	drapyer	pq6rcr	eyerpoc	pq7rcr	qenphyp	eyedacp	chemme	tradmed	athpainp	pq8rcr	treatye	pq9rcr	b
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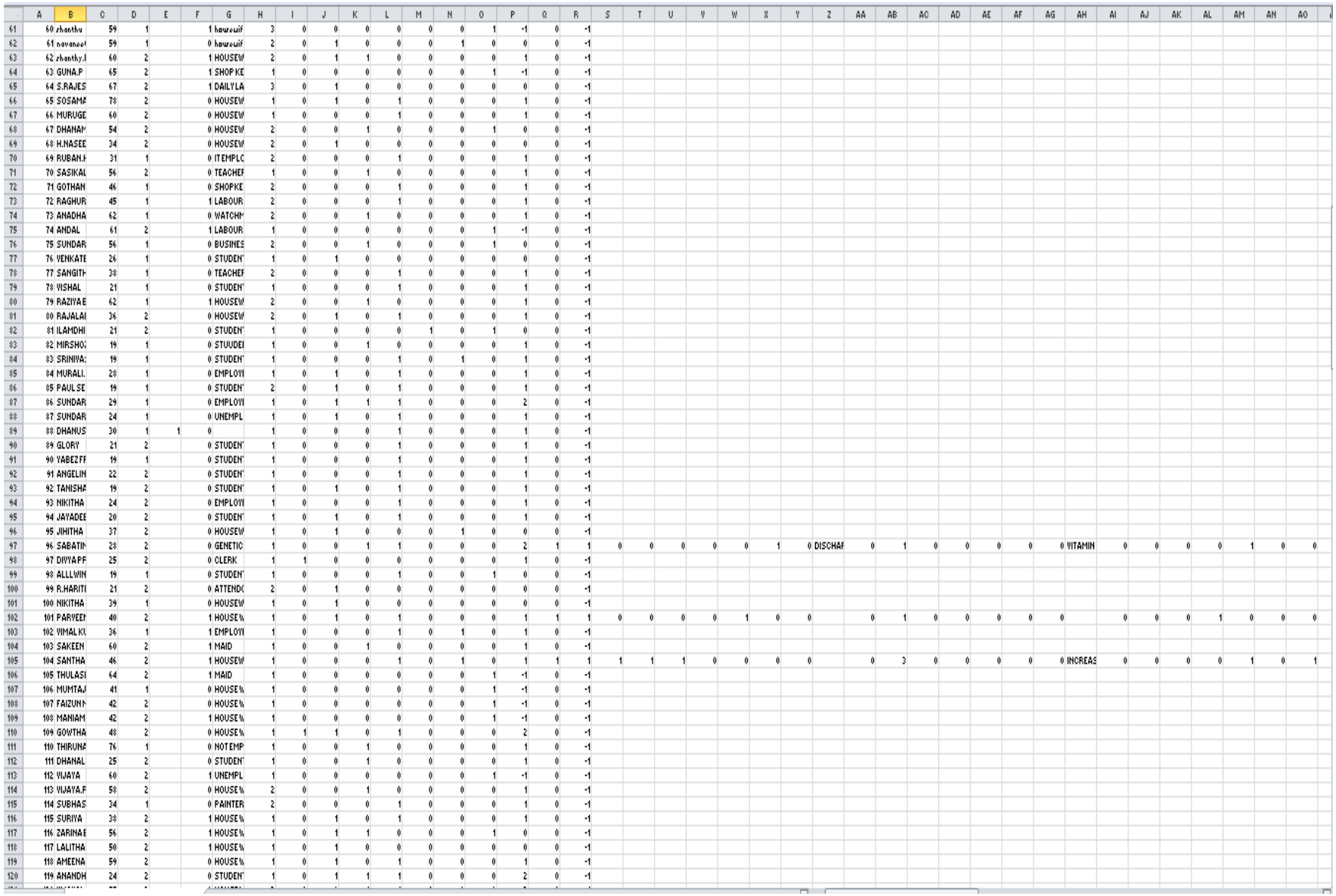

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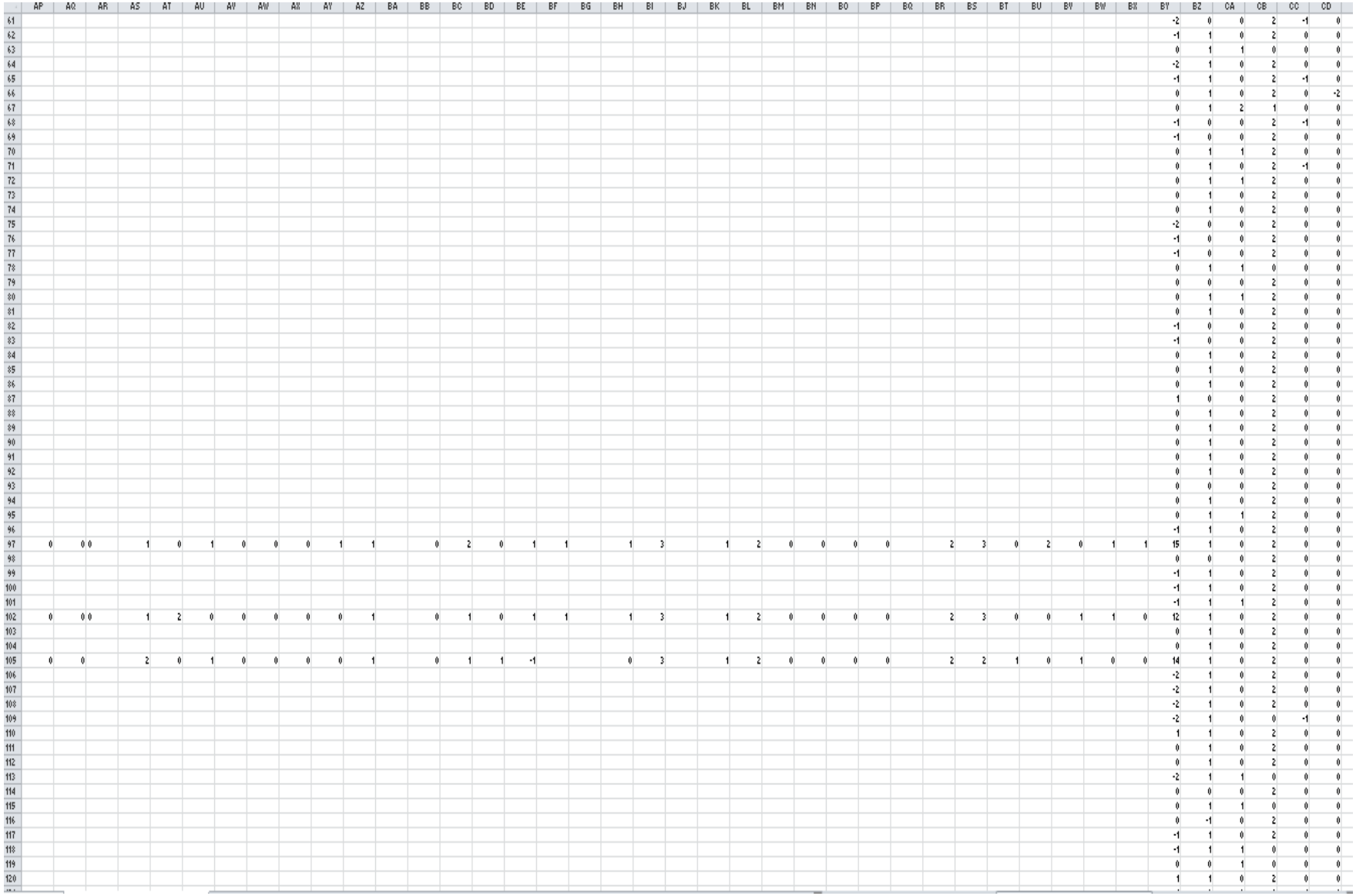

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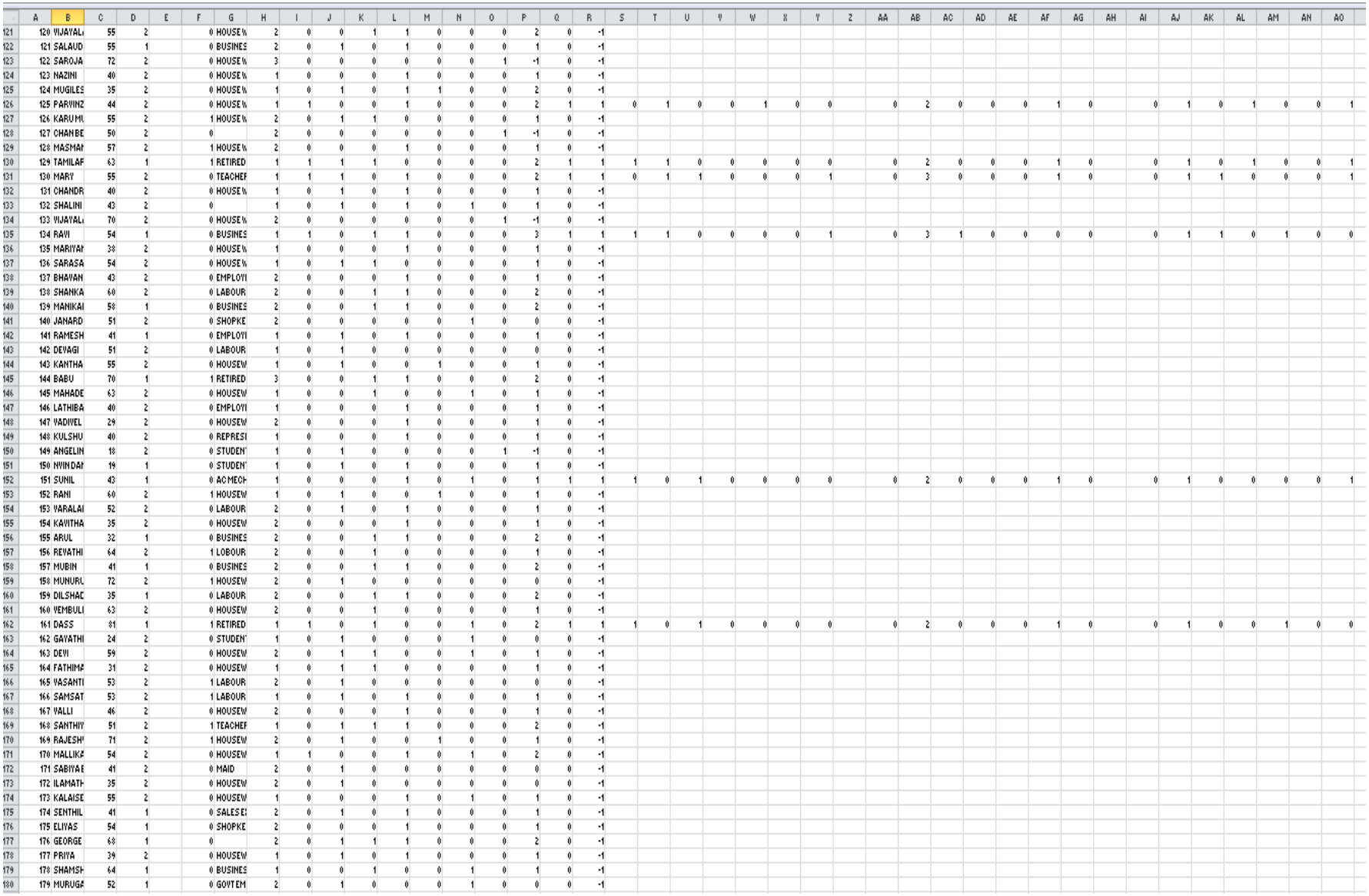

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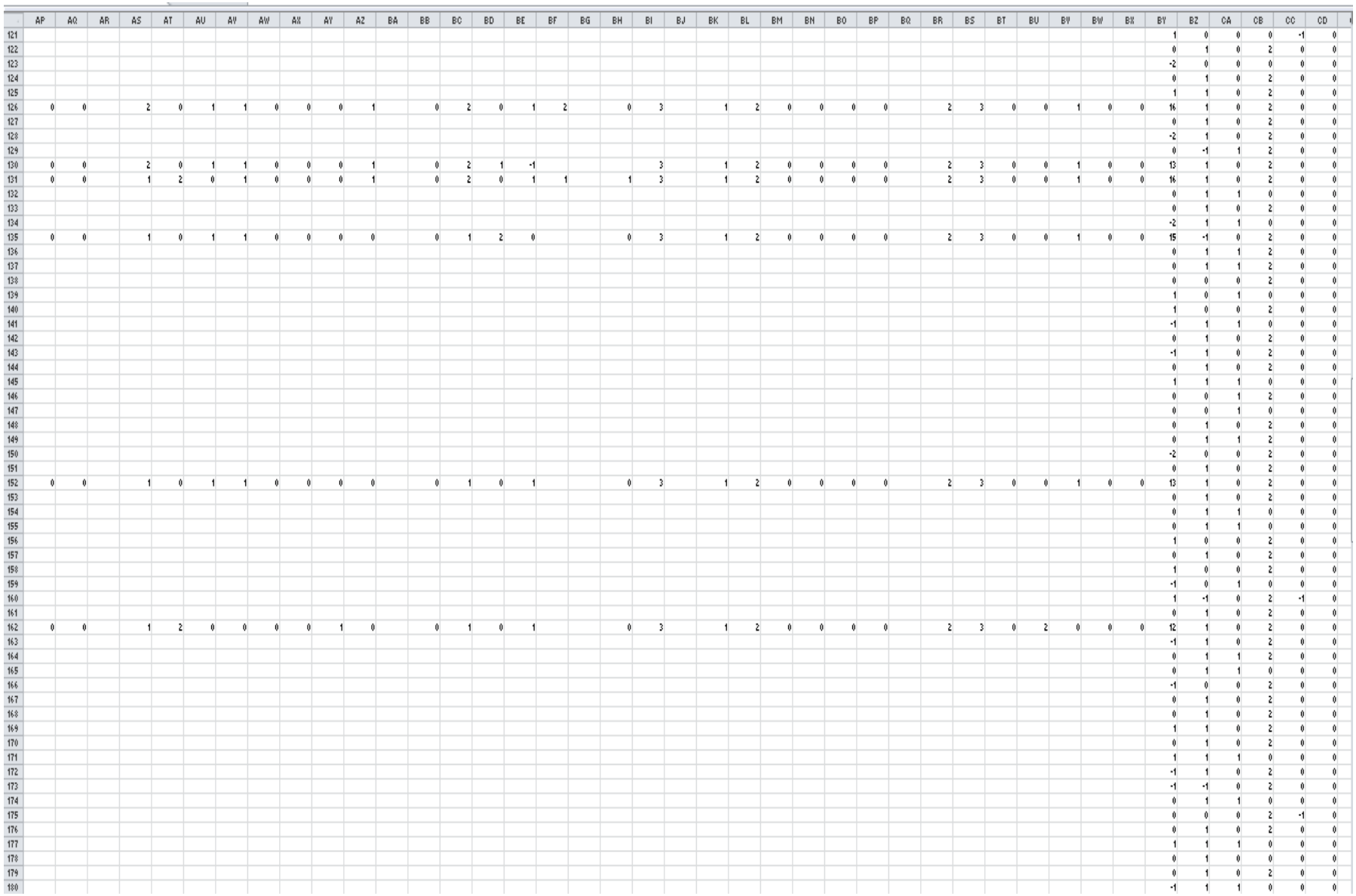

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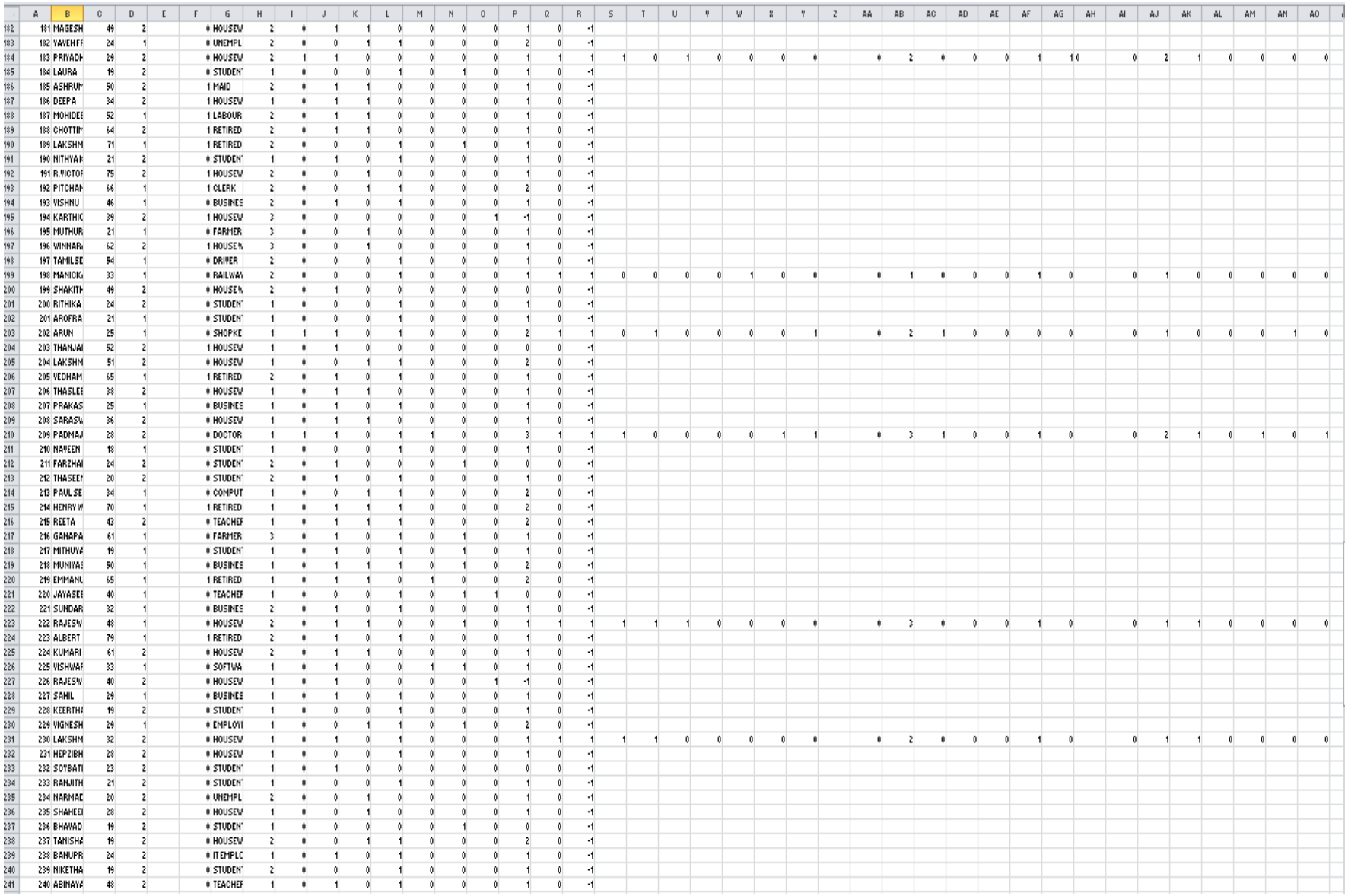

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219	218	MUNIYAS	50	1		0	BUSINES	1	0	1	1	1	0	1	0	2	0	-1																							
220	219	EMMANU	65	1		1	RETIRED	1	0	1	1	0	1	0	0	2	0	-1																							
221	220	JAYASEE	40	1		0	TEACHEF	1	0	0	0	1	0	1	1	0	0	-1																							
222	221	SUNDAR	32	1		0	BUSINES	2	0	1	0	1	0	0	0	1	0	-1																							
223	222	RAJESW	48	1		0	HOUSEW	2	0	1	1	0	0	1	0	1	1	1	1	1	1	0	0	0	0		0	3	0	0	0	1	0		0	1	1	0	0	0	0
224	223	ALBERT	79	1		1	RETIRED	2	0	1	0	1	0	0	0	1	0	-1																							
225	224	KUMARI	61	2		0	HOUSEW	2	0	1	1	0	0	0	0	1	0	-1																							
226	225	VISHWAF	33	1		0	SOFTWA	1	0	1	0	0	1	1	0	1	0	-1																							
227	226	RAJESW	40	2		0	HOUSEW	1	0	1	0	0	0	0	1	-1	0	-1																							
228	227	SAHIL	29	1		0	BUSINES	1	0	1	0	1	0	0	0	1	0	-1																							
229	228	KEERTHA	19	2		0	STUDEN	1	0	0	0	1	0	0	0	1	0	-1																							
230	229	VIGNESH	29	1		0	EMPLOYI	1	0	0	1	1	0	1	0	2	0	-1																							
231	230	LAKSHM	32	2		0	HOUSEW	1	0	1	0	1	0	0	0	1	1	1	1	1	0	0	0	0	0		0	2	0	0	0	1	0		0	1	1	0	0	0	0
232	231	HEPZIBH	28	2		0	HOUSEW	1	0	0	0	1	0	0	0	1	0	-1																							
233	232	SOYBATI	23	2		0	STUDEN	1	0	1	0	0	0	0	0	0	0	-1																							
234	233	RANJITH	21	2		0	STUDEN	1	0	0	0	1	0	0	0	1	0	-1																							
