

**ACCESS TO EYE CARE SERVICES AMONG ELDERLY WOMEN
WITH VISUAL IMPAIRMENT IN VADAKARA BLOCK, KOZHIKODE DISTRICT**

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DECLARATION

I hereby declare that this dissertation titled “Access to Eye Care Services Among Elderly Women with Visual Impairment in Vadakara Block, Kozhikode District” is the bona fide record of my original research. It has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



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CERTIFICATE

Certified that the dissertation titled "Access to Eye Care Services Among Elderly Women with Visual Impairment in Vadakara Block, Kozhikode District" is a record of the research work undertaken by Dr. Anavadhya J Prakash in partial fulfilment of the requirements for the award of the degree of "Master of Public Health" under my guidance and supervision.



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GLOSSARY

WHA	World Health Assembly
GBD	Global Burden of Disease Study
NCD	Non-communicable disease
VI	Visual Impairment
WHO	World Health Organization
NPCB	National Programme for Control of Blindness
HOMES	Hyderabad Ocular Morbidity in Elderly Study
LASI	Longitudinal Ageing Study in India
ARMD	Age related macular degeneration
IAPB	The International Agency for the Prevention of Blindness
SRS	Sample registration system
PI	Principal Investigator
NFHS- 5	National Family Health Survey - 5
OBC	Other Backward Caste

ABSTRACT

Background

Blindness and visual impairment are significant global health issues, disproportionately affecting individuals in low- and middle-income countries, especially women and the elderly. In 2020, approximately 2.2 billion people remain affected, with 1 billion cases potentially preventable or treatable. In India, in the same time period data indicates 4.95 million blind individuals and 70 million with visual impairments, with women more affected due to factors like longevity and limited access to eye care. The study aimed to estimate prevalence of visual impairment (VI), cataract and cataract surgery utilization including barriers of undergoing surgery among women aged 60 and above in Kerala.

Method

A cross-sectional quantitative study was used. Prevalence was estimated by eye examination using Peek acuity app for VI and pen torch for cataract. A structure interview schedule was used to collect demographic, socio-economic information, morbidity profile and barriers to cataract surgery. 220 women aged 60 and above were surveyed from wards of 4 grama panchayats of Vadakara block, Kozhikode district.

Results

The prevalence of visual impairment (VI) and cataract was 47.7% with 95% CI (41.1 - 54.3) and 75.4% with 95% CI (69.7- 81.1) among women aged 60 and above. Among those recommended for cataract surgery, 73.1% proceeded, mainly through cooperative hospitals, yet 26.9% remained untreated despite medical advice. Key barriers included satisfaction with current vision, fear of surgery, caregiving responsibilities, and lack of support. These barriers vary across education and economic status.

Conclusion

The study revealed a higher prevalence of visual impairment and cataract, exposing burden of eye diseases among women aged 60 and above in Kerala. A substantial percent of those recommended surgery had undergone the procedure, but a notable percent had not. The main reason reported was women's role as primary care giver. Addressing social and specific barriers is vital to achieving equitable health outcomes and promoting healthy aging.

CHAPTER 1

INTRODUCTION

1.1 Background

Blindness and visual impairment due to various ocular diseases are a public health problem around the world. The Vision 2020 Global Initiative was launched intending to remove needless blindness and vision loss by controlling major causes of blindness, training professionals to provide eye care, creating infrastructure, and developing appropriate technology (Garms, 1998). In 2013, the World Health Assembly (WHA) launched a global action plan (Universal Eye Health: A Global Action Plan 2014-2019) towards universal eye care. The target was to achieve 25 percent reduction of prevalence of avoidable visual impairment from baseline data of 2010 by the year 2019 (Gupta and Kocur, 2014). Despite of all these efforts globally, in 2020, 2.2 billion people suffer because of visual impairment or blindness. Of these, visual impairment of 1 billion people could have been prevented or addressed (WHO, 2019). In 2020, there were around 5 million blind persons and 70 million visually impaired people in India (Mannava et al., 2022). The burden of eye sight related conditions disproportionally affect people in low-middle income countries, among older people and in women (WHO, 2019). The World over, by 2020, 295 million people were affected by moderate and severe vision impairment, of whom 163 million were female (Bourne et al., 2022). Countries around the world have a growing percentage of aging population, because of improved sociodemographic status and life expectancy. The longer average life expectancy of women when compared to men increases their risk of age-related eye diseases. There is a greater risk of diseases like cataract and trachoma among women living in low-

middle-income countries. It may be due to inequalities in vision loss and access to eye care services due to various socioeconomic and cultural factors which place women at higher risk (Adelson, J. et al, 2020).

Aging Population

The demographic transition of longer lives and smaller families has set a trend of population ageing worldwide. In 2022, there were 1.1 billion people aged 65 or above globally. The population is projected to rise to 16 percent in 2025 from 10 percent in 2022 (United Nations ,2022). This is expected to rise over the next 30 years even in countries with growing and relatively youthful populations. By mid-2030, the number of people aged 80 or above will be more than the number of infants (United Nations, 2024).

In India, 10.5 percent of the country's population which is 149 million persons were aged 60 years and above in 2022. By 2050, the proportion of older people will double and one in every 5 individuals will be elderly. The aging index measures the number of elderly per 100 children population, which is 39 in India as per 2021 estimates. The main challenges of an aging population are, women living longer than men creating sociocultural and economic deprivation and dependencies, a high proportion of rural elderly, and aging of the aged. Southern states like Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu were found to be the biggest contributors to the elderly population in India (Dey et al., 2012).

Feminization of aging reflects an extra 19 years lived by elderly women than 17.5 years for men at the age of 60 years for 2016 -2020. The longevity of women can be explained by genetic and hormonal factors. Genetic factors are heterogametic sex hypothesis, telomere attrition and mitochondrial inheritance. The role of sexual hormones like estrogen is central to reproductive theory of aging. Female longevity effect health profile and social well-being (Zetterberg,

2016). Higher life expectancy and incidence of widowhood among elderly women is resulting in women living alone with no income, fewer assets, and dependence. The reality of the ‘feminization of aging’ is often characterized by poverty, illiteracy, chronic malnutrition, marginalization, and social exclusion (Kaushik, 2021). During 2022- 2025, people aged 80 and above are expected to grow to 279 percent from 128 percent (2000-2022) with a dominance of highly dependent very old women. This comes with a burden of morbidity and disability. Therefore, the special needs of these very old women should policy making (U.N.F.P.A., 2023).

Health Profile and Health Seeking Behavior of Elderly

The change in population structure will cause a change in health profile of people. The prevalence of non-communicable diseases (NCDs) like cardiovascular disease, cancers, chronic respiratory diseases, diabetes and eyesight conditions increases with increasing age (Agarwal et al., 2020). As per NFHS 5, 5.1 percent of households have one or more people with disability across all age groups, highest in the age group of 75 years and above (Pattnaik et al., 2023).

Health-seeking behavior is less common in the elderly compared to people in younger age groups. In India, older women rarely seek care, indicating higher unmet health needs than men. The possible reasons are gender discrimination, poor socioeconomic status, and more focus on reproductive health services (Nair et al., 2021). The morbidity profile of elderly people living in urban slums of Assam, out of 125 participants 78.4 percent people were suffering from multimorbidity. Arthritis was most common followed by visual impairment. Morbidities were higher among men than in women. The study also explored health-seeking behavior which was found to be higher among elderly men (Barua et al., 2017). Comparing older women and those who were widows, morbidity related to non-communicable diseases among older women was

higher than older widowers. A negative association between age and utilization of health care services, specifically in oldest old widows (70+). Economically dependent older women had higher likelihood of seeking care (Agrawal and Keshri, 2014). A Bangladesh study on health seeking experience of elderly give insights like older people prioritize private health care over public facilities due to quality of service and easy transportation since they were located near household. Main barrier for health care is out of pocket expenditure. Out-of-pocket expenditure is more among older people because morbidities are higher compared to younger ones. Older people did not seek any services due to cost. To manage expenditure they use family funds, borrowing from friends and family and selling assets (Sarker et al., 2023).

1.2 Rationale of Study

The health status of elderly individual is a rising public health concern due to the rapidly increasing aging population in Kerala. The high morbidity and low mortality condition of the state indicate a higher risk of chronic health issues. Vision related issues caused by cataract is one among them. This can severely limit their cognitive and functional abilities. In Kerala, it is crucial to develop a health system that specifically addresses the needs of elderly women, particularly because a higher proportion of women survive longer and they are likely to be afflicted with VI that may remain unattended. There are a limited number of studies on vision related conditions in Kerala. And none which address the needs of elderly women. This study specifically looks at the vision health of women and utilization of eye care services. It will explore the barriers and facilitators of seeking care for cataract treatment in Kozhikode district of Kerala. The age group of 60 and above were taken to full fill the criteria of elderly women, who are higher in number in Kerala.

The district of Kozhikode has been selected for the convenience of the Principal Investigator, who is a resident of Vadakara block panchayat of Kozhikode district. This facilitated the timely completion of study within the 2month period allocated for fieldwork within the MPH program. Kozhikode district is situated on the southwest coast of India. Vadakara taluk is one among the 3 taluks of Kozhikode. As per Vadakara Municipality City Population Census 2011, Vadakara has an average sex ratio of 1119 which is higher than the state average (Census, 2011) It ensures representation of women for the study.

Research question: How do women aged 60 and above with visual impairment access eye care services, and what barriers do they face?

1.3 Objectives of the Study

Major objectives

1. To estimate prevalence and explore risk factors for visual impairment among women aged 60 and above and
2. To describe utilization of eye care services for cataract surgery in the same group

Minor objective

1. To identify barriers to and facilitators for cataract surgery among women aged 60 and Above

1.4 Chapterisation plan for the dissertation

Above chapter gives the study background, rationale and objectives. Chapter 2 summarize the literatures. Chapter three includes the detailed methodology of study with data collection tools, management and analysis of the data. Chapter four gives the results with tables and summary of findings. Chapter five include discussion of the result with limitation, strength and recommendations based on the findings from the study.



CHAPTER 2

REVIEW OF LITERATURE

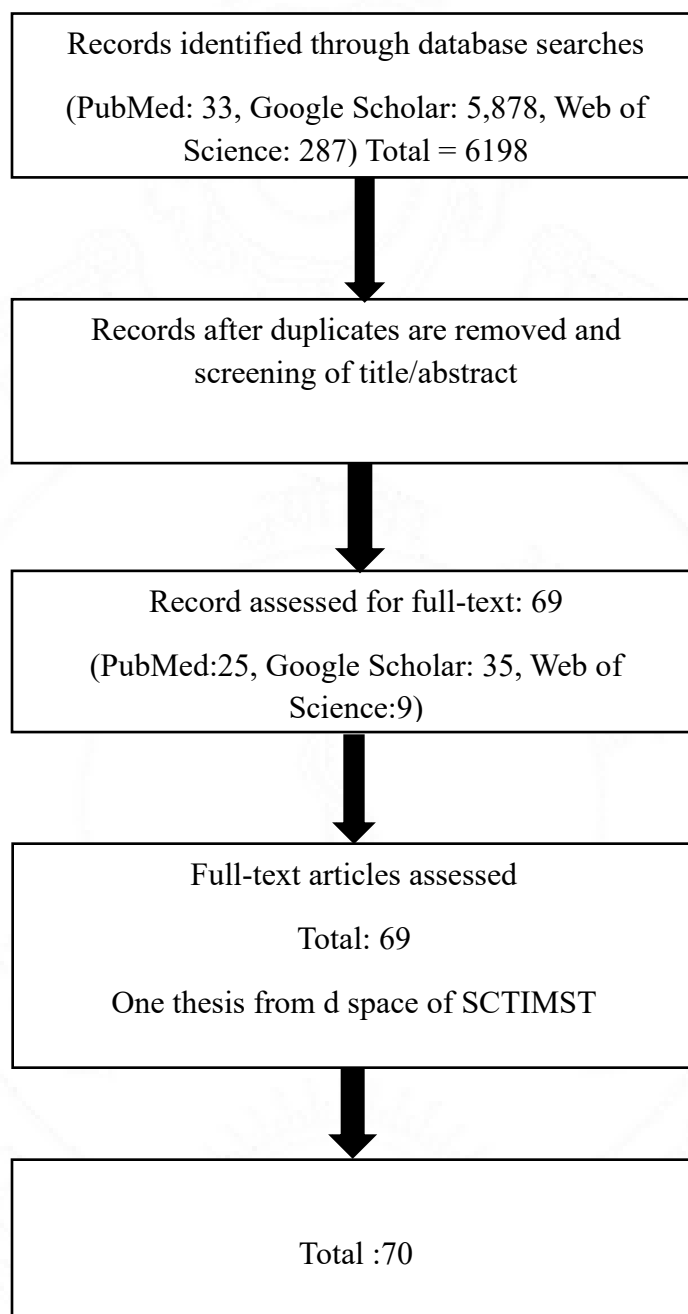
Scoping review was conducted to explore the prevalence of visual impairment, utilization of eye care services, spectacle usage, cataract surgery and the barriers and facilitators of cataract surgery.

PubMed, Google Scholar, and Web of Science were the search engines used for the literature search. All searches were filtered by 'full text' requirement as with full text the import of the paper could be accurately gauged. The first search used key words "prevalence" OR "proportion" AND "visual impairment" AND "elderly" AND "India" for period of 2014-2024. The search was for "title" or "abstract" and in initial search 5, 205 and 19 journal articles with title or abstract that included the keywords were identified from PubMed, Google Scholar and Web of Science respectively. By removing the key word "India", the search yielded 10 results in PubMed, 609 result in Google Scholar and 262 results in Web of Science. The second search included the key words "utilization of eye care" AND "barriers" AND "India" across all three search engines for same period. The search yielded 13, 4,980, and 0 article respectively. Using keywords "visual impairment" AND "elderly" AND "Kerala" related articles there were only 4 provided by Google Scholar. Lastly the keywords "barriers" AND "cataract surgery" AND "India" were used and 5, 84, and 6 journal articles from PubMed, Google Scholar and Web of Science were identified.

Of these, a scrutiny of texts and by removing duplicates finally yield 25, 35 and 9 paper across all three search engines. Lastly, the database of SCTIMST was searched to identify any prior

dissertations related to the topic and one thesis was identified. This resulted 69 journal articles and one thesis, all of which were incorporated into the literature review.

Figure 1. Chart of literature review



2.1 Prevalence of Visual Impairment

Visual impairment (VI) is a condition that occurs when eye diseases affect the visual system and its visual functions. It has serious consequences for an individual throughout their life. Visual impairment is measured using visual acuity, which measures how sharp vision is from a distance (WHO, 2019).

2.1.1 Global Scenario

A cross-sectional study conducted in Eastern Taiwan among suburban elderly found prevalence of visual impairment as 11 percent and age specific VI increased from 3 percent in the 55- 65 year age group to 19.1 percent for those aged 75 years and above. The study also showed that people with diabetic retinopathy had higher risk of VI than those without (Wang et al., 2016). A community-based pilot survey of 222 individuals aged 50 and older in Hong Kong suburbs found bilateral and unilateral visual impairment (VI) rates of 9.5% and 32.9%, respectively. The findings indicate that unilateral VI correlates with advanced age and lower educational attainment. Bilateral VI is linked to advanced age, temporary housing conditions, obesity, and hyperlipidemia (Wong et al., 2020). A study conducted in outreach sites of Northwest Ethiopia among 821 people aged 40 and above found the prevalence of VI as 41.8 percent and for blindness it was 11 percent. The investigation indicated that 74.9 percent of VI was due to preventable issues including cataracts and refractive mistakes, which can be mitigated via budget-friendly solutions (Tegegn et al., 2023). Among 3484 participants of age 50 and above of South China, the levels of blindness, SVI, and VI were 2.4 percent, 1.0 percent, and 6.4 percent respectively. Cataract remained the main reason for avoidable blindness. The outcome after cataract surgery in rural private clinics was found to be suboptimal and the study also suggest quality control initiatives for better outcome (X et al., 2017). A Canadian longitudinal study on aging (2012-2015) estimated VI to be 5.7 percent among people

who were 45 -85 years old. In this study VI was associated with older age, lower income and those who earning less than \$20000 per year, current smoking, having type 2 diabetes, and mental health problems (Aljied et al., 2018a). A study in South Africa revealed a 63.6% prevalence of visual impairment and blindness in individuals aged 60 and over across five low-income aged care centers (Mashige and Ramklass, 2020). The 2018 survey in Nigeria indicated a blindness prevalence of 5.4% and severe visual impairment (VI) at 2.3% (Taryam et al., 2020). National survey of blindness and VI (2015) in Guatemala among 50 years and above found 24 percent of all eyes that are blind due to cataract are treated and in case of bilateral blindness due to cataract, people tend to have surgery in one eye (Chávez et al., 2019).