235	234	NARMAD	20	2		0	UNEMPL	2	0	0	1	0	0	0	0	1	0	-1																							
236	235	SHAHEEI	28	2		0	HOUSEW	1	0	0	1	0	0	0	0	1	0	-1																							
237	236	BHAVAD	19	2		0	STUDEN	1	0	0	0	0	0	1	0	0	0	-1																							
238	237	TANISHA	19	2		0	HOUSEW	2	0	0	1	1	0	0	0	2	0	-1																							
239	238	BANUPR	24	2		0	ITEMPLO	1	0	1	0	1	0	0	0	1	0	-1																							
240	239	NIKETHA	19	2		0	STUDEN	2	0	0	0	1	0	0	0	1	0	-1																							
241	240	ABINAYA	48	2		0	TEACHEF	1	0	1	0	1	0	0	0	1	0	-1																							

	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD
82																																				0	0	1	0	0	0
83																																				1	1	0	2	0	0
84	0	0		0	0	1	1	0	0	0	0		0	1	1	-1			0	3		1	2	0	0	0	0		2	3	0	0	1	0	0	11	1	1	0	0	0
85																																				0	1	1	0	0	0
86																																				0	1	0	2	0	0
87																																				0	1	1	0	0	0
88																																				0	1	0	2	0	0
89																																				0	1	0	2	0	0
90																																				0	1	0	2	0	0
91																																				0	1	1	2	0	0
92																																				0	0	0	2	0	0
93																																				1	1	1	0	0	0
94																																				0	1	0	2	0	0
95																																				-2	1	1	0	0	0
96																																				0	1	1	0	0	0
97																																				0	-1	0	0	1	0
98																																				0	1	0	2	0	0
99	1	0		1	2	0	0	0	0	0	1	0		0	1	2	0	2		0	3		1	2	0	0	0	0		2	1	0	2	0	0	0	9	1	0	2	0	0
100																																				-1	1	0	2	0	0
101																																				0	1	0	2	0	0
102																																				0	1	0	2	0	0
103	0	0		1	0	1	1	0	0	0	0		0	1	2	0			0	3		1	2	0	0	0	0		2	3	0	2	0	0	0	12	1	0	2	0	0
104																																				-1	1	0	0	-1	0
105																																				1	0	0	2	0	0