2.1.2 Indian Context

A National Blindness and Visual Impairment Survey was carried out in India from 2015 to 2019 among people aged 50 and over, applying the WHO-endorsed Rapid Assessment of Avoidable Blindness strategy to measure the occurrence of visual impairment, blindness, and their causes. The survey also investigated cataract surgery coverage and barriers to its uptake. Conducted across 31 districts in 24 states/Union Territories from September 2015 to June 2018, the study estimated a VI prevalence of 13.8 percent and blindness prevalence of 2.0 percent (Vashist et al., 2022a). A Rapid assessment of VI survey conducted in Telangana among people aged 40 years and above found that 741 people were having VI out of 5881 examined participants. The prevalence increased with age and showed a higher prevalence among women than men (Marmamula et al., 2016). In Bihar, a cross-sectional study found that 3.4 percent had severe VI and 2.2 percent had blindness similar in both gender among those aged 50 and above (Poddar et al., 2020). Prevalence of VI was 24.5 percent in rural Haryana using a community-based survey in 34 villages among adult aged 50 and above. This study also found an association between age, marital status and educational levels

and VI (Malhotra et al., 2018a). The Hyderabad Ocular Morbidity in Elderly Study revealed a 30.1% prevalence of visual impairment in individuals aged 60 and older residing in aged care facilities. The findings underscore the necessity for vision impairment screening in such environments (Marmamula et al., 2021). A swift evaluation of visual impairment in Delhi's urban populace aged 40 and above revealed a prevalence rate of 11.4 percent, with uncorrected refractive error identified as the principal cause in nearly half of the participants (Gupta et al., 2015). In the period from 2017 to 2019, the Longitudinal Ageing Study in India (LASI) uncovered that visual impairment (VI) was present at varying degrees across 35 states and territories, with 12% facing mild distant VI, 19% moderate VI, and 2.1% severe VI. The research indicated that females showed a greater occurrence of moderate to severe visual impairment at 24%, whereas males were at 20%. Contributing factors to increased VI included low education, self-reported poor health, being currently unmarried, rural residency, and lower socioeconomic status (Ehrlich et al., 2022).

2.1.3 Kerala Context

The population of Kerala is rapidly aging. According to the 2011 Census, 16.5 percent of state population constitute elderly people aged 60 and above. Kerala has the highest life expectancy 71.9 for males and 78 for females for the period 2016-2020. The expectancy at 60 years of age is 17.4 and 21.4 for males and females (SRS based Abridged Life Tables 2016-20, 2022). The elderly population in Kerala exhibits a higher number of women than men. A significant proportion of the older women are widows. According to the 2011 Census, 23 percent of them are aged between 60-69. Almost half (43.1 percent) of women above 70 are widows. Kerala is a state of low mortality and high morbidity and studies suggest that hypertension, diabetes, and visual impairment are the most common morbidities found in the elderly population (Das et al., 2017). Aging is normal, progressive and irreversible process leading to functional limitation and various diseases. Visual

impairment has an association with functional limitation, where the overall prevalence of functional limitation was 22.4 percent in Ernakulam district of Kerala state. Other associated diseases were acid peptic disease, constipation, kidney disorder, urinary tract infection, and edematous mouth (Pillai et al., 2022). Study results from morbidity profile and disability patterns among elderly in rural areas reported visual problems (74.2 percent) in which, refractive errors (68.7 percent) and cataract (29.2 percent) were found to be major morbidity (Simon C and Binu J, 2024). As per LASI, Kerala state had the second highest level of cataract prevalence, second only to Gujarat state (Singh and Mohanty, 2024).

2.2 Causes of Visual Impairment

A comprehensive systematic review and meta-analysis of population-based eye disease surveys conducted from January 1980 to October 2018 was performed to evaluate the global burden of eye diseases. This facilitated the estimation of visual impairment causes in 2020. Findings indicated that from 2010 to 2019, the global crude prevalence of visual impairment and blindness among adults aged 50 and above remained unchanged. Still, the occurrence of cases of both preventable blindness and moderate to severe visual difficulties went up. The main international trigger for vision impairment among this demographic was cataract, succeeded closely by glaucoma, refractive error, age-related macular degeneration (ARMD), and diabetic retinopathy. Under-corrected refractive error and cataract were identified as contributors to moderate to severe visual impairment (Steinmetz et al., 2021). In India, cataract accounts for 66.2% of blindness and significant visual impairment. Severe visual impairment, aside from cataract, is primarily due to surgical complications (8.3%). Other blindness causes encompass corneal opacity and posterior segment disorders. Refractive error is the predominant factor for early visual impairment (Vashist et al., 2022a). In the year 2020, it was reported by the IAPB Vision Atlas and the Lancet Global

Health Commission on Global Eye Health that a significant 90 percent of visual impairment could have been either prevented or effectively managed. The Longitudinal Ageing Study in India (LASI) found that the rate of cataracts stood at 14.3 percent, with a significantly higher occurrence noted among women compared to men; this increased occurrence of cataracts in females was prevalent regardless of educational levels, age progression, and the urban versus rural context (Singh and Mohanty, 2024).

2.3 Factors Related to Visual Impairment

2.3.1 Age and Gender

Older age groups had a higher prevalence of vision related disease. Prevalence of VI was higher in those aged above 80 than people in age group of 50-59 in India (Vashist et al., 2022b). In India, the life expectancy at birth for females was estimated at 71.4 for 2016-2020, which is longer than in males (68.6 percent) (SRS based Abridged Life Tables 2016-20, 2022). The incidence of visual impairment is notably elevated among women due to their extended life expectancy. According to a national survey conducted in 2019, the prevalence of visual impairment in women aged 50 years and older was recorded at 28.9 percent, in contrast to a prevalence rate of 24.3 percent among men (Vashist et al., 2022b). Women were more likely to be blind because of cultural and economic factors other than biological component like age. Culturally, in many families' health of women is not prioritized. Traditional roles also make women more exposed to infectious disease like trachoma (Sanders et al., 2023) and they are restricted to travel alone due to social norms. They are less likely to be take part in economic activity limiting them from accessing care (Hay et al., 2019). A study conducted among rural students of China gives significant evidence of gender disparities among female and male students with respect to vision health, health seeking behavior and vision correction factors. Even when female students have more vision loss, vision

examination rate was higher among males. The vision health seeking and correction behavior depend upon family resource allocation. However, females had lower eyeglasses ownership than males, even when they were the only child in the family with advantage of relative family resource allocation. This confirms gender difference in utilization of health services (Zhang et al., 2023)

2.3.2 Hormonal Effect

The progression of cataract formation exhibits divergent patterns between males and females. This necessitates an investigation into the influence of estrogen on the pathophysiology of cataractogenesis. An increased reproductive lifespan, signified by a sooner onset of menarche or a later menopause, appears to be associated with a lesser risk of cataract occurrence. Research has shown that women in postmenopausal stages could experience a protective advantage from hormone replacement therapy (Younan et al., 2002),(Freeman et al., 2001). Empirical evidence further indicates that postmenopausal females and males exhibit an equivalent likelihood of cataract development (Klein et al., 1992), (Mitchell et al., 1997).

2.3.3 History of Chronic Illness

Diabetes: Diabetes has a significant effect on developing visual impairment among elderly. It causes early onset of cataract and diabetic retinopathy. A duration of 10 years and more with diabetes mellitus was associated with VI. VI is also related with poor glycemic control and family history of diabetes (Aytenew et al., 2024). From China- The Tianjin Eye Study, found that the prevalence increases with age and is higher in females. Diabetes increases the risk of bilateral visual impairment in 50+ years old group (Meng et al., 2021). Canadian Longitudinal Study on Aging, while determining the prevalence and determinants of VI found type 2 diabetic patients were more likely to have visual impairment than type 1 diabetes (Aljied et al., 2018b). The incidence of VI in diabetes patients was found to be 21.7 percent within a 4-year follow-up in the

south Indian population. A majority of the diabetes patients were found with mild VI (18.3 percent) and followed by moderate VI (3.4 percent). Cataract and refractive error were leading causes of incident VI, which can be treated with cost-effective measures (Srinivasan et al., 2017). Of the elderly who were residents of 'home for the aged' 30.1 percent were visually impaired and people with diabetes had lower odds of developing VI (Marmamula et al., 2021)

Hypertension: Hypertension increases the risk of vision-threatening conditions affecting visual function and ocular structure. It also leads to vascular disease such as retinal vein and artery occlusion, emboli in retinal arterioles, and diabetic retinopathy (Choi et al., 2024). Women have an age-related elevated risk of developing hypertension due to reduced estrogen levels after menopause. Aging is a primary risk of hypertension and specific risks like central obesity, high cholesterol, and low high-density lipoprotein concentration are found to be more in women than in men (Abramson and Melvin, 2014). A research investigation conducted in Uganda demonstrated that individuals frequenting an ophthalmological clinic and who self-identified as hypertensive exhibited elevated probabilities of experiencing VI (Mulinde et al., 2022). Nirmal Eye Evaluation for Trends study conducted in Telangana found prevalence declined to 16.3 percent from 20.2 percent in the 2014 baseline study among people aged 40 years and above. Uncorrected refractive error and cataract still remained a major cause of VI. Hypertension and diabetes were found to be important risk factors for VI (Marmamula et al., 2024).

Stroke: Aging is recognized as an immutable risk factor for Stroke. Given that females exhibit a longer life expectancy compared to their male counterparts, the incidence of stroke among individuals aged 55 to 75 years is significantly elevated in women. Various determinants, including hormonal influences, reproductive aspects such as gestation and parturition, as well as sociocultural factors, play a substantial role in stroke occurrence among the female population.

(Bushnell et al., 2014). Using the original Framingham study cohort, by collecting data on gender-specific differences in neurological deficits and disabilities in stroke survivors at 6 months post-stroke, a study found that women at older age experienced first ever ischemic stroke. Post stroke disabilities were more in women effecting their daily activities. Cognitive deficits were more likely among women and they were found to live in nursing homes (Kelly-Hayes et al., 2003). Visual impairment is a symptom of many neurological diseases such as stroke, multiple sclerosis, brain tumors and myasthenia gravis. Aging population have a higher risk of stroke and consequently develop stroke- related visual impairment (Sand et al., 2013). Older males and females who had a stroke had higher prevalence of VI (Srivastava et al., 2023).

2.3.4 Fall

Visual impairment significantly elevates the likelihood of falls and injuries attributable to falls in both genders. The weakening of sensory capacities correlates with a heightened risk of falls, fall-induced injuries, mortality rates, and a drop in the quality of life associated with health. A research study aimed to elucidate the relationship between these factors and impairments in visual and auditory functions. The results suggested that those who admit to visual impairment were more likely to fall, with a notably increased occurrence in women. Both kinds of sensory challenges were correlated with a lesser quality of life concerning health. Individuals with visual impairments, regardless of gender, exhibited a heightened risk of mortality (Lopez et al., 2011). Poor vision in older people increase the risk of fall due to lose of stability and gait change to avoid obstacles (Buckley et al., 2010). A study conducted in Hyderabad among elderly living in ‘homes for aged’ found that the prevalence of falls was higher in people with low vision than those having blindness and least among without VI. Out of 1,074 participants, 29.1 percent reported fall and it had significant association other than VI with depression and fear of falling. A higher prevalence of

fall was shown in VI caused by uncorrected refractive error. Fall is not associated with cataract among those aged 80 and more. It may be due to severe grade of vision loss leading to restricting mobility (Marmamula et al., 2020). The study analyzing data of LASI, determines the prevalence of fall, multiple falls and injuries on visually impaired elderly people. 34 percent of the total population was having low vision and 20 percent of them had history of fall. The likelihood of falls is higher among women and it increases with level of visual impairment and blindness. The frequency of falls is also affected by low vision and blindness. Illiterates, widowed, individuals who never worked, those with lower socioeconomic status were found to be vulnerable to falls (Singh and Maurya, 2022).

2.3.5 Socioeconomic Factors

A population-based case-control investigation was conducted during the years 2005-2006 across three distinct nations, wherein the cases were defined as individuals aged 50 years and older who experienced visual impairment (VI) attributable to cataract. The study's foremost intention was to investigate how financial struggles within households correlate with visual impairments. The findings revealed that individuals classified as cases exhibited a lower socioeconomic status in comparison to controls who possessed normal visual acuity. This relationship was observed to be synergistic, wherein poverty diminished access to cataract surgical interventions, thereby leading to visual impairment, while conversely, visual impairment could exacerbate poverty through diminished employment prospects. Furthermore, poverty also imposed limitations on access to ocular healthcare services. The study indicated a potential protective influence of literacy and educational attainment against the development of cataract (Kuper et al., 2008). A population-based survey conducted in Telangana, India estimated the prevalence of VI among the group that was tested to be 86.6 percent. The study established that VI is related to poverty and lack of

employment given that cases were more in the poorest quartile than in the richest. The cataract surgery coverage was also low among the participants, which may be relate to socioeconomic status (Mactaggart et al., 2018). By shifting the focus to older women, unpaid labor, less pension availability, and having lesser authority over assets than men determine the health seeking behavior of older women. Widowhood leads to poverty which increases the vulnerability to health problems. This highlights how socioeconomic status determines the health seeking behavior of women (Nair et al., 2021)

Education

A cross-sectional study conducted among elder attending eye clinic in Uganda, found that elders who had completed primary education and those with secondary education were less likely to have VI (Mulinde et al., 2022). A community-based study conducted in rural Haryana among elderly aged 50 and above found that as education level increase it act as a protective factor for VI. The risk of experiencing visual impairment (VI) was noted to be less among individuals with educational achievements at the primary, secondary, and senior secondary tiers in relation to their illiterate counterparts. Furthermore, the research demonstrates the correlation between marital status and the prevalence of visual impairment, suggesting that unmarried individuals face a heightened risk of developing such conditions in contrast to their married counterparts (Malhotra et al., 2018b). From the evidence of LASI (2017-18) the prevalence of VI was highest among oldest old (aged 80 and above) than old 40 and above) participants. VI increases with no formal education, in those who never worked, those in lower socioeconomic group, those who belonged to Scheduled Caste and those with rural residence. The relationship status of people could be a major predictor of visual impairment (VI), as older adults who are separated, divorced, or deserted

often show a significantly increased risk of experiencing VI in contrast to their married counterparts (Srivastava et al., 2023).

Employment

A study undertaken in an urban resettlement colony of Delhi among 604 elderly people aged 60 and above, found that the prevalence of VI was associated with illiteracy, and non-working status of participants. Poor socioeconomic status of illiterate and non-working lead to decreased treatment seeking for their eye conditions. VI prevalence increases with economic dependency on their caregivers than those who are economically independent. This also give insights on the reverse causality of economic dependency and nonworking with respect to visual impairment (Vignesh et al., 2019).

2.4 Utilization of Eye Care

With the higher occurrence of visual disabilities in the elderly demographic, it becomes vital to engage with eye health services to better visual clarity and treat eye ailments. Research investigating the engagement with eye care services among individuals experiencing unilateral visual impairment, aged 16 and above, has revealed that merely 34.1 percent of individuals who perceived alterations in their vision sought professional consultation. The older demographic predominantly comprised those who recognized changes in their visual perception. Individuals diagnosed with cataracts exhibited a greater likelihood of recognizing visual changes compared to those afflicted with uncorrected refractive errors, thereby seeking medical attention. Moreover, individuals possessing advanced educational qualifications exhibited a greater propensity to seek eye care services (Marmamula et al., 2017). The health-seeking behavior of elderly depended upon their living arrangement, and was higher in those living with their spouses and children and lower in those who stayed alone (Barua et al., 2017). Visual impairment was perceived to be normal

in old age and it in turn restricted activities within and outside household. So, seeking care for impaired vision was given a low priority. Men seek care even if it meant having to travel long distances than women because of their economic independence and mobility. Accessing eye care by women is limited because of the responsibilities of households, restricted mobility, and social norms that dictate that they have to travel only with men and not alone. The difference is also prominent in both inpatient and out-patient care. Outpatient care was provided by nearby health facilities and inpatient care was limited due to cost and distance. For elderly women, decisions were taken by other members of the family. The money for inpatient care was provided by others and this affects eye care service utilization (Barman and Mishra, 2020). A study conducted in Tamilnadu for exploring eye care seeking behavior among rural adults showed that only 15.5 percent of the people had undergone a previous eye examination. While 11.2 percent of participants reported eye complaints only 4.7 percent had a previous eye examination. In this study, participants who were illiterates and those who completed their primary education reported previous eye examination than those with higher education. A higher number of farmers has sought eye examination than those who were formally employed. But, VI status in farmers and unemployed ones was higher than employed ones. The state of Tamil Nadu possesses adequate medical infrastructure. Notwithstanding the existing awareness of ocular conditions and the availability of pertinent services, the persistent underutilization of ophthalmic care services constitutes a considerable issue of concern. (Rangavittal and Narayanan, 2022). The probability of engaging with eye care services escalates with advancing age, male sex, educational attainment, proximity to ophthalmic facilities, and the presence of diabetes mellitus or hypertension, as demonstrated in a study conducted among the adult populace in Nigeria (Olusanya et al., 2016).

2.4.1 Cataract Surgery

Cataracts represent a predominant etiological factor contributing to visual impairment and the occurrence of blindness. Surgery is a cost-effective solution for cataract. In India, effective cataract coverage is higher for male (38 percent) than females (35.6 percent)(Gupta et al., 2024). A detailed study performed in the Tirunelveli district of Tamil Nadu, India, disclosed that for the demographic of individuals aged 50 and above, cataract surfaced as the primary reason for unilateral blindness in around 70.6 percent of participants displaying any form of visual difficulties. Among those with bilateral cataract, 12.7 percent had undergone cataract surgery indicating that most of those with bilateral cataract had never been operated upon. This indicates the lower coverage of surgery among rural residents, illiterates and women in 2000 (Nirmalan et al., 2002). As per data from Longitudinal Ageing Study of India (2017-19) 27.5 percent of older adults who were at need of surgery did not receive cataract treatment. Among cataract patient 27.5 percent of older adults did not receive surgery. Women were also less likely to receive surgery. The gap persisted across different categories like females, poor and illiterate. And study examined the effectiveness of treatment and found that around 28.9 percent did not receive effective treatment among those who underwent treatment. Effective cataract surgery was more among men than in women and it the percentage of those with effective treatment decreases with increasing age. This can also be seen in less educated and economically disadvantaged groups (Singh and Mohanty, 2024). In Chendamanagalam Panchayat, Kerala, a research investigation revealed that among people aged 60 and over, the prevalence of cataracts stands at 47.7 percent, notably more significant in women (57.4 percent) than in men (36.8 percent). In the group diagnosed with cataracts, 59.6 percent received surgical procedures. Surgical treatment for cataracts was administered to 62.9 percent of males, outpacing the 58.7 percent of females in similar circumstances. A noteworthy proportion of

cataract surgeries were conducted in private healthcare facilities (58.1 percent), followed by those performed in governmental hospitals and charitable trust institutions. The utilization of cataract surgery escalated in accordance with increased living standards and among individuals who financed their treatment independently as opposed to relying on others for surgical expenses. A gender-based analysis of the determinants influencing surgical utilization indicated a consistently higher rate of surgical intervention among males relative to females across all strata of living standards. This investigation also illuminated a disparity in coverage, revealing that illiterate women experienced lower access to surgical treatment compared to their illiterate male counterparts. In the case of women who financed their surgical procedures, there was a notable increase in the rate of surgeries, and the availability of medical reimbursement further enhanced their access to healthcare services, whereas such disparities were not observed among men (Anitha, 2009).

2.5 Barriers of Accessing Eye Care Services

Gupta and Murthy indicated that obstacles associated with service delivery, such as availability, accessibility, and affordability, serve as significant factors contributing to the underutilization of eye care services.(Gupta and Murthy, 1995). Impediments to obtaining medical care, despite experiencing a deterioration in vision, were classified as personal (42 percent), economic (37 percent), and social (21 percent) in origin. Factors pertaining to social and economic circumstances, including reliance on the family member who generates income and both direct and indirect expenses associated with treatment, significantly influence the utilization of ocular healthcare services (Kovai et al., 2007),(Marmamula et al., 2022a).

A study conducted in 2014 in Andhra Pradesh indicates a change from service-related barriers (28.9 percent) to person related barriers(71.1percent). Among person related barriers, ‘lack of

perceived need' was the leading reason(Marmamula et al., 2014). The barriers on the demand side that impede women's access to eye health care encompass sociocultural determinants, availability and governance of resources, organizational elements, and economic constraints. Women frequently possess diminished agency regarding their health and must engage in negotiations with their spouses to arrange for childcare and domestic responsibilities in order to access health facilities. There exists a deficiency in women's access to household resources and health-related information. The societal status of women, influenced by cultural factors, renders them unfamiliar with the health system, particularly impacting elderly and less educated women. Lower educational achievement and the fragility of their social networks often mean that elderly women are less cognizant of the treatment options available, resulting in increased social isolation (Neyhouser et al., 2018).

2.5.1 Barriers of Cataract Surgery

A research study concerning cataract surgical interventions conducted in rural southern India in the year 2002 ascertained that 63 percent of the individuals requiring cataract surgery had indeed received the procedure. A significant majority, specifically 51.2 percent, of the surgical operations were executed in private healthcare institutions, while 33.3 percent were performed in voluntary or charitable hospitals, with a mere 4.4 percent conducted in government-operated facilities. Surgery was paid for 46.1 percent of the operated eyes and free for 47.4 percent. The main barrier for not undergoing surgery was the inability to afford the operation and fear of losing eyesight (Chandrashekhar et al., 2007). Among people who were referred for cataract surgeries from screening clinics, 88.8 percent underwent surgery. Fear and lack of family support/escort were found to be the most common barriers. Among women, use of eye care services was mediated by who already had cataract surgery. The mean duration to second eye surgery was nearly 9.5 weeks.

Of those did not undergo surgery, common reasons were busy with household responsibilities and other medical comorbidities prevent them from surgery and mange with the vision in one eye (Amritanand et al., 2018). The study among 300 people aged 60 and above in Kerala found 41.3 percent of women with cataract had barriers to undergo cataract surgery than men (37.1 percent). The study also found that single or widowed persons were more likely to undergo surgery when compared to currently married women (Anitha, 2009).



CHAPTER 3

METHODOLOGY

In this chapter, I have described the methodology used for this quantitative study. It includes a description of the study design and setting, the determination of the sample size and the sampling strategy used and the means of data collection used to obtain information from study participants. It concludes with a description of the data analysis and expected outcomes.

3.1 Study Design

The study used a quantitative method to collect data. A cross-sectional design was chosen, as it is suited for estimating prevalence of visual impairment and cataract among women aged 60 and above at a given point in time. This design enables the estimation of cataract surgery utilization and exploration of barriers to cataract surgery. This study design allowed for the simultaneous assessment of multiple outcomes and exposures, making it an easy and feasible for the completion of data collection within a limited time period. In order to attain all these objectives, cross sectional design was preferred.

3.2 Study Setting

The study was conducted in Vadakara block panchayat of Kozhikode district, Kerala. The district of Kozhikode was selected for the convenience of the principal investigator, who is a resident of Vadakara block panchayat of Kozhikode district. This facilitated the timely completion of study within the duration allocated for field work as part of the Masters of Public Health (MPH) programme at Achutha Menon Centre for Health Science Studies (AMCHSS), Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram. Vadakara taluk was one among the 3 taluks of Kozhikode. Vadakara has

an average sex ratio of 1119 which is higher than the state. It ensures that an adequate sample of women for the study.

3.3 Sample Size Estimation

The sample size was calculated using OpenEpi version 3.1 software. The anticipated prevalence of VI was 9.88 in the National Survey of VI undertaken in period 2016-19 and it included a sample from Thrissur district, Kerala. This study included persons aged 50 and above. Assuming that the prevalence across both sexes is the same and that the prevalence for those aged 60 and above would be similar, this percentage was used to calculate the required sample size. Using a precision of 5%, confidence interval 95% and design effect of 1.5 the sample size was estimated to $206 \approx 210$. To avoid restrictions due to rounding off errors while distributing the sample across all 4 grama panchayat of Vadakara block, the sample size was rounded off to 220.

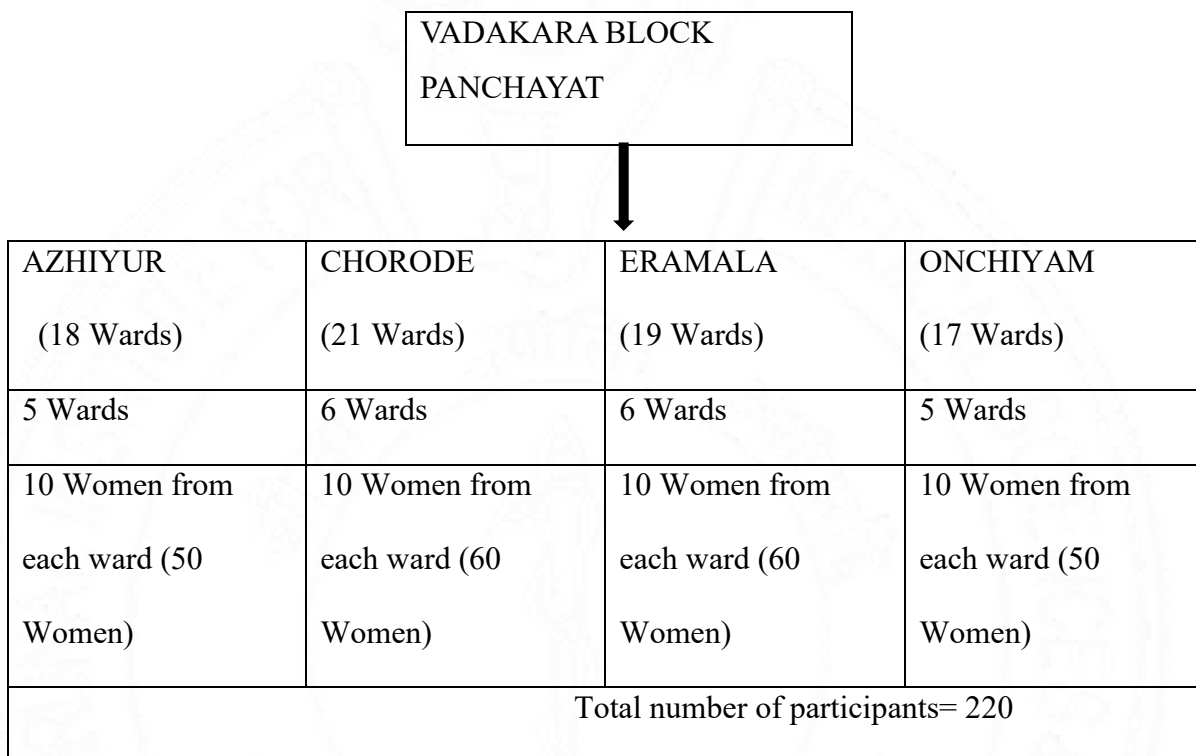
3.4 Selection of sample

The first stage of sample selection was for selection of wards from grama panchayat. The Vadakara block panchayat had four grama panchayats. Wards were selected by simple random sampling, ensuring proportionate selection from each panchayat in terms of the number of wards by ensuring a proportionate number of women. From each ward a cluster of 10 women aged 60 years and above were included.

The second stage was about selecting households having women aged 60 and above. Upon entering the central square, by lottery method the direction in which to move was decided. And the first house was selected randomly from 1 to 5 on the left side of the street. Following the selection of the first house, every second house on the left side of the street was visited. Using the same process of moving only in the left direction, every second household was listed and

the presence of women aged 60 verified until 10 consenting women aged 60 were identified and included in the sample from the specified cluster. If there were more than one woman aged 60 and above in a selected household, KISH tables were used to enroll the subject. This was marked in the cluster recruitment sheet, which was used during data collection

Fig 2. Schematic representation of the sampling procedure



3.5 Selection of subject

The inclusion and exclusion criteria for the study was determined using duration of residency in Vadakara block panchayat and their ability to respond to the interview schedule.

Inclusion criteria

- The study participants include elderly women aged 60 and above who are residents of the block panchayat for at least 1 year

Exclusion criteria

- People who were unable to respond due to various physical conditions (bedridden and unable to move) and cognitive impairment (memory loss, confusion, language difficulties, and change in behavior and personality)
- People who were not interested in participating in the study

3.6 Data Collection

Data collection occurred from 16th January 2025 to 22th February 2025 by Principal Investigator (PI). Four hundred and sixtytwo households were visited to acquire sample size of 220 participants who were women aged 60 and above. Non-responding households were substituted from same wards to reach the calculated sample size. Informed consent was collected before starting the data collection. Measures were taken to keep privacy and confidentiality of the participants.

3.7 Tool for Data Collection

During data collection a structured interview schedule was used to captured demographic details, economic characteristics and history of chronic disease of the participants. Visual acuity was measured using the Peek Acuity app. PI stood at a distance of 2 meters from the participants. Participants were seated and mobile was kept horizontally at the eye level by the PI. The participants gave the direction by pointing fingers as they perceived the arms of the E from the mobile and PI swiped the touch screen according to that direction. Vision was tested separately for each eye. For participants with distance glasses, measurement was done while wearing it. Examination of cataract was done using pen torch. Barriers for not undergoing cataract surgery was documented using open- ended questions.

3.8 Ethical Considerations

Institutional Ethics Committee of SCTIMST approved the study (SCT/IEC/2339/December/2024). All participants were provided with written consent. Interviews and eye examination were conducted in a comfortable setting for the participants. The examination was halted if the participant reported any discomfort. All collected information was secured with PI and guide and the identity and location of respondents were masked.

3.9 Storage of Data

All data, including the consent forms from participants are safe with the PI and they are secured. Completed interview schedules, consent forms and notes will be disposed after three years of thesis completion to comply with regulatory measures.

3.10 Data Entry

Data entry was done using Open Data Kit (ODK) platform and cleaning in Excel. The responses of open- ended questions were translated to English

3.11 Analysis of Data

SPSS version 25 was used to analyze the data. Descriptive analysis was used to describe the characteristics of women aged 60 and above included in the study. Association of dependent and independent variables were explored using bivariate analysis. The barriers to cataract surgery were analyzed and presented using percentages to establish the salience of each of the barrier.

3.12 Variables

3.12.1 Dependent Variables

1. Visual impairment in women aged 60 and above: Participants with presenting visual acuity $<6/18$ in either one of the eyes.
2. Cataract in women aged 60 and above: Participants with a pupil that appeared to be white and those who had already diagnosed with cataract.
3. Cataract surgery utilization: Participants undergone for cataract surgery and place of surgery.
4. Barriers and facilitators to undergo cataract surgery: Any difficulties experienced by the women aged 60 and above with cataract to undergo surgery and those factors which facilitated to go for surgery.

3.12.2 Independent Variables

Demographic characteristics

1. Age: Age in completed years as reported by respondent
2. Religion: Religion reported by the respondent
3. Marital status: Marital status reported by respondent whether they are currently married, widow or never married
4. Living arrangement: Reported by respondent whether they were living alone, with spouse only, with children only, with spouse and children or with relatives

Socio-economic characteristics of the participants

1. Education: If the respondent had ever attended school. The education categories further divided into lower primary (1-4), upper primary (5-7), secondary (8-10), higher secondary (+1, +2), graduate, and post graduate and above. For those who had never

attended school, it was divided into illiterate and literate with non- formal education.

2. Employment: Reported by respondent, whether they were currently working or prior worker or never worked.
3. Socioeconomic class: The color of ration card mentioned by the respondent.
4. Pension and health insurance: Reported by the respondent whether they were having pension and any health insurance.
5. Source of money for treatment: As reported by the participant that who spend money for their treatment, categorized into self, spouse, children or relatives.

Morbidity profile of the participants

1. Diabetes: Reported by the participants, whether they had diabetes and under medication for managing it.
2. Hypertension: Reported by the participants, whether they had hypertension and taking medication for it.
3. Stroke: Participants reported about having a history of stroke.
4. Falls: Reported by participants, who had a history of fall in the last 2 years.

3.12.3 Reported Barriers of Undergoing Cataract Surgery

Patterns were identified from the description of barriers reported by the participants and listed as reasons for not undergoing surgery and reasons for not undergoing second eye surgery.

3.13 Expected Outcomes

The aimed to determine the prevalence of VI and cataract among the women aged 60 and above and extent of utilization of cataract in this population. The study also describes the difficulties faced by these group to access cataract surgery through their reported barriers to surgery.

CHAPTER 4

RESULTS

In this chapter, I describe the results according to the objectives of the study. The first section includes the primary objective of the study: the prevalence of visual impairment, the prevalence of cataract, and its association with participants' socio-demographic, socio-economic characteristics, and morbidity profile among women aged 60 and above. The second section includes the utilization of eye care services for cataract surgery and factors related to surgery utilization. In the final section, I describe the barriers to undergoing cataract surgery among the study participants.

4.1 Estimating Prevalence of Visual Impairment and Cataract

4.1.1 Prevalence of visual impairment

The study assessed the presence of visual impairment among women aged 60 and above, and found that the prevalence was 47.7 percent. More than half of the participants 52.3 percent, had no visual impairment. However, a significant proportion experienced vision problems in both eyes 27.7 percent, while 20 percent had visual impairment in at least one eye. The distribution of the women in the sample by the VI status is given in table 4.1.

Table 4.1. Percentage distribution of women aged 60 and above by visual impairment status, Kozhikode district, Kerala

Visual impairment	Percentage (n)
One eye	20.0(44)
Both eyes	27.7(61)
No impairment in either eye	52.3(115)
Number of women	100.0 (220)

4.1.2 Estimation of prevalence of cataract

The study determined whether a person has or had obvious opacity in any one or both eyes or had been operated for cataract in any one or both eyes. The table lists the details of cataract in the study population in Vadakara block Panchayat. The prevalence of cataract among women aged 60 and above in Kozhikode district was 75.4 percent. There was a higher burden of bilateral cataract 68.6 percent whereas 6.8 percent had cataract in only one eyes. The distribution of the women by the reported cataract condition is given in table 4.2.

Table 4.2 Percentage distribution of women aged 60 and above by cataract, Kozhikode district, Kerala

Cataract developed	Percentage (n)
One eye	6.8 (15)
Both eyes	68.6 (151)
No cataract in either eye	24.5 (54)
Number of women	100.0 (220)

4.1.3 Association of Visual Impairment and Sociodemographic, Economic, Morbidity Profile of the Study Participants

Sociodemographic characteristics of participants

Bivariate analysis was done with the prevalence of visual impairment and sociodemographic characteristics of study participants and presented in the table 4.3. It is seen that nearly half 47.7 percent of the women aged 60 and above had VI, with a significant increase in the prevalence as women age ($p < 0.001$) and higher load in 70 years and above (61.1 percent). Religion was also significant factor related to VI, with Muslim women showing a higher burden of VI compared to Hindu women. There was a variation in VI status by the marital status of women. Widows/never married (52.1 percent) and those who were living with children/ young relatives (50.0 percent) had

a higher burden of VI. However, the observed differences across marital status, and living arrangements were not statistically significant.