106																																				0	1	0	2	0	0
107																																				0	1	0	2	0	0
108																																				0	1	1	0	0	0
109																																				0	0	0	2	0	0
110	0	0		2	0	1	0	0	0	1	1		0	2	0	1			0	3		1	2	0	0	0	0		2	3	0	0	1	1	1	21	1	0	2	0	0
111																																				0	1	1	0	0	0
112																																				-1	0	0	2	0	0
113																																				0	1	1	2	0	0
114																																				1	-1	0	2	0	0
115																																				1	0	0	2	0	0
116																																				1	1	0	2	0	0
117																																				0	0	1	0	-1	0
118																																				0	1	1	2	0	0
119																																				1	1	0	2	0	0
120																																				1	0	0	2	0	0
121																																				-1	0	1	2	0	0
122																																				0	1	0	2	0	0
123	0	0		0	2	0	1	0	0	0	0		0	1	0	1	1		1	3		1	0	1	0	0	0		1	1	0	0	1	0	0	12	1	0	2	0	0
124																																				0	1	1	2	0	0
125																																				0	0	1	2	0	0
126																																				0	1	1	2	0	0
127																																				-2	0	1	2	0	0
128																																				0	0	0	2	0	0
129																																				0	1	0	2	0	0
130																																				1	1	1	0	0	0
131	0	0		0	0	1	0	0	0	1	0		0	1	1	-1			0	3		1	2	0	0	0	0		2	3	0	0	1	0	0	10	1	0	2	0	0
132																																				0	1	0	2	0	0
133																																				-1	1	0	2	0	0
134																																				0	1	0	2	0	0
135																																				0	1	1	0	0	0
136																																				0	1	1	0	0	0
137																																				-1	1	0	2	0	0
138																																				1	1	1	0	0	0
139																																				0	1	0	2	0	0
140																																				0	1	0	2	0	0
141																																				0	1	0	2	0	0