Table 4.3 Association between prevalence of visual impairment with socio-demographic characteristics of participants, Kozhikode district, Kerala

Age	VI present %(n)	VI absent%(n)	Total%(n)
Below 70 years	34.8(39)	65.2(73)	100.0(112)
70 and above	61.1(66)	38.9(42)	100.0(108)
χ^2 with 1 df=15.232(p<0.001)			
Religion			
Hindu	45.3(92)	54.7(111)	100.0(203)
Muslim	76.5(13)	23.4(4)	100.0(17)
χ^2 with 1 df=6.101(p=0.021)			
Marital status			
Never married/widow	52.1(74)	47.9(68)	100.0(142)
Currently married	39.7(31)	60.3(47)	100.0(78)
χ^2 with 1df=3.392(p=0.079)			
Living arrangement			
Living alone / spouse only	47.1(16)	52.9(18)	100.0(34)
Living with children/young relatives	50.0(66)	50.0(66)	100.0(132)
Living with spouse & children	42.6(23)	57.4(31)	100.0(54)
χ^2 with 3df=5.947 (P=0.114)			
ALL	47.7(105)	52.3(115)	100.0(220)

Socioeconomic characteristics of participants

The associations between the women's socioeconomic characteristics and VI status were examined and the results are presented in table 4.4. Women with lower education had a higher prevalence of VI ($p < 0.001$) compared to those with education. The prevalence of VI was lower among women who were currently working when compared to those who were not currently employed or never worked. However, this association was not statistically significant. Women who were from households of lower economic status (52.6 percent) had a higher prevalence of VI, but the association was not statistically significant. A higher load of VI was seen in those who received a pension (49.6 percent) and had health insurance (48.6 percent), these differences were not statistically significant. In terms of financial support for treatment, most of the women who relied on children/young relatives had a higher prevalence of VI.

Morbidity profile of participants

Bivariate analysis of the morbidity profile and prevalence of visual impairment is presented in table 4.5. Considering the variable stroke, the number of participants who reported a history of stroke was very low, and all of them had visual impairment. This lack of variability led to unstable estimates. So, no chi-square test was attempted. The burden of VI was higher among those with diabetes (53.6 percent) and falls (51.7 percent) compared to those without diabetes and no history of falls. However, no statistically significant association were found between VI and diabetes, hypertension, or a history of falls.

Table 4.4 Association between the prevalence of visual impairment with socio-economic characteristics of participants, Kozhikode district, Kerala

Educational status	VI present %(n)	VI absent %(n)	Total %(n)
Less educated	68.6(48)	31.4(22)	100.0(70)
Educated	38.0(57)	62.0(93)	100.0(150)
χ^2 with 2df=17.880(p<0.000)			
Employment type			
Not employed (prior/never worked)	49.2(94)	50.8(97)	100.0(191)
Employed	37.8(11)	62.1(18)	100.0(29)
χ^2 with 1df=1.25(p=0.257)			
Socioeconomic class (based on ration card)			
Lower economic class	52.6(51)	47.4(46)	100.0(97)
Middle economic class	44.8(30)	55.2(37)	100.0(67)
Higher economic class	42.9(24)	57.1(32)	100.0(56)
χ^2 with 2df=1.681(p=0.218)			
Pension	VI present % (n)	VI absent %(n)	Total %(n)
Receiving pension	49.2(98)	50.8(101)	100.0(199)
Not receiving any pension	33.3(7)	66.7(14)	100.0(21)
χ^2 with 1df=1.928(p=0.178)			
Health insurance			
With health insurance	48.6(67)	51.4(71)	100.0(138)
Without health insurance	46.3(38)	53.7(44)	100.0(82)
χ^2 with 2df=0.101(p=0.781)			
ALL	47.7(105)	52.3(115)	100.0(220)

Table 4.5 Association between the prevalence of visual impairment with morbidity profile of participants, Kozhikode district, Kerala

Diabetes	VI present %(n)	VI absent%(n)	Total %(n)
Present	53.6(45)	46.4(39)	100.0(84)
Absent	44.1(60)	55.9(76)	100.0(136)
χ^2 with 1df=1.860 (p=0.173)			
Hypertension			
Present	50.0(71)	50.0(71)	100.0(142)
Absent	43.6(34)	56.4(44)	100.0(78)
χ^2 with 1df=.829 (p=0.362)			
Fall			
Present	51.7(30)	48.3(28)	100.0(58)
Absent	46.3(75)	53.7(87)	100.0(162)
χ^2 with 1df=0.504 (P=0.478)			
ALL	47.7(105)	52.3(115)	100.0(220)

Bivariate analysis found age, religion, and education as significant predictors of visual impairment. Multivariate analysis was not possible since the variable religion included only two categories, with one category having a very small number of participants. This limited number made it difficult to draw meaningful conclusions regarding its association with visual impairment. So, only education remained as significant predictor.

4.1.4 Association of Cataract and Sociodemographic, Economic, Morbidity Profile of the Study Participants

Sociodemographic characteristics of participants

I examined the association between the prevalence of cataract and sociodemographic characteristics of study participants and this is presented in the table 4.8. A higher burden of

cataract was seen with increasing age, with all participants aged 70 and above among the study participants having cataract and it is statistically significant ($p < 0.001$). Religion shows a significant association, with all Muslim women aged 60 and above in the study group having cataract ($p = 0.015$). A higher prevalence was seen in women those who are widows/never married (79.6 percent) than those currently married. And a similar trend of high prevalence was those living with children/young relatives (79.5 percent) compared to those living alone/ with spouse only (61.8 percent).

Table 4.6 Association between the prevalence of cataract with socio-demographic characteristics of participants, Kozhikode district, Kerala

Age	Cataract present %(n)	Cataract absent%(n)	Total%(n)
Below 70 years	58.9(66)	41.1(46)	100.0(112)
70 and above	92.6(100)	7.4(8)	100.0(108)
χ^2 with 2 df=34.931 ($p<0.001$)			
Religion			
Hindu	73.4(149)	26.6(54)	100.0(203)
Muslim	100(17)	0(0)	100.0(17)
χ^2 with 1 df=5.993 ($p=0.015$)			
Marital status			
Never married/widow	79.6(113)	20.4(29)	100.0(142)
Currently married	67.9(53)	32.1(25)	100.0(78)
χ^2 with 1df=3.676 ($p=0.055$)			
Living arrangement			
Living alone/spouse only	61.8(21)	38.2(13)	100.0(34)
Living with children/young relatives	79.5(105)	20.5(27)	100.0(132)
Living with spouse & children	74.1(40)	25.9(14)	100.0(54)

χ^2 with 2df=4.689 (P=0.096)			
ALL	75.5(166)	24.5(54)	100.0(220)

Socioeconomic characteristics of participants

Table 4.7 presents the association between cataract prevalence and the socioeconomic characteristics of women aged 60 and above. Considering educational attainment, a higher prevalence of cataract is found in those with lower educational status ($p<0.001$). Occupational status is also a significant indicator, showing a lower burden among those currently working (48.3 percent) when compared to those who were working prior or those who had never worked. No significant association is observed between the prevalence of cataract and socioeconomic class, pension status, and health insurance coverage. However, a higher load is seen in those with pension (77.4 percent) and those without health insurance (80.5 percent).

Table 4.7 Association between the prevalence of cataract with socio-economic characteristics of participants, Kozhikode district, Kerala

Educational status	Cataract present %(n)	Cataract absent %(n)	Total %(n)
Less educated	94.3(66)	5.7(4)	100.0(70)
Educated	66.7(100)	33.3(50)	100.0(150)
χ^2 with 1df=19.657 ($p<0.001$)			
Employment type			
Not employed	79.6(152)	20.4(39)	100.0(191)
Employed	48.3(14)	51.7(15)	100.0(29)
χ^2 with 1df=13.323 ($p<0.001$)			
Socioeconomic class (based on ration card)			
Lower economic class	73.2(71)	26.8(26.8)	100.0(97)
Middle economic class	77.6(52)	22.4(15)	100.0(67)
Higher economic class	76.8(43)	23.2(13)	100.0(56)

χ^2 with 2df=0.498 (p=0.783)			
Pension			
Receiving pension	77.4(154)	22.6(45)	100.0(199)
Not receiving any pension	57.1(12)	42.9(9)	100.0(21)
χ^2 with 1df=4.203(p=0.059)			
Health insurance			
With health insurance	73.2(101)	26.8(37)	100.0(138)
Without health insurance	80.5(66)	19.5(16)	100.0(82)
χ^2 with 2df=4.323(p=0.198)			
ALL	75.5(166)	24.5(54)	100.0(220)

Morbidity profile of participants

The association between cataract and other comorbidities like diabetes, hypertension, stroke, and history of fall among study participants were examined and presented in table 4.8. A slightly higher cataract prevalence is seen in those with diabetes (78.6 percent) and hypertension (78.9 percent) compared to those without these conditions. However, the associations are not statistically significant. Similarly, a history of fall (74.1 percent) does not show a significant association with cataract prevalence. These results suggest that cataract prevalence is high in those with comorbidities, but no significant association were found in this study.

Table 4.8 Association between the prevalence of cataract with morbidity profile of participants, Kozhikode district, Kerala

Diabetes	Cataract present %(n)	Cataract absent%(n)	Total %(n)
Present	78.6(66)	21.4(18)	100.0(84)
Absent	73.5(100)	26.5(36)	100.0(136)
χ^2 with 1df=0.713(p=0.425)			
Hypertension			
Present	78.9(112)	21.1(30)	100.0(142)
Absent	69.2(54)	30.8(24)	100.0(78)
χ^2 with 1df=2.527(p=0.140)			
Fall			
Present	74.1(43)	25.9(15)	100.0(58)
Absent	75.9(123)	24.1(39)	100.0(162)
χ^2 with 1df=0.074(P=0.859)			
ALL	75.5(166)	24.5(54)	100.0(220)

Even though age, education, and type of employment were identified as significant variable in the bivariate analysis, multivariate analysis was not conducted. The variable type of employment with cataract did not provide a logical explanation for development of cataract. Cataract can impact an individual's ability to work, so it's more likely that it influences employment rather than caused by it. Hence, including this variable could mislead the findings, and it was excluded from further analysis.

4.2 Utilization of Eye Care Services and Cataract Surgery Coverage

4.2.1 Estimation of cataract surgery coverage

In all, there were 166 women out of the 220 who had cataract and 104 among them were recommended to have cataract surgery. The cataract surgery coverage for these women is given in table 4.9. Cataract surgery coverage among women aged 60 and above indicates 73.1 percent of those diagnosed with cataract had undergone surgical intervention in at least one eye. However, a percentage (26.9 percent) had not received surgery despite the presence of cataract, highlighting potential barriers to access to eye care services.

Table 4.9 Percentage distribution of women aged 60 and above by cataract surgery coverage, Kozhikode district, Kerala

Surgery done(n) among those who had cataract	Percentage (n)
Cataract in one eye and surgery in one eye	2.9 (3)
Surgery in either one eye	30.8 (32)
Surgery in both eyes	39.4 (41)
No cataract surgery in either eye*	26.9 (28)
Number of women	100.0 (104)

* This includes women who had cataract but had not undergone surgery at all

The place of surgery and payment mechanism for surgeries for the study participants were listed and presented in table 4.10. The majority of surgeries were performed in cooperative hospitals (48.7 percent), followed by private (28.9 percent) and government hospitals (19.7 percent), with a small proportion conducted through camps. Regarding payment, nearly half of the participants paid only partially for the surgeries, and more than a quarter of those who underwent surgery paid

the full amount for the surgery (28.9 percent). More than a fifth of the women who underwent surgery had not paid for it and received treatment for free (22.4 percent).

Table 4.10 Percentage distribution of persons who had undergone surgery by place and cost of surgeries, Kozhikode district, Kerala

Type of provider	Percentage(n)
Government hospital	19.7(15)
Cooperative hospital	48.7(37)
Private hospital	28.9(22)
Camp	2.6(2)
Total	100.0(76)
Type of payment	
Free	22.4(17)
Partially free	48.7(37)
Fully paid	28.9(22)
Total	100.0(76)

The comparison between education level and source of money for treatment in relation with surgery providers and payment mechanisms (see table 4.11). Cooperative hospitals were the top choice by people, where payment is partially free. Educated individuals relied more on cooperative providers (57.5 percent) compared to the less educated (38.9 percent). Government (20.5 percent) services were found higher in use among those have lower education level than educated people (15 percent). Camp services were used exclusively by the less educated (5.6 percent). Based on source of money for treatment, those funding themselves/ spouse's treatment used cooperative services the more (54.5 percent), followed by private (27.3 percent). While, children/young

relatives pay cooperative providers still be in top (47.7 percent), with private (29.2 percent) and government (21.5 percent).

Table 4.11 Percentage distribution of persons who had surgery in different providers by their education and source of money for treatment

Variable	Govt % (n)	Cooperative % (n)	Private % (n)	Camp %(n)	Total %(n)
Less Educated	25.0 (9)	38.9 (14)	30.5 (11)	5.6 (2)	100.0 (36)
Educated	15.0 (6)	57.5 (23)	27.5 (11)	0.0 (0)	100.0 (40)
Spouse / Self	9.1(1)	54.5 (6)	27.3 (3)	9.1 (1)	100.0 (11)
Child/Relative Funded	21.5 (14)	47.7 (31)	29.2 (19)	1.5 (1)	100.0 (65)

Examining payment mechanism with education and source of money for treatment reveal specific patterns (see table 4.12). Most of them were paid through partially free mechanism usually seen in cooperative hospitals, higher proportion among educated (55 percent). However, less educated accessed treatment for free of cost with proportion of 27.8 percent compared to educated individuals (17.5 percent). Similarly, individuals funding themselves/spouse's help for treatment chose partially free options (54.5 percent) and less free services (18.2 percent). While, those supported by children/young relatives for treatment had slightly higher utilization of free services (23.1 percent) than others.

Table 4.12 Percentage distribution of persons who had surgery using different payment methods by their education and source of money for treatment

Variable	Free % (n)	Partially Free %(n)	Fully Paid % (n)	Total (n)
Less Educated	27.7 (10)	41.7 (15)	30.6 (11)	100.0 (36)
Educated	17.5 (7)	55.0 (22)	27.5 (11)	100.0 (40)
Spouse &Self	18.2 (2)	54.5 (6)	27.3 (3)	100.0 (11)
Children & Young Relative	23.1 (15)	47.7 (31)	29.2 (19)	100.0 (65)

4.2.2 Association of Cataract Surgery Coverage and Sociodemographic, Economic, Morbidity Profile of The Study Participants

Sociodemographic characteristics of participants

Out of 166 participants with cataract, 104 were recommended to have cataract surgery. Even after recommendation, 26.92 percent of them did not undergo surgery whereas 30.77 percent underwent surgery for only one eye. I examined the association of different sociodemographic variables with those who had undergone complete cataract surgery, partial surgery, and not undergone any surgery and represented in table 4.13.

Considering the age, participants in an age group above 70 were found to undergo complete surgery than those below 70 years. 34.1 percent of the participants below 70 were not undergone any eye surgery for cataract. However, marital status and living arrangements show that women who were never married/widowed had a higher proportion of undergoing complete or partial surgery than those who are currently married. However, this analysis with age, religion, and marital

status did not show any statistical significance. Women living with children or younger relatives have higher surgery coverage (80.6 percent) than those living alone/ only with a spouse (46.2 percent). This association found significant on comparing those who had surgery and had not ($p=0.027$).

Table 4.13 Association between the cataract surgery coverage with sociodemographic characteristics of participants, Kozhikode district, Kerala

Age	Complete surgery done%(n)	Partial surgery done%(n)	Cataract surgery not done%(n)	Total%(n)
Below 70 years	39.0(16)	26.8(11)	34.1(14)	100.0(41)
70 and above	44.4(28)	33.3(21)	22.2(14)	100.0(63)
χ^2 with 2 df= 1.826 ($p=0.401$)				
Religion				
Hindu	42.2(38)	30.0(27)	27.8(25)	100.0(90)
Muslim	42.9(6)	35.7(5)	21.4(3)	100.0(14)
χ^2 with 2 df=0.311 ($p=0.935$)				
Marital status				
Never married/widow	44.4(32)	34.7(25)	20.8(15)	100.0(72)
Currently married	37.5(12)	21.9(7)	40.6(13)	100.0(32)
χ^2 with 2df=4.664 ($p=0.097$)				
ALL	42.31(44)	30.77(32)	26.92(28)	100.0(104)

Socioeconomic characteristics of participants

Examining the association between cataract surgery and socioeconomic characteristics, helped to identify the characteristics of women who were likely to undergo cataract surgery across educational status, occupational status, socioeconomic class, pension and health insurance

coverage. The results are presented in table 4.14. This analysis did not reveal any statistically significant association but found certain trends in surgery coverage. Less educated and non-employed women had a higher proportion of completing surgery in both eyes than those who are educated and currently employed. Receiving a pension and having insurance coverage showed a higher surgery utilization, while lesser number of individuals in study did not receive pension lead to exclusion of this group for chi-square test. Considering the financial support for treatment, those who are supported by children/young relatives have a higher surgery utilization than those supported by spouses or themselves.