	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS
182	0	1	1	1	-1	-1	1	1	3	1	1	0	0	1	0	0		1	0	1								0	0			1	1	1	0	0	0	0	1	2	
183	0	2	1	-1	0	-1	1	1	4	1	1	1	0	0	0	0		1	0	1								1	-1	0	0	1	1	1	0	0	0	0	1	2	
184	0	1	1	-1	0	1	-1	1	3	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
185	0	1	1	-1	1	-1	1	1	4	0	0								0	1								0	0			1	1	1	0	0	0	0	1	2	
186	0	2	1	1	-1	-1	1	1	5	0	0								1	0	0	-1	0	0	0		-1	0	0			0	0	0	2	0	0	0	2	2	
187	0	1	1	1	1	-1	1	1	6	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
188	0	2	1	1	0	1	-1	1	6	0	0								1	0	0	0	-1	0	0		-1	0	0			0	0	0	2	0	0	0	2	2	
189	0	2	1	-1	1	-1	1	-1	3	0	0								0	1								0	0			0	0	0	2	0	0	0	2	1	1
190	0	2	1	1	1	-1	-1	1	5	1	1	0	1	1	0	0		2	0	1								1	-1	0	0	0	0	1	0	0	0	0	1	2	
191	0	3	1	-1	1	-1	1	1	6	0	0								0	1								0	0			1	1	1	0	0	0	0	1	2	
192	0	2	1	1	0	-1	1	1	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
193	0	1	0	-1	1	1	1	1	5	1	1	0	0	1	0	0		1	0	1							0	0	0			0	0	1	0	0	0	0	1	2	
194	0	2	-1	1	1	1	0	1	6	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
195	0	1	1	0	1	0	1	1	6	0	0								0	1								0	0			1	1	0	0	-1	0	0	-1	1	1
196	0	1	1	1	-1	0	0	1	4	1	1	0	1	0	0	0		1	1	0	-1	0	0	0	0		-1	0	0		0	1	1	1	0	0	0	1	3	-1
197	0	1	1	0	0	0	0	1	2	1	1	0	0	1	0	0		1	1	0			-1				-1	0	0		0	0	0	0	0	-1	0	0	-1	2	0
198	0	2	1	-1	0	1	1	0	5	0	0								0	1								1	-1	0	0	1	1	0	2	0	0	0	2	2	
199	0	2	1	-1	1	1	0	1	6	1	1	1	0	0	0	0		1	0	1								0	0			1	1	1	0	0	0	0	1	2	
200	0	2	1	1	-1	1	1	0	6	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
201	0	2	1	-1	0	0	1	1	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
202	0	2	1	0	0	1	-1	-1	3	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
203	0	2	0	1	0	-1	1	1	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
204	0	-1	1	0	-1	-1	1	0	0	1	1	0	0	1	0	0		1	0	1								1	-1	9	0	0	0	0	0	-1	0	0	-1	2	
205	0	2	1	0	1	0	1	0	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
206	0	2	0	1	1	-1	1	1	6	0	0								1	0	-1	0	-1	0	0		-2	0	0			1	1	0	2	0	0	0	2	1	1
207	0	2	1	1	1	-1	1	-1	5	1	1	0	0	1	0	0		1	0	1								0	0			1	1	0	2	0	0	0	2	2	
208	0	1	1	1	1	-1	1	1	6	0	0								0	1								0	0			1	1	1	0	0	0	0	1	2	
209	0	2	1	0	0	1	0	1	5	1	1	0	0	1	0	0		1	1	0	-1	0	0	0	0		-1	0	0			1	1	0	2	0	0	0	2	2	
210	0	2	1	1	0	-1	0	1	5	1	1	0	0	1	0	0		1	0	1								0	0			0	0	0	2	0	0	0	2	2	
211	0	1	1	1	1	1	1	-1	6	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
212	0	2	1	-1	1	1	1	-1	4	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
213	0	3	1	1	1	1	1	-1	8	0	0								1	0	-1	0	0	0	0		-1	0	0			1	1	0	2	0	0	0	2	1	1
214	0	2	1	1	1	1	1	1	7	1	1	1	0	1	0	0		2	0	1								0	0			1	1	0	2	0	0	0	2	2	
215	0	2	1	1	1	-1	1	1	6	0	0								0	1								1	-1	0	0	1	1	0	2	0	0	0	2	1	1
216	0	2	1	-1	1	1	1	0	6	1	1	0	1	0	0	0		1	1	0	-1	0	-1	0	0		-2	0	0			1	1	0	2	0	0	0	2	1	1
217	0	0	1	0	1	-1	-1	0	0	1	1	1	0	0	0	0		1	0	1								1	-1	0	0	1	1	1	0	0	0	0	1	3	-1
218	0	3	0	-1	1	-1	1	1	5	1	1	0	0	1	0	0		1	1	0	0	0	0	0	0	CHUNNA	0	0	0			0	0	1	0	0	0	0	1	2	
219	0	2	1	1	-1	-1	1	1	5	1	1	0	0	1	0	0		1	0	1								1	-1	0	0	1	1	0	2	0	0	0	2	1	1
220	0	2	1	1	-1	1	1	1	6	1	1	0	0	1	0	0		1	0	1								1	-1	0	0	1	1	0	2	0	0	0	2	1	1
221	0	3	1	1	-1	1	1	0	6	1	1	1	0	0	0	0		1	0	1								0	0			1	1	0	2	0	0	0	2	1	1
222	0	2	1	1	0	-1	-1	1	4	1	1	0	1	0	0	0		1	0	1								0	0			1	1	1	2	0	0	0	3	1	1
223	0	2	1	1	1	-1	1	-1	5	1	1	0	1	0	0	0		1	0	1								0	0			1	1	0	2	0	0	0	2	1	1
224	0	3	1	-1	1	1	1	1	8	1	1	0	0	1	0	0		1	1	0	-1	0	-1	0	-1		-3	0	0			1	1	0	2	0	0	0	2	2	
225	0	3	1	-1	1	-1	1	1	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
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228	0	2	1	-1	1	-1	1	0	3	1	1	0	0	1	0	0		1	0	1								0	0			0	0	0	2	0	0	0	2	2	
229	0	2	1	1	0	1	0	1	7	1	1	0	0	1	0	0		1	0	1								0	0			1	1	0	2	0	0	0	2	2	
230	0	1	1	1	1	-1	1	1	6	0	0								0	1								0	0			0	0	1	0	0	0	0	1	2	