Morbidity profile of participants

Comparing cataract surgery coverage and the presence of comorbidities such as diabetes, hypertension, stroke, and history of falls among participants results indicate that there are variations across different groups, but none of these associations were statistically significant. (see table 4.15).

Participants with diabetes have a lower surgery coverage than those without diabetes. A similar trend was seen among those who had a history of stroke and fall. Among the stroke survivors, a notable proportion did not undergo surgery. Individuals with hypertension showed almost identical distribution of surgery status.

Table 4.14 Association between the cataract surgery coverage with socio-economic of characteristics participants, Kozhikode district, Kerala

Educational status	Complete surgery done%(n)	Partial surgery done%(n)	Cataract surgery not done%(n)	Total%(n)
Less educated	48.9(22)	31.1(14)	20.0(9)	100.0(45)
Educated	37.3(22)	30.5(18)	32.2(19)	100.0(59)
χ^2 with 2 df= 2.227 (p=0.328)				
Employment type				
Not employed	44.3(43)	29.9(29)	25.8(25)	100.0(97)
Employment	14.3(1)	42.9(3)	42.9(3)	100.0(7)
Socioeconomic class (based on ration card)				
Lower economic class	41.5(17)	34.1(14)	24.4(10)	100.0(41)
Middle economic class	44.4(16)	25.0(9)	30.6(11)	100.0(36)
Higher economic class	40.7(11)	33.3(9)	25.9(7)	100.0(27)
χ^2 with 4df=0.945 (p=0.918)				
Health insurance				
With health insurance	43.5(27)	30.6(19)	25.8(16)	100.0(62)
Without health insurance	40.5(17)	31.0(13)	28.5(12)	100.0(42)
χ^2 with 2df=0.128 (p=0.938)				
Source of money for treatment				
Spouse/self	33.3(6)	27.8(5)	38.9(7)	100.0(18)
Children/young relatives	44.2(38)	31.4(27)	24.4(21)	100.0(86)
χ^2 with 2df=1.635(P=0.481)				
ALL	42.31(44)	30.77(32)	26.92(28)	100.0(104)

Table 4.15 Association between the cataract surgery coverage with morbidity profile of participants, Kozhikode district, Kerala

Diabetes	Complete surgery done%(n)	Partial surgery done%(n)	Cataract surgery not done%(n)	Total %(n)
Present	38.1(16)	28.6(12)	33.3(14)	100.0(42)
Absent	45.2(28)	32.2(20)	22.6(14)	100.0(62)
χ^2 with 2df=1.481 (p=0.477)				
Hypertension				
Present	43.1(31)	30.5(22)	26.4(19)	100.0(72)
Absent	40.6(13)	31.2(10)	28.1(9)	100.0(32)
χ^2 with 2df=0.059(p=0.971)				
Fall				
Present	39.3(11)	28.6(8)	32.1(9)	100.0(28)
Absent	43.4(33)	31.6(24)	25.0(19)	100.0(76)
χ^2 with 2df=0.531 (P=0.767)				
ALL	42.31(44)	30.77(32)	26.92(28)	100.0(104)

4.3 Barriers to Undergoing Cataract Surgery

4.3.1 Characteristics of participants who did not undergo surgery

Ideally, multinomial logistic regression would be appropriate to analyze factors associated with cataract surgery. However, due to the limited number of participants in the category ‘recommended but did not undergo surgery’ (n=28), doing this analysis was not feasible. Due to this limitation, a descriptive analysis is done to explore the characteristics of 28 participants who were recommended for cataract surgery but did not undergo it. This will allow us to identify the potential factors contributing to their inability to utilize surgical services.

The characteristics of participants who did not undergo surgery after being recommended surgery are listed in table 4.16. Most of the participants who did not undergo surgery belong to the age group 60-69 years. Many were widowed and living with their children or young relatives. A notable proportion of them were educated and from middle-economic households. A higher proportion were never employed, but many of them received pensions and health insurance coverage. Considering the morbidity profile, a higher proportion of them were hypertensive, but very few of them had a history of falls or stroke.

Table 4.16 Characteristics of women aged 60 and above who did not undergo cataract surgery after having it recommended, Kozhikode district, Kerala

Characteristic		Percentage (n)
Age Group	60–69 years	50.0 (14)
	70–79 years	28.6 (8)
	80 and above	21.4 (6)
Religion	Hindu	89.3 (25)
	Muslim	10.7 (3)
Marital Status	Currently married	46.4 (13)
	Widow	53.6 (15)
Living Arrangement	Living alone/ spouse only	25.0 (7)
	With children/young relatives	46.4(13)
	Living with spouse& children	28.6(8)
Education Level	Less educated	32.1 (9)
	Educated	67.9(19)
Type of Occupation	Not employed	89.3 (25)
	Employed	10.7 (3)
Economic Status	Lower economic status	35.7 (10)
	Middle economic status	39.3 (11)
	Upper economic status	25.0 (7)

Characteristic		Percentage (n)
Pension Status	No pension	7.1 (2)
	With pension	92.9 (26)
Health Insurance	No health insurance	42.9 (12)
	With health insurance	57.1 (16)
Source of Income for Treatment	Spouse/self	25.0 (7)
	Children/young relatives	75.0 (21)
Diabetes	Diabetes absent	50.0 (14)
	Diabetes present	50.0 (14)
Hypertension	Hypertension absent	32.1 (9)
	Hypertension present	67.9 (19)
Stroke	No stroke	89.3 (25)
	With stroke	10.7 (3)
History of Falls	No fall	67.9 (19)
	With fall	32.1 (9)
ALL		100.0(28)

4.3.2 Barriers to undergoing cataract surgery

Among the study participants, who were diagnosed with cataract, 104 were recommended surgery. Of these, close to three fourths (73.1 percent) had undergone surgery. A small percentage did not undergo the recommended surgery. By analyzing the reasons for not taking up treatment, we found a range of psychological, economic, social and medical barriers. (see table 4.17)

In this group, women who have diagnosed with cataract in both eyes and did not undergo surgery in any eye seems to constitute a higher number. A notable proportion of participant in this group were reconciled to the current eyesight or feared surgery. Fear related factors include fear of surgery and the potential loss of remaining eyesight. Social factors such as care giving responsibility of women, the absence of companion, fear of becoming burden on children also

contribute to the decision on delay or avoid surgery. Some of them have accepted it as age-related issue whereas some lack family support for undergoing surgery. Financial constraints had found as another significant barrier.

A notable proportion of participants had undergone surgery in one eye even after being diagnosed with cataract in both eyes. Some of them were told to wait for the development of cataract. Other than this, most of them were reported as satisfied by their current eyesight. Additionally, pre-existing medical conditions and few reported negative experiences from past treatment such as failed surgical procedures or dissatisfaction with previous cataract surgery caused reluctance for further treatment. Lack of mobility due to age and pre-existing eye conditions made some unsuitable for surgery. Some reported that they were feeling weary after multiple surgeries due to their existing medical conditions and were reluctant to undergo another procedure.

Table 4.17. Distribution of women who had cataract but did not undergo surgery by reasons for not undergoing surgery

Reasons	Women with cataract in one eye and did not undergo surgery*	Women with cataract in both eyes and did not undergo surgery in any eye*	Women with cataract in both eyes and underwent surgery for only one eye* (Partial treatment)
No need of immediate surgery	0.5(2)	4.1(1)	28.9(7)
Satisfied with current eyesight	0.25(1)	25.0(6)	18.8(6)
Waiting for surgery	0.25(1)	8.3(2)	3.1(1)
Caregiving role	-	20.8(5)	3.1(1)

Nobody to accompany	-	20.8(5)	12.5(4)
Lack of financial assistance	0.25(1)	16.7(4)	12.5(4)
Accepting it as age-related issue	-	20.8(5)	12.5(4)
Fear of surgery		25.0(6)	
Fear of losing remaining eyesight	-	12.5(3)	-
Fear of being a burden on children	-	12.5(3)	-
Lack of family support	-	4.1(1)	-
Having other medical conditions	-	16.7(4)	9.4(3)
Hospital stays	0.25(1)	-	-
Existing eye conditions	-	-	3.1(1)
Lack of mobility due to age	-	-	6.3(2)
Failed surgical procedure	-	-	6.3(2)
Being jaded with past surgery	-	-	3.1(1)
The number of people reported barriers	4	24	32

*Multiple barriers were reported and therefore the percentages do not add to 100 across each group

Individuals who reported ‘being satisfied with current eyesight’, ‘fear of surgery’, and ‘accepting cataract as an age-related issue’ tended to have lower educational levels and were from economically disadvantaged groups. Another reason that emerged was the caregiving role of women. This was predominantly reported by relatively more educated and those belonging to middle-income households. A similar pattern was observed among participants who reported the absence of someone to accompany them for surgery. People with limited education were also concerned about their other medical conditions and losing remaining sight after surgery. Financial assistance as barriers were reported by both less educated and educated participants with low to middle economic status and becoming a burden on children was also their concern. A similar pattern of reasons for not undergoing surgery was reported among those who had undergone surgery for one eye. However, participants from higher economic groups stated different sets of barriers. A commonly cited reason was a lack of family support, often because of their children’s perception of declining vision as age-related. Additionally, previous bad experiences with surgery and some mentioned they had already undergone multiple surgeries were mainly stated by those who had undergone surgery for one eye. Interestingly, even this group, notes caregiving responsibility as a barrier.

Summary

- The estimated prevalence of visual impairment was 47.7 percent CI (41.1percent to 54.3 percent) among women aged 60 and above. More than half of the participants (52.3 percent) had no visual impairment. However, a significant proportion experienced vision problems in both eyes (27.7 percent), while 20 percent had visual impairment in at least one eye.

- The prevalence of cataract among women aged 60 and above in Kozhikode district was 75.4 percent CI (69.7 percent- 81.1 percent). There was a higher burden of bilateral cataract (68.6 percent) whereas 6.8 percent had cataract in only one eye.
- Cataract surgery utilization among women aged 60 and above indicates 73.1 percent of those diagnosed with cataract and recommended for surgery (104) had undergone surgical intervention in at least one eye. However, a percentage (26.9 percent) had not received surgery despite the presence of cataract.
- Regarding the surgery, the majority of surgeries were performed in cooperative hospitals (48.7 percent), followed by private (28.9 percent) and government hospitals (19.7 percent), with a small proportion conducted through camps.
- Nearly half of the participants paid only partially for the surgeries (48.7 percent), and more than a quarter of those who underwent surgery paid the full amount for the surgery (28.9 percent).
- Participants who had undergone complete cataract surgery were above the age group of 70 (44.4 percent), less educated, not working, and mostly widows. Most of the people were living with their children/ young relatives and they were not affected by other comorbidities like diabetes.
- Women aged 60 and above who did not undergo surgery even after being recommended surgery reported 'satisfied with current eyesight' (25 percent), 'fear of surgery' (25 percent), 'caregiving role' (20.8 percent), and 'nobody to accompany for surgery' (20.8 percent) as main barriers.

CHAPTER 5

DISCUSSION

5.1 Summary of the findings

The prevalence of visual impairment in women who are 60 and above was found as 47.7 percent. Within this demographic, 27.7 percent exhibited visual impairment in both eyes. The likelihood of experiencing visual impairment increases with advancing age. A higher burden of visual impairment was observed among individuals with lower educational attainment and those facing economic hardships. Participants diagnosed with diabetes mellitus and hypertension had a marginally elevated prevalence of visual impairment. Out of 220 participants, 75.4 percent (166 individuals) were diagnosed with cataract. Of these, 68.6 percent had cataract in both sides, while 6.8 percent had cataract in just one eye. Among the 166 women with cataract, 62.7 percent (104) were advised to pursue immediate surgery following diagnosis by a physician. Out of this, 73.1 percent proceeded with the surgery, and 26.9 percent of those requiring surgical treatment did not do so. Most of surgeries was done in cooperative hospitals (48.7 percent), followed by 28.9 percent at private facilities and the remaining went to government hospitals. When we look at the means used to finance the surgery, 22.4 percent of women accessed surgical procedures at no expense, 48.7 percent enjoyed partial financial help, and 2.9 percent had to pay the total treatment costs.

Barriers to undergoing cataract surgery

Analysis of participants with bilateral cataract indicated many had not undergone surgery. Reasons included contentment with current vision, fear of surgery, caregiving duties, lack of family support, acceptance of cataract as age-related, and financial constraints. A significant

number had only unilateral surgery, often due to advice to delay further surgery or satisfaction with their vision. Reluctance for additional surgery stemmed from pre-existing health issues, negative past experiences, mobility limitations, and fatigue from previous procedures.

Participant characteristics such as education and economic status influence reasons for avoiding surgery. Individuals with lower education and poorer economic backgrounds reported satisfaction with their current vision, whereas advanced age (over 80) in similarly disadvantaged groups was associated with surgical fears. Caregiving duties and lack of support were obstacles for the more educated, middle-income women. Limited education correlated with worries about comorbidities and post-surgery vision loss. Higher economic status individuals mentioned lack of familial support, adverse past surgical experiences, and previous unilateral surgery as failure, with caregiving responsibilities, all contributed to the reasons for not doing the surgery.

5.2 Implications of the Levels of Visual Impairment and Cataract Among Women in Kozhikode District

The prevalence of visual impairment (VI) observed in the present investigation (47.7 percent) surpasses that reported in the Hyderabad Ocular Morbidity in Elderly Study (HOMES) conducted within 'homes for the aged' in 2022, where the prevalence was documented at 30.1 percent for the identical age category but in both men and women (Marmamula et al., 2021). The National Blindness and Visual Impairment Survey conducted from 2015 to 2019 indicated a prevalence of VI at 15.04 percent among individuals aged over 50 across 31 districts in India (India Vision Atlas NPCB, 2019). The Longitudinal Ageing Study in India (LASI) conducted between 2017 and 2019 encompassed 35 states and union territories (excluding Sikkim) and identified that the prevalence of moderate to severe visual impairment (VI) was significantly

higher in females, attaining a rate of 24 percent, compared to 20 percent in males (Ehrlich et al., 2022). High prevalence observed in the present study may be attributed to the exclusive focus on women aged 60 and above. NPCBVI 2015-19 found Cataract was the principal cause of 66.2 percent of total blindness, 80.7 percent of severe VI, and 70.2 percent of moderate VI in population aged 50 years and above (*India Vision Atlas NPCB*, 2019). The present study found a prevalence of 75.7 percent among women aged 60 above in the total population, which is higher than other studies. The study conducted in Kerala among the same age group as the present study found a prevalence of cataract in women as 57.4 percent. It was found that prevalence of cataract in women less than 75 years was 42.4 percent it was only 26.6 percent in men. In women who were more than 75 years, the prevalence was 72 percent compared to men (36.8 percent). This study described the gender difference in cataract prevalence (Anitha, 2009).

Age has a positive association with visual impairment since the prevalence of VI increases with advancing age. Natural degeneration of ocular structures increases the risk of age-related eye diseases. Individuals in the older age group delay seeking eye care, believing that declining vision is a natural part of aging. This restricts treatment possibilities for early correction and further development into advanced stages of eye conditions. A similar trend is seen in cataract prevalence. This aligns with findings that indicate the prevalence of visual impairment escalates with age. Specifically, the prevalence was recorded as 2.4 percent among individuals aged 40-49 years, increasing to 39.0 percent in those aged over 70 years (Gupta et al., 2015). Barman and Mishra explain how eye care seeking behavior changes with increasing age and visual impairment. Among older adults, visual impairment is considered to be inevitable. It is thought to be painless and not serious. Because of this many people do not seek appropriate

care. People in the young old group (ages 60-69) think visiting the doctor is linked with being very old or weak. This leads to delay in seeking care for young older adults with diminished vision. Individuals are more likely to attribute limited physical activity rather than impaired vision, which restrict their activities inside and outside the house. This results in delayed care seeking (Barman and Mishra, 2020). In the present study, educational attainment had a significant association with both VI and cataract. Higher prevalence is found among those with lower educational levels. The inability to read among the less educated may cause difficulty in recognizing a gradual change in vision. Even after identifying the change, their health-seeking behavior will depend upon health information to which they may have limited access. Older women may be lesser educated as they belong to older cohorts, and this again strengthens the observed association between education levels and prevalence of cataract. Similar results were found in other studies related to VI and cataract (Ehrlich et al., 2022), (Malhotra et al., 2018), (Anitha, 2009). The study included religious groups, and although women from the Muslim community in the sample were relatively small, Muslim identity had a significant association with a higher prevalence of VI and cataract. Further exploration revealed that women in the Muslim community having VI/ Cataract were mostly less educated, highlighting the role of education. However, these women stay in economically better households (upper and middle economic status), which can provide financial assistance for health-seeking, and yet, they have untreated eye conditions. This needs further exploration. Employment status of women was found significant in prevalence of cataract and VI, where unemployed individuals with higher burden. Studies found higher burden of cataract with previous occupation (Anitha, 2009). Visual capacity had a place while determining employment of an individual since it measures

productivity of people generally. Essentially what this indicates is that those whose vision is not impaired continue to work.