231	0	2	1	0	1	1	1	0	7	1	1	0	0	0	0	1		1	0	1								0	0			1	1	0	2	0	0	0	2	1	1
232	0	2	1	1	-1	-1	1	1	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
233	0	2	1	1	0	1	1	1	8	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
234	0	2	1	-1	0	-1	1	1	4	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
235	0	1	1	1	1	-1	1	1	6	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
236	0	1	1	-1	1	1	1	0	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
237	0	2	0	1	1	-1	1	-1	4	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	
238	0	1	1	1	1	-1	1	1	6	0	0								0	1								1	-1	0	0	0	0	1	0	0	0	0	1	2	
239	0	2	1	1	1	-1	1	1	7	1	1	0	0	1	0	0		1	0	1								0	0			1	1	0	2	0	0	0	2	2	
240	0	2	1	-1	1	-1	1	1	5	0	0								0	1								0	0			1	1	0	2	0	0	0	2	1	1
241	0	2	1	-1	1	0	0	-1	3	0	0								0	1								0	0			1	1	0	2	0	0	0	2	2	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
242	241	SANCHA	18	2		0	STUDEN	2	0	0	0	1	0	0	0	1	0	-1																							
243	242	LINCY VI	20	2		0	STUDEN	2	0	0	1	1	0	0	0	2	0	-1																							
244	243	KRISHNA	21	2		0	STUDEN	1	1	0	1	0	0	0	0	2	1	1	1	0	0	0	1	0	0		0	2	0	0	0	1	0	0		0	1	0	1	0	0	0
245	244	JISHA SU	22	2		0	STUDEN	1	0	0	0	1	0	0	0	1	0	-1																							
246	245	ALLWIN	48	1		0	BUSINES	1	0	0	1	0	0	0	0	1	0	-1																							
247	246	DILIPKUI	28	1		0	UNEMPL	1	0	1	0	0	0	0	0	0	0	-1																							
248	247	JEYADEE	19	2		0	STUDEN	1	0	0	0	1	0	0	0	1	0	-1																							
249	248	VIMAL	25	1		0	IT PERSO	1	0	0	1	1	0	0	0	2	0	-1																							
250	249	RAJALAI	49	2		1	HOUSEW	2	0	0	0	1	0	0	0	1	0	-1																							
251	250	PRIYA	19	2		0	STUDEN	1	0	0	0	1	0	0	0	1	0	-1																							
252	251	BHANU K	37	1		0	BUSINES	1	0	0	1	0	0	0	0	1	0	-1																							
253	252	MEGHAN	42	1		0	DRIVER	2	0	1	0	1	0	0	0	1	0	-1																							
254	253	JACOB	59	1		1	PASTOR	2	0	1	0	0	0	0	0	0	0	-1																							
255	254	K.KARUI	55	1		0	BUSINES	3	0	0	1	0	0	0	0	1	0	-1																							
256	255	REGINOL	54	1		1	PRIEST	1	0	0	1	1	0	0	0	2	0	-1																							
257	256	BALAJI S	43	1		0	BUSINES	2	0	1	1	1	0	0	0	2	0	-1																							
258	257	SHANMU	64	1		1	DRIVER	1	0	1	1	0	0	0	0	1	0	-1																							
259	258	DAMODA	63	1		1	MILITARY	1	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0		0	1	0	0	0	0	0
260	259	MALLIGA	59	2		0	HOUSEW	2	0	0	1	0	0	0	0	1	0	-1																							
261	260	SIVAKUI	46	1		1	EX-SERV	3	0	0	0	1	0	0	0	1	0	-1																							
262	261	KALAIVA	61	2		1	HOUSEW	2	0	0	1	0	0	0	1	0	0	-1																							
263	262	PERIYAR	48	1		1	LABOUR	3	0	0	0	0	0	1	0	0	0	-1																							
264	263	P S NATA	63	1		1	RAILWAY	2	0	0	1	1	0	0	0	2	0	-1																							
265	264	MURUGE	38	1		0	SANITAF	2	0	0	1	1	0	0	0	3	0	-1																							
266	265	THAYASI	40	2		0	H.WIFE	2	0	0	0	1	0	0	0	1	0	-1																							
267	266	VENKATE	61	1		1	DRIVER	1	0	0	1	0	0	0	0	1	0	-1																							
268	267	PIYARE J	70	1		0	UNEMPL	1	0	0	1	0	0	0	0	1	0	-1																							
269	268	SHANTH	58	2		1	HW	2	0	0	0	0	0	1	0	0	0	-1																							
270	269	S.SHEEL	48	2		0	HW	1	0	0	1	0	1	0	0	2	0	-1																							
271	270	ARUMUG	46	1		0	DRIVER	1	0	0	0	1	0	0	0	1	0	-1																							
272	271	POONGA	59	2		1	HW	2	0	1	0	1	0	0	0	1	0	-1																							
273	272	YUVARA	19	1		0	UNEMPL	1	0	0	1	1	0	0	0	2	0	-1																							
274	273	SELVI.V	53	2		1	HW	1	0	0	1	0	0	0	0	1	0	-1																							
275	274	HARIKUI	46	1		0	BUSINES	1	0	0	0	0	0	0	1	-1	0	-1																							
276	275	AROCKIA	43	1		0	DRIVER	1	0	0	0	1	0	0	0	1	0	-1																							
277	276	VIJAYAS	59	1		1	AAVIN OF	1	0	0	0	0	0	0	1	-1	0	-1																							
278	277	S.SELVI	40	2		0	HW	2	0	0	0	0	0	0	1	-1	0	-1																							
279	278	MALLIGA	61	2		1	HW	1	0	1	0	1	0	0	0	1	0	-1																							