The present study found widowed or never married women and living with children or young relatives were found to have a higher prevalence of VI and cataract. This is similar to various other studies (Ehrlich et al., 2022), (Malhotra et al., 2018). This may be due to dependency on others for financial support that may delay care seeking by reducing personal autonomy and decision making. They may have a tendency to prioritize the needs of other family members over their own health.

The study found a higher burden of VI among those with health insurance and pension. The possible reasons indicate that having a better economic status will not ensure utilization of eye care service. It may be also influenced by other social responsibilities, health literacy and perceived need of care.

Among the elderly residing in 'homes for the aged,' 30.1 percent were found to be visually impaired, and individuals diagnosed with diabetes had reduced odds of developing VI (Marmamula et al., 2021), whereas the present analysis indicates a greater proportion of VI and cataract within the diabetic and hypertensive individuals, but this association was not statistical significance. It is possible that such women with co-morbidities focus on managing their co-morbidities like hypertension and diabetes than visual impairment.

5.3 Cataract Surgery Utilization

In the present study, out of 166 cataract patients, 104 individuals were recommended surgery. The remaining 62 people with cataract did not reach a stage where they required surgery. Among these 104 people, 73.1 percent (76) individuals underwent surgery, where 26.9 percent had not. Individuals who had undergone surgery show a pattern in their sociodemographic and

socioeconomic characteristics. Similar results were found in as per data from the Longitudinal Ageing Study of India (2017-19), 27.5 percent of older adults who needed surgery did not utilize cataract care. Understanding the cataract treatment disparities among older adults from LASI found prevalence of cataract as 14.3 percent which was higher among women than in men. Among cataract patients, 27.5 percent of older adults aged 45 and above did not receive surgery. The gap persisted across different categories like females, poor and illiterate (Singh and Mohanty, 2024). The study conducted in Chedamangalam panchayat, Kerala found most people done surgery in a private hospital (58.1 percent) when compared to government and charitable trust (Anitha, 2009). In present investigation, 48.7 percent utilized cooperative facilities for undergoing surgery and paid partially for it. This denotes the prevalence of cooperative hospitals in the Malabar region. This can be traced back to health care privatization initiated during the early 1990s. This was following government reforms that reduced taxes on medical equipment and liberalized private investment. In Malabar region, gulf remittance and access to international financing strengthened this. Starting from private hospital, then to super-specialty and diagnostic center now in to corporatization, which focused mainly on profit making with advanced technologies (Wilson, 2010). This may have led to development of cooperative hospitals, which provide quality service in affordable rate for the public. On comparing, education levels and source of money for treatment revealed that educated and those who support themselves or had spouse's income, were found using cooperative and private hospitals for surgery and they pay partially and/or completely for this. This may be due to educated individuals are likely to seek organized services with shorter waiting time and better patient experiences associated with cooperative and private settings. Similarly, individuals who financed their own/ their spouse's income for treatment may have autonomy

in selecting provider based on comfort and quality rather than financial hardship. Conversely, less educated people who are mostly funded by children/ young relatives had found to using government/ camps which offer free surgeries than educated people. This indicates financial dependency and low decision-making power among them, and this could direct them to prefer more affordable choices like government services. Preference of selecting providers will also depend upon financial condition of their children. Children/young relatives may come from lower economic background could opt free services or those from higher economic household could afford to pay for private services. This will completely depend on who pays for surgery not the person who needs surgery due to their dependency.

In my study, participants aged above 70 were found to have complete or partial surgery. This may be because age aggravated the condition of the eyes and surgery becomes unavoidable. Women in the age group 60-69 years, most of them were found to be currently working. It suggests that they may have cataract but don't require surgery and are able to continue work with adequate vision. Women who were never married/widows had a higher chance of being operated when compared to those who were currently married. Women who were living with spouses and needed cataract surgery were less likely to get it when compared to those living with children and other younger relatives. One possible explanation for this may be women who are living with children/young relatives may receive more support for undergoing surgery since they understand the need for timely utilization of eye care services. These younger members might be influencing the decision making and this in turn facilitate women to receive appropriate treatment. A similar pattern was seen in the case of a source of income for treatment, where those who had financial support from their children/young relatives had undergone surgery more frequently than those who spent for themselves or had their expenses

met by spouses. The other study in Kerala, showed a lower surgery coverage in women who were illiterate and higher coverage where they pay for themselves (Anitha, 2009). Contradicting this finding, the present study shows a higher percentage of less educated and unemployed participants had undergone complete and partial surgery with the support of children/young relatives. The observed difference reflects family support and highlights the importance of assistance and having a person to provide care during and after surgery for women aged 60 and above. Educated and employed individuals may be self-reliant in covering health-related expenses and this could influence decision-making around surgery, as they may have different priorities. Comparing with the present study, for women aged 60 and above receiving eye treatment, the cost is usually shared by their children. They play an important role by providing information, financial and emotional support to their mothers (Neyhouser et al., 2018). The current study identified pension status and health insurance as positively correlated with utilization of surgery, where the other study found that those with medical reimbursement had better access to surgery (Anitha, 2009).

I examined the association between having diabetes, affected by stroke or experiencing falls with undergoing cataract surgery among these women. Those having these co-morbidities were less likely to undergo surgery when compared to those without these co-morbidities. This may result from higher surgical risk in diabetes patients and medical clearance challenges for stroke patients. Additionally, morbidity like falls may limit the mobility of the patient resulting in reduced access to care. Moreover, when individuals have other comorbidities, the health care priority may shift towards managing systemic illness rather than doing eyesight correction. These people can be grouped as a high-risk elderly population. Integrating cataract screening and surgical clearance assessment along with chronic disease and geriatric care programs will

facilitate early detection and referral. Subsequently, high-risk people can have safe surgery and improved eyesight.

5.4 Addressing Cataract Surgery Barriers

Among the individuals who required surgery, 26.9 percent did not undergo surgery. Most of the people in this group were aged below 70 years, were educated and belonged to middle-economic households. These characteristics typically correlate with better health-seeking behavior in light of better information and economic advantages than those with less education and low economic status. The other study found 41.3 percent of women with cataract had some barriers for accessing care comparing men (37.1 percent), revealing the gender difference. This previous study found higher proportion of barriers among lower economic class, less education and those who dependent on others for surgical treatment (Anitha, 2009). This difference could be because my study focused on exclusively on women and helped to find patterns within them. This in turn revealed social barriers that hindered surgery. The primary reason cited was most women were primary caregivers within their families for husbands and children. Additionally, the lack of someone to accompany them to the health facility for surgery emerged as another barrier. This highlights how social responsibilities and limited support make it difficult for women to prioritize their own health even with advantages of education and economic stability. Despite of smaller number, the category of individuals living alone or only with spouse only had a lower utilization of surgery possibly due to lack of support. This highlights the need for support for women with social responsibilities. Other studies have also reported ‘nobody to accompany’ as a major barrier for not accessing eye care by both women and men (Anitha, 2009).

Addressing barriers of less educated and economically disadvantaged people found different patterns. Most of them were satisfied with their current eyesight and perceived cataract as a natural and age-related condition. This normalizes the diminished eyesight with age which contributes to a lack of perceived need for surgery. Furthermore, fear-related concerns – fear of surgery itself, fear of losing remaining vision, and worries about existing medical conditions were commonly cited. This finding reflects the health beliefs and limited health literacy among this group. The perceived risks of surgery and other medical conditions also influence decision-making. Irrespective of economic and educational background, many participants expressed concern about the lack of financial assistance and fear of being a burden to their children. This addresses a broader issue of dependency of older people on their children, leading to hesitancy in seeking care. We need an elder-friendly financial support system to meet such challenges. Similar results were reported by study finding barriers of seeking care among the elderly mainly cited ‘no money’ and ‘no escort’ as major barriers. This indicates dependency of elderly for finances and escort due to living alone and mobility issues (Marmamula et al., 2022b).

A qualitative exploration on gender barrier to eye care in Cambodia identified demand side and supply side barriers for women accessing care. Often women have less control over their own health decisions. As the main caregivers in the family, they need and get permission from their family to manage household work and caregiving before they can go for medical care. Women, especially older and less educated are more likely to receive poor or incorrect information as their main source is word of mouth. And they have little experience and familiarity with health system which also creates a barrier for accessing care (Neyhouser et al., 2018).

5.5 Limitations and Strengths of the Study

Limitations: The study employs a cross-sectional design, and therefore, all the limitations of cross-sectional studies with respect to causation apply to the present study. Due to simultaneous measurement of exposure and outcome variable, this study was not able to establish causal relationships between associated factors and visual impairment or cataract prevalence. Additionally, the sample size of 220 participants resulted in limited numbers in certain subgroups, and therefore, further multi-variate modelling of the bivariate association was not possible. Working women were not available at time of data collection and this resulted in their underrepresentation. Another drawback of the study is eye examination for cataract was carried by pen torch only.

Strengths: The data collection and eye examination were carried out by a single investigator thus it eliminating the chance of inter-observer bias. The study explored barriers of cataract surgery through open-end questions which offer better understanding of the reasons for not undergoing surgery even though it was recommended.

5.6 Conclusions

The study revealed a higher prevalence of visual impairment and cataract, exposing burden of eye diseases among women aged 60 and above in Kerala. One of the main objectives was to understand how these women access care, and this was determined through cataract surgery utilization. A substantial percent of those recommended surgery had undergone the procedure, but close to 30 percent had not. The reasons for this gap are rooted in social structures- many women were unable to prioritize their own health due to responsibilities as primary caregivers for families. They seem to have adequate education and economic stability to undergo surgery. Additionally, financial and functional dependency in women aged 60 and above further limit

their ability to seek care. Among individuals with lower educational levels and from economically disadvantaged backgrounds, there is misinformation resulting in their perceiving risks associated with surgery. The study found that support and having someone to accompany from the family played important role in utilization of surgery. Cataract is easily treatable condition with a cost-effective procedure that is made accessible across all economic segments. The study highlights the importance of addressing the social barriers to cataract surgery among women aged above 60, and not merely improving access to those who cannot afford it financially in the Kerala context.

5.7 Recommendations

The study brings attention to the importance of providing targeted support system to improve cataract surgery coverage among women age 60 and above. Some

- Supporting women aged 60 and above with trained volunteers accompany them to and from the cataract surgery center will help those are in need of social support.
- Developing schemes with local self-help groups to provide trained temporary caregivers to support at home during surgery and recovery period for women aged 60 and above will enable targeting women who are not undergoing surgery because of their familial care giving roles.
- Establish mobile surgical units to conduct surgeries closer to home for those having mobility issue with pre- surgical counselling and reassurance.
- Integrating cataract screening and referral services into existing geriatric care and chronic disease management can ensure coordinated care for those at higher surgical risk.

- Women who were less educated and also from economically weaker sections had misconceptions about the risk of surgery. This needs mitigation possibly through health literacy through an integrated geriatric care program.



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CLUSTER RECRUTMENT SHEET

Start date & time:

[illegible]

Completion date & time

ANNEXURE II

Achutha Menon Centre for Health Science Studies (AMCHSS) Sree Chitra Tirunal Institute for
Medical Sciences & Technology (SCTIMST) Trivandrum- 11

Informant serial number:

INFORMED CONSENT FORM

I confirm that I have read/ heard and understood the information regarding the study “ACCESS TO EYE CARE SERVICES AMONG VISUALLY IMPAIRED WOMEN IN VADAKARA BLOCK PANCHAYAT, KOZHIKODE” as provided in the participant information sheet. All of my questions concerning this study have been answered and all the possible harms, discomforts, and benefits (if any) of this study have been explained to me. I also understand that my identity and personal information will be kept confidential. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without consequences.

By signing this form, I agree to participate in this study.

I agree to be interviewed

☐

I agree to be recorded

☐

I agree to participate in the eye examination

☐

A copy of this form has been given to me.

Date:

Place:

Name of participant
impression

Signature/Thumb

Witness (In case of Thumb impression)

Principal investigator name
Signature

ANNEXURE III

Achutha Menon Centre for Health Science Studies (AMCHSS) Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST) Trivandrum- 11

PARTICIPANT INFORMATION SHEET

I am Dr Anavadhya J Prakash, currently pursuing Master of Public Health (MPH) at Achutha Menon Centre for Health Science Studies (AMCHSS), Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala. I am doing a study on “ACCESS TO EYE CARE SERVICES AMONG VISUALLY IMPAIRED WOMEN IN VADAKARA BLOCK PANCHAYAT, KOZHIKODE” as a part of my course work, under the guidance of Dr. Mala Ramanathan, Professor Senior Grade at AMCHSS.

You are being invited to participate in this research study. Before you decide whether or not to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read / listen the information sheet and the consent form carefully and feel free to ask for clarifications you may have.

Purpose of the study

The purpose of the study is to estimate number of people with low vision and to explore risk factors associated with it. It also tries to find the utilization of eye care services and cataract surgery. The barriers of not undergoing surgery and factors facilitating to undergo surgery will be explored.

Procedure

If you are willing to participate in the study, you will be asked to complete an interview schedule which include questions focusing on demographic information and history of chronic illness. I will examine your vision using letter E chart, which will be shown in mobile in 4 orientations. You only had to point in the direction as you perceive the arms of the E to be pointing and i will use the touch screen to swipe accordingly and it will be recorded. The eye examination will carry out with torch light to check the lens to find cataract. The questions related to utilization of eye care service and cataract surgery will be documented using interview schedule. The procedure will take approximately 25-30 minutes of your valuable time.

Potential risk and discomfort

Participating in the study imposes no risk to your health. However, examining vision using charts may cause temporary inconvenience.

Possible benefit

Your participation in the study will give a primary screening of your eyes and eye sight. However, the result of the study will be helpful for understanding of eye care services and cataract surgery.

Cost and financial benefit

There is no cost for participation in this study. Participation is completely voluntary and no payment will be provided.

Confidentiality

Information obtained in this study will be kept strictly confidential. A participant identification number will be assigned to each participant which will help to maintain the strict confidentiality of the data collected. Your name will not be used in reporting information in publications or reports.

Withdrawal from the study

Your participation in the study will be completely voluntary. You are free and have the right to withdraw at any time during the study. There will be no penalty for withdrawal or not participating in the study.

Contact information If you have any research-related questions or you would like to verify my credentials, you may contact me or guide or member secretary of our institute's ethics committee at the following address:

Dr Anavadhya J Prakash
Principal Investigator
MPH 2023, AMCHSS, SCTIMST
Contact Number: 7994714635

Dr Srinivas G
Member secretary
Institutional Ethics Committee
SCTIMST, Trivandrum- 695011
Office: 04712524689

Email: jpanavadhya@gmail.com

Email: iec.mem.sec@sctimst.ac.in

Guide:

Dr Mala Ramanathan

Professor Senior Grade

AMCHSS, SCTIMST,

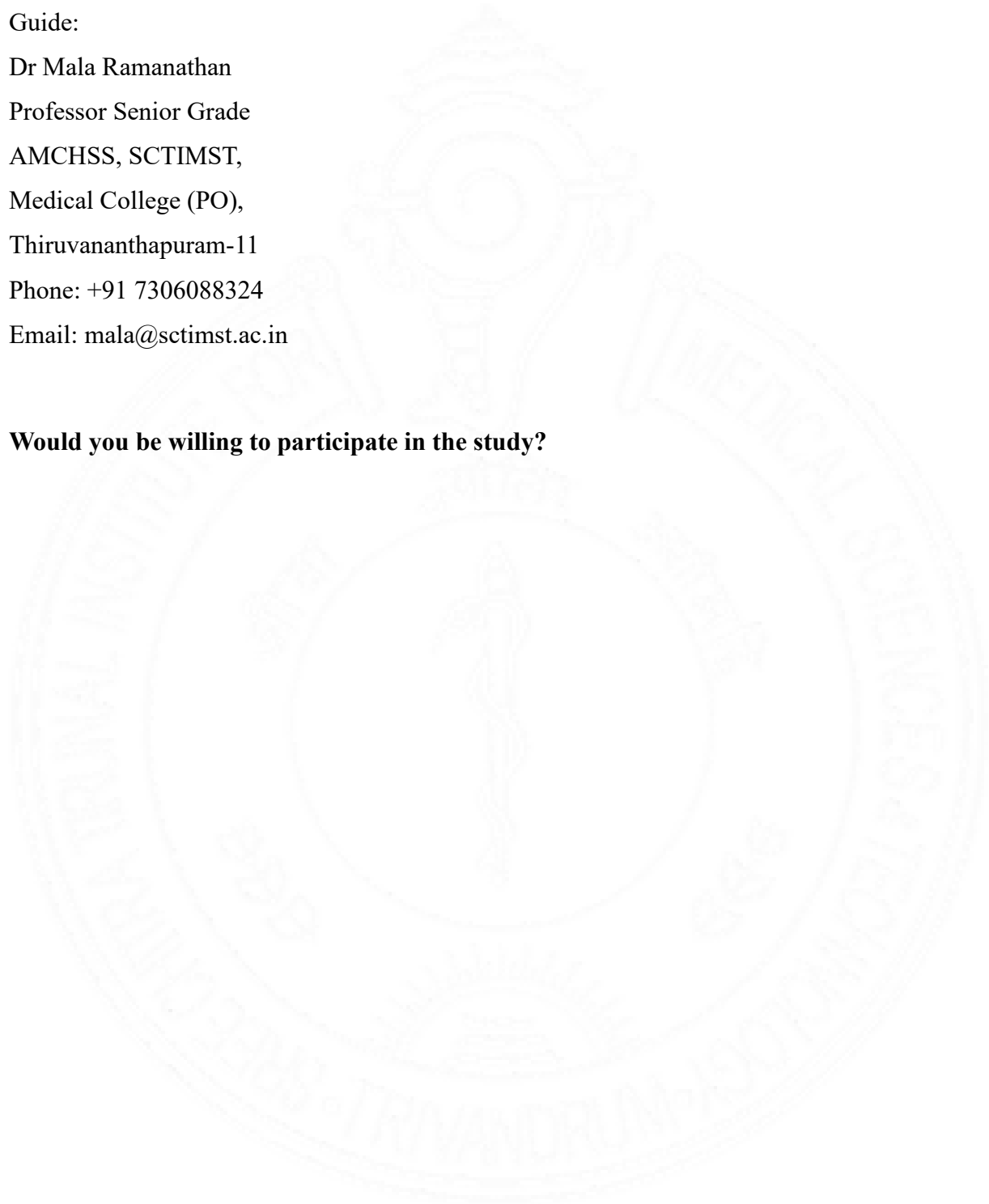
Medical College (PO),

Thiruvananthapuram-11

Phone: +91 7306088324

Email: mala@sctimst.ac.in

Would you be willing to participate in the study?