280	279	SANTHA	61	2		1	HW	3	0	0	0	0	0	0	1	-1	0	-1																							
281	280	RAVI K.K	66	1		1	LIC AGEN	1	0	0	1	0	0	0	0	1	0	-1																							
282	281	SUBRAM	65	1		0	ELECTRI	2	0	0	0	1	0	0	0	1	0	-1																							
283	282	ASHOK K	54	1		1	CONDUC	3	0	0	0	0	1	0	0	1	0	-1																							
284	283	ULLAIAH	59	1		1	BUSINES	2	0	0	1	0	0	0	0	1	0	-1																							
285	284	BHARAT	22	1		0	UNEMPL	3	0	0	0	1	0	0	0	1	0	-1																							
286	285	MUNIYAS	65	1		1	RETIRED	1	0	0	0	0	1	0	0	1	0	-1																							
287	286	VIJAYALA	39	2		0	HOUSEW	2	0	0	0	1	1	0	0	2	0	-1																							
288	287	A.V.SRIN	36	1		1	BANK MA	2	0	0	1	0	0	1	0	1	0	-1																							
289	288	MARGAN	59	1		0	LABOUR	3	0	0	0	1	0	0	0	1	0	-1																							
290	289	PARASU	65	1		1	CARPEN	3	0	0	0	0	0	0	1	-1	0	-1																							
291	290	JANARD	51	1		1	ELECTRI	3	0	0	0	0	0	0	1	-1	0	-1																							
292	291	SARADA	51	2		1	HW	3	0	0	1	0	0	0	0	1	0	-1																							
293	292	NARAYA	67	1		1	FARMER	2	0	0	0	0	0	1	0	0	0	-1																							
294	293	PRASAT	26	1		0	UNEMPL	2	0	0	0	1	0	0	0	1	0	-1																							
295	294	SEENAN	73	1		1	UNEMPL	3	0	0	1	0	0	0	0	1	0	-1																							
296	295	FATHIMA	61	2		1	LABOUR	2	0	0	1	0	0	0	0	1	0	-1																							
297	296	S.NEELA	74	2		1	H.W	3	0	0	0	1	0	0	0	1	0	-1																							
298	297	SETTU	48	1		0	LABOUR	3	0	0	1	1	0	0	0	2	0	-1																							
299	298	KRISHNA	78	1		1	UNEMPL	3	0	0	0	0	0	1	0	0	0	-1																							
300	299	JAMUNA	48	2		1	HW	1	0	0	0	0	1	0	0	1	0	-1																							
301	300	LAKSHM	43	2		0	SHOP KE	1	0	0	0	0	0	1	0	0	0	-1																							

	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD
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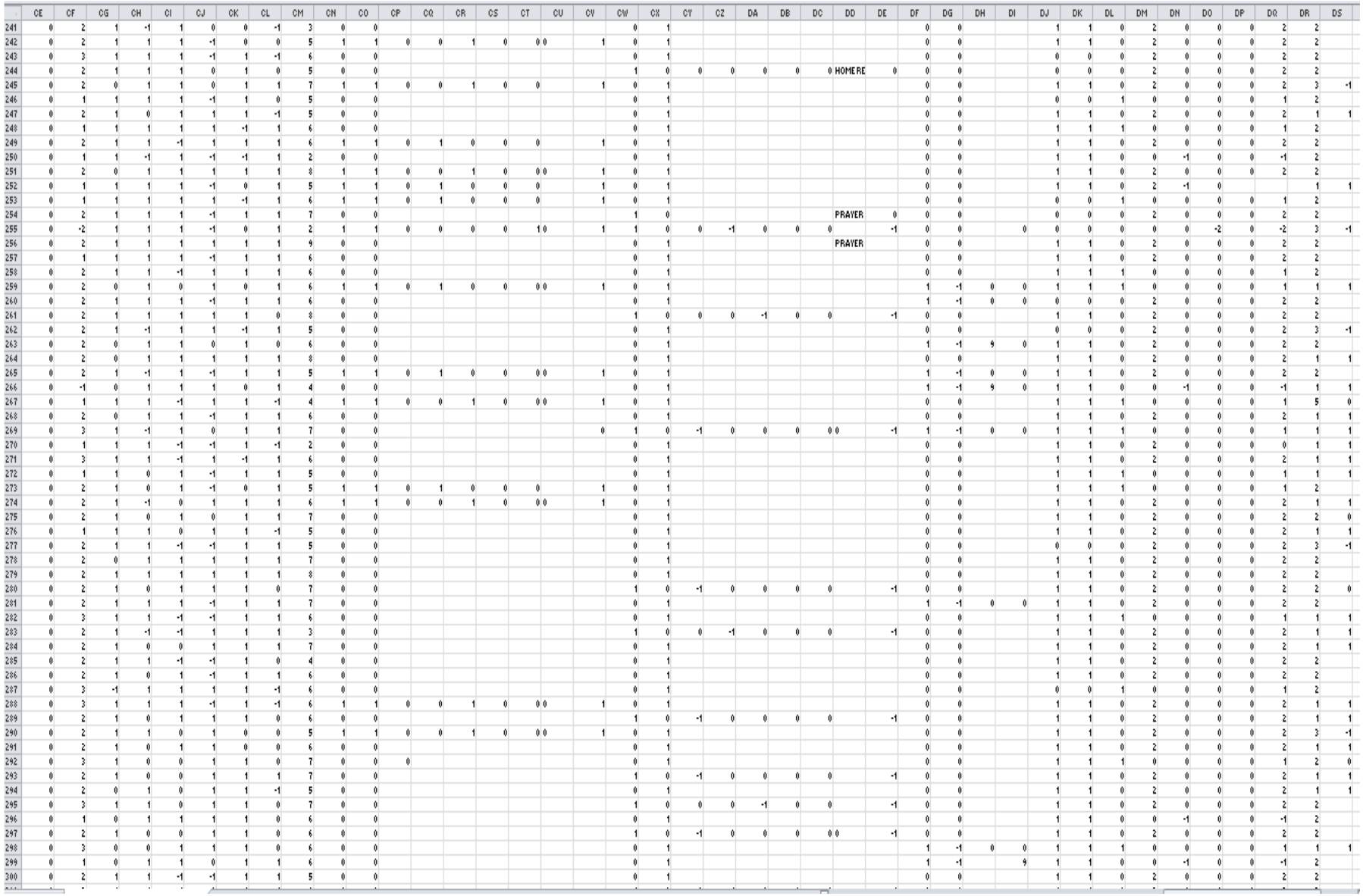

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