ANNEXURE IV

ACHUTHAMENON CENTRE FOR HEALTH SCIENCE STUDIES, SCTIMST,
THIRUVANANTHAPURAM-11

“ACCESS TO EYE CARE SERVICES AMONG ELDERLY WOMEN WITH VISUAL
IMPAIRMENT IN VADAKARA BLOCK, KOZHIKODE DISTRICT”

INTERVIEW SCHEDULE

Ward No:

Name of Panchayat:

Name of ward:

Cluster No:

House hold No:

Date

&time:

Name:

Address:

Unique code for
individual:

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(single digit panchayat code, two digits ward code, two digits house code for individual)

1.What sex were you assigned at birth, on your original birth
certificate?

Female	Male	Other
--------	------	-------

2.What is your age as per any of your government ID card?

--

[note in terms of the last celebrated birthday]

1.DEMOGRAPHIC DETAILS

<u>Q. No</u>	<u>Questions</u>	<u>Answers</u>	
3.	What is your current gender?	☐ 1.Female ☐ 2.Male	

		☐ 3.Don't know ☐ 4.Prefer not to answer	
4.	Please select your Religious affiliation. [read out options]	☐ 1.Hinduism ☐ 2.Islam ☐ 3.Christianity ☐ 4.Others ☐ 5.Not reported	
5.	From following, select social group you belong to? [Read out options]	☐ 1.General ☐ 2.Scheduled tribe (ST) ☐ 3.Scheduled caste (SC) ☐ 4.other backward class (OBC) ☐ 5.Others ☐ 6.Not reported	
6.	What is the highest level of education you have completed?	☐ 1.Not literate (i.e. not able to read or write a simple message with understanding in Malayalam) ☐ 2.literate with non-formal education (literate without any schooling) ☐ 3.Lower primary (1-4) ☐ 4.Upper primary (5 - 7) ☐ 5.Secondary (8-10) ☐ 6.Higher secondary (+1, +2) ☐ 7.Graduate ☐ 8.Post graduate and above	
7.	At what age did you experience your first menstrual period (menarche)? [note in terms of the last celebrated birthday]		
8.	At what age did you experience menopause?		

	[note in terms of the last celebrated birthday]		
9.	Marital status	☐ 1.Never married ☐ 2.currently married ☐ 3.Widowed ☐ 4.divorced/separated	
10.	Who are all living with you in this house?	☐ 1.Living alone ☐ 2.Living with spouse only ☐ 3.Living with children and spouse ☐ 4.Living with children ☐ 5.Living with relatives ☐ 6.Other (please specify)	
11.	Are you currently in paid employment?	☐ 1.Yes ☐ 2. No	If No, go to question 13
12.	Which of the following broad activities maximum income was derived by the you during last 1 year preceding the date of survey?	☐ 1.Not employed ☐ 2.Self-employment ☐ 3.Monthly wage employment ☐ 4. Daily wage employment	
13	Have you previously worked in any job or profession?	☐ 1.Yes ☐ 2.No	
14.	How many years ago did you retire (completely)?		
15.	Who is the main earning member of the family?	☐ 1.Spouse ☐ 2.Son ☐ 3.Daughter ☐ 4.Daughter-in-law/Son-in-law ☐ 5.Some other person(specify)	
16.	What is the color of your ration card?	☐ 1.Yellow (AYY) ☐ 2.Pink (priority) ☐ 3.Blue (non-priority) ☐ 4.white (non-priority)	
17.	Do you currently receive a pension, allowance or benefit?	☐ 1.Yes	

		☐ 2.No	
18.	What kind of pension or benefit is that?	☐ 1.National Old Age Pension ☐ 2.Widow Pension ☐ 3.Pension to Unmarried Women above 50 years ☐ 4.Pension to the Physically Challenged Persons ☐ 5.Pension to the Mentally Challenged Persons ☐ 6.Agriculture Labour Pension	
19.	Do you have any health insurance?	☐ 1.Yes ☐ 2.No	
20.	What kind of pension or benefit is that?	☐ 1.MEDiSEP ☐ 2.Karunya Health Insurance Schem ☐ 3.Private health insurance	
21.	Who contribute income for your treatment?	☐ 1.Spouse ☐ 2.Son ☐ 3.Daughter ☐ 4.Self ☐ 5.No body ☐ 6.Others	

2.HOUSEHOLD CHARACTERISTICS

22.	House Type	☐ Pucca ☐ Semi pucca ☐ Kachha house	4 2 0
23.	Toilet facility	☐ Public or shared flush toilet ☐ or own pit toilet ☐ Shared or public pit toilet ☐ No facility	2 1 0
24.	Main source of light	☐ Electricity/ Solar System ☐ Kerosene/Gas /Oil	3 1 0

		☐ Others	
25.	Main source of fuel	☐ Electricity, liquid petroleum gas, or biogas ☐ Coal, charcoal or kerosene ☐ Other fuel	2 1 0
26	Source of drinking water	☐ Pipe, hand pump or well in residence/yard/plot ☐ Public tap, hand pump or well ☐ Other water source	2 1 0
27.	Separate room for cooking	☐ YES ☐ NO	1 0
28.	Ownership of house	☐ YES ☐ NO	1 0
29.	Ownership of agricultural land	☐ For 5 acres or more ☐ For 2.0 - 4.9 acres ☐ For less than 2 acres or acreage not known ☐ For no agricultural land	4 3 2 0
30.	Ownership of irrigated land	☐ Owns at least some irrigated land ☐ For no irrigated land	2 0
31.	Ownership of livestock	☐ Owns livestock ☐ Does not own livestock	2 0
32.	Ownership of durable goods	☐ Car /Tractor ☐ Moped /Scooter/Motorcycle /Telephon /Refrigerator /Color television ☐ Bicycle /Electric fan/Radio/Transistor /Sewing Machine /B/W television /Water pump/Bullock cart /Thresher ☐ Mattress /Pressure Cooker/Chair /Cot	4 3 2 1

		/bed /Table /Clock/ Watch	
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3.HISTORY OF CHRONIC ILLNESS

31.	Has a doctor ever informed you that you have any of following conditions?	☐ 1.Diabetes ☐ 2.Hypertension ☐ 3.Both hypertension and diabetes ☐ 4. None of the above	
32.	Have you ever had a stroke	☐ 1.Yes ☐ 2.No	
33.	When was it?	☐ 1.Within the last year ☐ 2. 1-5 years ago ☐ 3. More than 5 years ago	
34.	Have you experienced more than one stroke episode?	☐ 1.Yes ☐ 2.No	

4.FALL

35	Have you ever fallen down the floor in the last 2 year?	☐ 1.Yes ☐ 2.No	
36	From the following select the consequence of the fall?	☐ 1.No injuries sustained ☐ 2.Had minor injury that needed no medication nor consultation ☐ 3.Had injury and consulted ☐ 4.Significant injury like fracture and needed hospital admission	

5.EYE EXAMINATION

37.	Right eye	Left eye
	No visual impairment 0	
	Mild visual impairment 1	
	Moderate visual impairment 2	
	Severe visual impairment 3	
	Blind 4	

38.	Right eye (with aid)	Left eye (with aid)

39.	Right Eye (with pinhole)	Left Eye (with pinhole)

6.LEN EXAMINATION

40.	Lens	Right eye	Left eye
	Normal lens	1	1
	Obvious opacity	2	2

7.DIFFICULTY IN ACTIVITIES DUE TO VI

41.	Do you face difficulty in reading newspaper with ordinary prints?	☐ 1.No difficulty at all ☐ 2.A little difficulty ☐ 3.Extreme difficulty ☐ 4.Stopped doing this because of your eyesight ☐ 5.Stopped doing this for other reasons or not interested in doing this	
42.	Do you face difficulty to do your household work like cooking or sewing or using hand tools?	☐ 1.No difficulty at all	

		☐ 2.A little difficulty ☐ 3.Extreme difficulty ☐ 4.Stopped doing this because of your eyesight ☐ 5.Stopped doing this for other reasons or not interested in doing this	
43.	Do you face difficulty in reading street signs or name of the stores or bus boards?	☐ 1.No difficulty at all ☐ 2.A little difficulty ☐ 3.Extreme difficulty ☐ 4.Stopped doing this because of your eyesight ☐ 5.Stopped doing this for other reasons or not interested in doing this	
44.	Do you face difficulty to visit relative's houses or going out to see movies?	☐ 1.No difficulty at all ☐ 2.A little difficulty ☐ 3.Extreme difficulty ☐ 4.Stopped doing this because of your eyesight ☐ 5.Stopped doing this for other reasons or not interested in doing this	

8.PSYCHOLOGICAL IMPACT OF VISUAL IMPAIRMENT

45	Because of your eye problem do you feel frightened to go out at night?	☐ 1.Yes ☐ 2.No	
46	Because of your eye problem do you enjoy social functions less?	☐ 1.Yes ☐ 2.No	
47	Because of your eye problem do you ashamed that you can't see?	☐ 1.Yes ☐ 2. No	
48	Because of your eye problem do you feel you have become a burden on others?	☐ 1.Yes ☐ 2.No	
49	Because of your eye problem do you feel frightened that you may lose your remaining vision?	☐ 1.Yes ☐ 2.No	

9.EYE CARE SERVICES

50	Have you ever noticed any changes in your vision?	☐ 1.Yes, I have noticed changes in my vision ☐ 2.No, I have not noticed any changes in my vision	
51	Which of the following visual symptoms are you currently experiencing or have experienced recently?	☐ 1.Blurred vision ☐ 2.Bright light hurts your eyes ☐ 3.Seeing halos around lights ☐ 4.Eye strain or discomfort ☐ 5.Difficulty focusing on near objects ☐ 6.Difficulty focusing on distant objects	

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52	Have you consulted a doctor or eye care professional due to any of the visual symptoms you are experiencing?	☐ 1.Yes ☐ 2.No	If No, go to Q54
53	When seeking treatment for eye symptoms, which health facility do you usually go?	☐ 1. Government Modern medicine facility ☐ 2.Private modern medicine facility ☐ 3.Government Ayurveda facility ☐ 4.PrivateAyurveda facility ☐ 5.Others (specify)	
54	Has a doctor ever informed you that you have any of the following conditions?	☐ 1.Cataract ☐ 2.Refractive error (such as nearsightedness, farsightedness, or astigmatism) ☐ 3.Both cataract and refractive error ☐ 4.Neither	
55.	What are the reasons for not consulting doctor for your visual problems?	☐ 1.Did not have a serious problem ☐ 2.Able to see adequately ☐ 3.Have to travel for eye checkup ☐ 4. Eye checkup not a priority because of other serious medical problems ☐ 5. Do not have money to pay for eye checkup	

		☐ 6. No one willing to escort for eye checkup ☐ 7. Any other reasons(specify)	
56.	If you are not visiting doctor for your eye symptoms, what alternative remedies do you take to manage these symptoms?		

10.SPECTACLE USAGE

57	Did the doctor prescribe spectacles (glasses) during your consultation?	☐ 1.Yes ☐ 2.No	
58	Did you purchase spectacles (glasses) after they were prescribed by the doctor?	☐ 1.Yes ☐ 2.No	
59	Where did you buy your spectacles?	☐ 1.Government hospital ☐ 2.Private optic shop ☐ 3.Others	
60	When was the last time you had your eyesight checked to update or change your spectacles (glasses)?	☐ 1.Less than 6 months ago ☐ 2.6 months to 1 year ago ☐ 3.1 to 2 years ago ☐ 4.More than 2 years ago ☐ 5.I have never had my eyesight checked or brought a new spectacle after buying earlier one ☐ 6. I have checked my eyesight, but	

		never brought a new one	
--	--	-------------------------	--

11.CATARACT SURGERY

CATARACT

61.	RIGHT EYE	LEFT EYE
	YES 1	
	NO 0	

CATARACT SURGERY

62.	RIGHT EYE	LEFT EYE
	YES 1	
	NO 0	

63.	Did the doctor recommend cataract surgery during your consultation?	☐ 1.Yes ☐ 2.No	
64.	Did you undergo cataract surgery?	☐ 1. Yes ☐ 2.No	If no, got to 70
65.	Did you undergo cataract surgery immediately after it was recommended by your doctor?	☐ 1.Yes ☐ 2.No	
66.	If you did not undergo cataract surgery immediately after it was recommended, what were the reasons for the delay?		
67.	If you undergo surgery, who was the service provider?	☐ 1.Public hospital ☐ 2.Private hospital ☐ 3.others, specify	
68.	What was the mechanism of payment of surgery you underwent?	☐ 1.Totally free ☐ 2.Partially free ☐ 3.Fully paid	
69.	Was your cataract surgery covered by any health insurance or government scheme?	☐ 1.Yes, fully covered ☐ 2.Yes, partially covered ☐ 3.No	
70.	Did you have any concerns about undergoing cataract surgery? If yes,		

	could you please explain what those concerns were?		
71.	What factors helped you decide to go ahead with the cataract surgery? Were there any specific reasons or support systems that influenced your decision positively?		
72.	If you underwent cataract surgery, who helped you during the surgery and afterwards during recovery? Please describe.		
73.	If you have not undergone surgery till now, Why have you not undergone cataract surgery even though it was suggested by your doctor a long time ago?		
74.	If you have undergone surgery in one eye not in second eye even after recommending by doctor for surgery in both. What is the reason for it?		

POST SURGERY VISUAL OUTCOME (Good outcome means visual acuity 6/18 or better in operated eye, poor outcome worse than 6/18)

75.	RIGHT EYE	LEFT EYE
	Poor outcome 0	
	Good outcome 1	

END

ANNEXURE V

അച്ചുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ്
(എഫ്എംസിഎച്ച്എസ്എസ്), ശ്രീ ചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ
സയൻസ് ആൻഡ് ടെക്നോളജി (എസ്റ്റിടിഐഎംഎസ്) തിരുവനന്തപുരം - 11

ഇൻഫോർമർ സീരിയൽ നമ്പർ:

സമ്മത പത്രം

പങ്കാളിത്ത വിവര ഷീറ്റിൽ നൽകിയിട്ടുള്ള "കോഴിക്കോട് ജില്ലയിലെ വടകര ബ്ലോക്കിലെ കാഴ്ച വൈകല്യമുള്ള പ്രായമായ സ്ത്രീകൾക്ക് നേത്ര പരിചരണ സേവനങ്ങളുടെ ലഭ്യത" എന്ന പഠനവുമായി ബന്ധപ്പെട്ട വിവരങ്ങൾ ഞാൻ വായിക്കുകയും കേൾക്കുകയും മനസ്സിലാക്കുകയും ചെയ്തതും ഞാൻ സ്ഥിരീകരിക്കുന്നു. ഈ പഠനവുമായി ബന്ധപ്പെട്ട എന്റെ എല്ലാ ചോദ്യങ്ങൾക്കും ഉത്തരം ലഭിച്ചിട്ടുണ്ട്, ഈ പഠനത്തിന്റെ സംഭവ്യമായ എല്ലാ ദോഷങ്ങളും അസ്വസ്ഥതകളും പ്രയോജനങ്ങളും (എന്തെങ്കിലും ഉണ്ടെങ്കിൽ) എനിക്ക് വിശദീകരിച്ചിട്ടുണ്ട്. എന്റെ ഐഡൻറിറ്റിയും വ്യക്തിഗത വിവരങ്ങളും രഹസ്യസ്വഭാവത്തോടെ സൂക്ഷിക്കുമെന്നും ഞാൻ മനസ്സിലാക്കുന്നു. എന്റെ പങ്കാളിത്തം സ്വമേധയാ ഉള്ളതാണെന്നും ഒരു കാരണവും പ്രത്യാഘാതങ്ങളും നൽകാതെ ഏത് സമയത്തും പിൻവാങ്ങാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ടെന്നും ഞാൻ മനസ്സിലാക്കുന്നു.

ഈ പത്രം ഒപ്പിടുന്നതിലൂടെ, ഈ പഠനത്തിൽ പങ്കെടുക്കുന്നതിന് ഞാൻ സമ്മതിക്കുന്നു.

ഇൻറർവ്യൂ ചെയ്യാൻ ഞാൻ സമ്മതിക്കുന്നു

☐

റെക്കോർഡ് ചെയ്യാൻ ഞാൻ സമ്മതിക്കുന്നു

☐

നേത്ര പരിശോധനയിൽ പങ്കെടുക്കുന്നതിന് ഞാൻ സമ്മതിക്കുന്നു

☐

ഈ ഫോമിന്റെ ഒരു പകർപ്പ് എനിക്ക് നൽകിയിട്ടുണ്ട്.

ഈനതപ്പന:

സ്ഥലം:

പങ്കാളിയുടെ പേര് ഒപ്പ്/പെരുവിരലടയാളം

സാക്ഷി (പെരുവിരലടയാളം ഉണ്ടെങ്കിൽ)

പ്രധാന അന്വേഷകന്റെ പേര് ഒപ്പ്

ANNEXURE VI

അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ് (എഫ്.സി.എച്ച്.എസ്.എസ്), ശ്രീ ചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസ് ആൻഡ് ടെക്നോളജി (എസ്റ്റിടിഐഎഫ്.എസ്) തിരുവനന്തപുരം - 11

പങ്കാളിയുടെ വിവര ഷീറ്റ്

തിരുവനന്തപുരം ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസ് ആൻഡ് ടെക്നോളജിയിലെ അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസിൽ (എഫ്.സി.എച്ച്.എസ്.എസ്) മാസ്റ്റർ ഓഫ് പബ്ലിക് ഹെൽത്ത് (എഫ്.പി.എച്ച്) പഠിക്കുന്ന ഞാൻ, ഡോ. അനവദ്യ ജെ പ്രകാശ് എ.എഫ്.സി.എച്ച്.എസ്.എസിലെ സീനിയർ ഗ്രേഡ് പ്രൊഫസർ ഡോ.മാല രാമനാഥൻറെ മാർഗനിർദ്ദേശപ്രകാരം എന്റെ കോഴ്സ് വർക്കിന്റെ ഭാഗമായി "കോഴിക്കോട് ജില്ലയിലെ വടകര ബ്ലോക്കിലെ കാഴ്ച വൈകല്യമുള്ള പ്രായമായ സ്ത്രീകൾക്ക് നേത്ര പരിചരണ സേവനങ്ങളുടെ ലഭ്യത " എന്ന വിഷയത്തിൽ ഞാൻ ഒരു പഠനം നടത്തുകയാണ്.

ഈ ഗവേഷണ പഠനത്തിൽ പങ്കെടുക്കാൻ നിങ്ങളെ ക്ഷണിക്കുകയാണ്. ഈ പഠനത്തിൽ പങ്കെടുക്കണോ വേണ്ടയോ എന്ന് തീരുമാനിക്കുന്നതിന് മുമ്പ്, എന്തുകൊണ്ടാണ് ഈ ഗവേഷണം നടത്തുന്നതെന്നും അതിൽ എന്തൊക്കെ ഉൾപ്പെടുമെന്നും നിങ്ങൾ മനസ്സിലാക്കേണ്ടത് പ്രധാനമാണ്. വിവര ഷീറ്റും സമ്മത പത്രവും ശ്രദ്ധാപൂർവ്വം വായിക്കുക / കേൾക്കുക, നിങ്ങൾക്ക് ഉണ്ടായേക്കാവുന്ന വിശദീകരണങ്ങൾ ചോദിക്കാൻ മടിക്കേണ്ടതില്ല.

പഠനത്തിന്റെ ഉദ്ദേശ്യം

കാഴ്ച കുറവുള്ള ആളുകളുടെ എണ്ണം കണക്കാക്കുകയും അതുമായി ബന്ധപ്പെട്ട അപകടസാധ്യത ഘടകങ്ങൾ പര്യവേക്ഷണം ചെയ്യുകയുമാണ് പഠനത്തിന്റെ ഉദ്ദേശ്യം. നേത്രസംരക്ഷണ സേവനങ്ങളുടെയും തിമിര ശസ്ത്രക്രിയയുടെയും ഉപയോഗം കണ്ടെത്താനും ഇത് ശ്രമിക്കുന്നു. ശസ്ത്രക്രിയയ്ക്ക് വിധേയമാകാതിരിക്കുന്നതിനുള്ള തടസ്സങ്ങളും ശസ്ത്രക്രിയയ്ക്ക് വിധേയമാകാൻ സൗകര്യമൊരുക്കുന്ന ഘടകങ്ങളും പരിശോധിക്കും.

നടപടിക്രമം

പഠനത്തിൽ പങ്കെടുക്കാൻ നിങ്ങൾ തയ്യാറാണെങ്കിൽ, ഡെമോഗ്രാഫിക് വിവരങ്ങളും വിട്ടുമാറാത്ത രോഗത്തിന്റെ ചരിത്രവും കേന്ദ്രീകരിച്ചുള്ള ചോദ്യങ്ങൾ ഉൾപ്പെടുന്ന ഒരു അഭിമുഖ ഷെഡ്യൂൾ പൂർത്തിയാക്കാൻ നിങ്ങളോട് ആവശ്യപ്പെടും. E എന്ന അക്ഷരം ഉപയോഗിച്ച് ഞാൻ നിങ്ങളുടെ കാഴ്ച പരിശോധിക്കും, ഇത് മൊബൈലിൽ 4 ഓറിയന്റേഷനുകളിൽ കാണിക്കും. E യുടെ കൈകൾ ചൂണ്ടിക്കാണിക്കുന്നതായി നിങ്ങൾ മനസ്സിലാക്കുമ്പോൾ മാത്രമേ നിങ്ങൾക്ക് ദിശയിലേക്ക് വിരൽ ചൂണ്ടേണ്ടതുള്ളൂ, അതിനനുസരിച്ച് സ്വൈപ്പ് ചെയ്യാൻ ഞാൻ ടച്ച് സ്ക്രീൻ ഉപയോഗിക്കും, അത് റെക്കോർഡുചെയ്യും. തിമിരം കണ്ടെത്താൻ ലെൻസ് പരിശോധിക്കാൻ

ടോർച്ച് ലൈറ്റ് ഉപയോഗിച്ച് നേത്ര പരിശോധന നടത്തും. നേത്ര പരിചരണ സേവനത്തിന്റേയും തിമിര ശസ്ത്രക്രിയയുടെയും ഉപയോഗവുമായി ബന്ധപ്പെട്ട ചോദ്യങ്ങൾ അഭിമുഖ ഷെഡ്യൂൾ ഉപയോഗിച്ച് രേഖപ്പെടുത്തും. നടപടിക്രമത്തിന് നിങ്ങളുടെ വിലയേറിയ സമയത്തിന്റേ ഏകദേശം 25-30 മിനിറ്റ് എടുക്കും.

സംഭവ്യമായ അപകടസാധ്യതയും അസ്വസ്ഥതയും

പഠനത്തിൽ പങ്കെടുക്കുന്നത് നിങ്ങളുടെ ആരോഗ്യത്തിന് ഒരു അപകടവും വരുത്തുന്നില്ല. എന്നിരുന്നാലും, ചാർട്ടുകൾ ഉപയോഗിച്ച് കാഴ്ച പരിശോധിക്കുന്നത് താൽക്കാലിക അസൗകര്യത്തിന് കാരണമായേക്കാം.

സാധ്യമായ പ്രയോജനം

പഠനത്തിലെ നിങ്ങളുടെ പങ്കാളിത്തം നിങ്ങളുടെ കണ്ണുകളുടെയും കാഴ്ചയുടെയും ഒരു പ്രാഥമിക സ്ക്രീനിംഗ് നൽകും. എന്നിരുന്നാലും, നേത്ര പരിപാലന സേവനങ്ങളും തിമിര ശസ്ത്രക്രിയയും മനസ്സിലാക്കുന്നതിന് പഠനത്തിന്റേ ഫലം സഹായകമാകും.

ചെലവും സാമ്പത്തിക നേട്ടവും

ഈ പഠനത്തിലെ പങ്കാളിത്തത്തിന് ചെലവൊന്നുമില്ല. പങ്കാളിത്തം പൂർണ്ണമായും സ്വമേധയാ ഉള്ളതാണ്, പണമടയ്ക്കൽ നൽകില്ല.

രഹസ്യാത്മകത

ഈ പഠനത്തിൽ നിന്ന് ലഭിക്കുന്ന വിവരങ്ങൾ കർശനമായി രഹസ്യാത്മകമായി സൂക്ഷിക്കും. ഓരോ പങ്കാളിക്കും ഒരു പങ്കാളി തിരിച്ചറിയൽ നമ്പർ നൽകും, ഇത് ശേഖരിച്ച ഡാറ്റയുടെ കർശനമായ രഹസ്യാത്മകത നിലനിർത്താൻ സഹായിക്കും. പ്രസിദ്ധീകരണങ്ങളിലോ റിപ്പോർട്ടുകളിലോ വിവരങ്ങൾ റിപ്പോർട്ട് ചെയ്യുന്നതിന് നിങ്ങളുടെ പേര് ഉപയോഗിക്കില്ല.

പഠനത്തിൽ നിന്നുള്ള പിൻവാങ്ങൽ

പഠനത്തിലെ നിങ്ങളുടെ പങ്കാളിത്തം പൂർണ്ണമായും സ്വമേധയാ ആയിരിക്കും. നിങ്ങൾക്ക് സ്വാതന്ത്ര്യമുണ്ട്, പഠന വേളയിൽ ഏത് സമയത്തും പിൻവാങ്ങാനുള്ള അവകാശമുണ്ട്. പഠനത്തിൽ നിന്ന് പിൻവാങ്ങുന്നതിനോ പങ്കെടുക്കാതിരിക്കുന്നതിനോ പിഴയൊന്നും ഉണ്ടായിരിക്കുന്നതല്ല.

നിങ്ങൾക്ക് ഗവേഷണവുമായി ബന്ധപ്പെട്ട എന്തെങ്കിലും ചോദ്യങ്ങൾ ഉണ്ടെങ്കിൽ അല്ലെങ്കിൽ എന്റേ ക്രെഡൻഷ്യലുകൾ പരിശോധിക്കാൻ നിങ്ങൾ ആഗ്രഹിക്കുന്നുവെങ്കിൽ, ഇനിപ്പറയുന്ന വിലാസത്തിൽ നിങ്ങൾക്ക് എന്നെ ബന്ധപ്പെടാം അല്ലെങ്കിൽ ഞങ്ങളുടെ ഇൻസ്റ്റിറ്റ്യൂട്ടിന്റേ നൈതിക സമിതിയുടെ ഗൈഡ് അല്ലെങ്കിൽ മെമ്പർ സെക്രട്ടറിയെ ബന്ധപ്പെടാം:

ഡോ. അനവദ്യ ജെ പ്രകാശ്
പ്രിൻസിപ്പൽ ഇൻവെസ്റ്റിഗേറ്റർ

ഡോ. ശ്രീനിവാസ് ജി
മെമ്പർ സെക്രട്ടറി

MPH 2023, AMCHSS, SCTIMST

ഇൻസ്റ്റിറ്റ്യൂഷണൽ എത്തിക്സ് കമ്മിറ്റി

ബന്ധപ്പെടാനുള്ള നമ്പർ: 7994714635

SCTIMST, തിരുവനന്തപുരം- 695011

ഓഫീസ്: 04712524689

ഇ-മെയിൽ : jpanavadhya@gmail.com

iec.mem.sec@sctimst.ac.in

വഴികാട്ടി:

ഡോ. മാല രാമനാഥൻ,

പ്രൊഫസർ സീനിയർ ഗ്രേഡ്

AMCHSS, SCTIMST,

മെഡിക്കൽ കോളേജ് (പി.ഒ.),

തിരുവനന്തപുരം – 11

ഫോൺ: +91 7306088324

ഇ-മെയിൽ : mala@sctimst.ac.in

പഠനത്തിൽ പങ്കെടുക്കാൻ നിങ്ങൾ തയ്യാറാണോ?

ANNEXURE VII

അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ്, എസ്.സി.ടി.ഐ.എം.എസ്.ടി,
തിരുവനന്തപുരം-11

"കോഴിക്കോട് ജില്ലയിലെ വടകര ബ്ലോക്കിലെ കാഴ്ച വൈകല്യമുള്ള പ്രായമായ സ്ത്രീകൾക്ക് നേത്ര പരിചരണ സേവനങ്ങളുടെ ലഭ്യത"

ഇന്റർവ്യൂ ഷെഡ്യൂൾ

വാർഡ് നമ്പർ:

പഞ്ചായത്തിന്റെ പേര്:

വാർഡിന്റെ പേര്:

ക്ലസ്റ്റർ നമ്പർ:

ഹൗസ് ഹോൾഡ് നമ്പർ:

തീയതി&സമയം:

നാമം:

വിലാസം:

വ്യക്തിക്കുള്ള സവിശേഷ കോഡ്:

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(ഒറ്റ അക്ക പഞ്ചായത്ത് കോഡ്, രണ്ട് അക്ക വാർഡ് കോഡ്, വ്യക്തിക്ക് രണ്ട് അക്ക ഹൗസ് കോഡ്)

1. നിങ്ങളുടെ ജനന സർട്ടിഫിക്കറ്റിൽ ജനനസമയത്ത് രേഖപ്പെടുത്തിയ ലിംഗമേത്?

സ്ത്രീ	പുരുഷൻ	മറ്റുള്ളവ
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2. ഏതെങ്കിലും സർക്കാർ ഐഡി കാർഡ് അനുസരിച്ച് നിങ്ങളുടെ പ്രായം എത്രയാണ് [അവസാനമായി ആഘോഷിച്ച ജന്മദിനത്തിന്റെ അടിസ്ഥാനത്തിൽ]?

1. ഡെമോഗ്രാഫിക് വിശദാംശങ്ങൾ

Q.	ചോദ്യങ്ങൾ	ഉത്തരങ്ങൾ	
3.	നിങ്ങളുടെ നിലവിലെ ലിംഗഭേദം എന്താണ്?	☐ 1. സ്ത്രീ ☐ 2. പുരുഷൻ ☐ 3. അറിയില്ല ☐ 4. ഉത്തരം പറയാൻ ഇഷ്ടപ്പെടുന്നില്ല	
4.	ദയവായി നിങ്ങളുടെ മതം തിരഞ്ഞെടുക്കുക. [ഓപ്ഷനുകൾ വായിക്കുക]	☐ 1. ഹിന്ദുമതം ☐ 2. ഇസ്ലാം ☐ 3. ക്രിസ്തുമതം ☐ 4. മറ്റുള്ളവർ ☐ 5. റിപ്പോർട്ട് ചെയ്തിട്ടില്ല	
5.	ഇനിപ്പറയുന്നവയിൽ നിന്ന്, നിങ്ങൾ ഉൾപ്പെടുന്ന ജാതി തിരഞ്ഞെടുക്കുക? [ഓപ്ഷനുകൾ വായിക്കുക]	☐ 1. ജനറൽ ☐ 2. പട്ടികവർഗ്ഗം (എസ്സി) ☐ 3. പട്ടികജാതി (എസ്റ്റി)	

		☐ 4. മറ്റ് പിന്നാക്ക വിഭാഗം (ഒബിസി) ☐ 5. മറ്റുള്ളവർ ☐ 6. റിപ്പോർട്ട് ചെയ്തിട്ടില്ല	
6.	നിങ്ങളുടെ ഉയർന്ന വിദ്യാഭ്യാസ യോഗ്യത ഏതാണ്?	☐ 1. സാക്ഷരത ഇല്ല (അതായത് ലളിതമായ ഒരു സന്ദേശം മലയാളത്തിൽ മനസ്സിലാക്കിക്കൊണ്ട് വായിക്കാനോ എഴുതാനോ കഴിയില്ല) ☐ 2. അനുപചാരിക വിദ്യാഭ്യാസമുള്ള സാക്ഷരത (സ്കൂൾ വിദ്യാഭ്യാസം ഇല്ലാതെ സാക്ഷരർ) ☐ 3. ലോവർ പ്രൈമറി (1-4) ☐ 4. അപ്പർ പ്രൈമറി (5-7) ☐ 5. ദ്വിതീയ (8-10) ☐ 6. ഹയർ സെക്കൻഡറി (+1, +2) ☐ 7. ബിരുദം ☐ 8. ബിരുദാനന്തര ബിരുദവും അതിനു മുകളിലും	
7.	ഏത് പ്രായത്തിലാണ് നിങ്ങളുടെ ആദ്യത്തെ ആർത്തവം അനുഭവപ്പെട്ടത്? [അവസാനമായി ആഘോഷിച്ച ജന്മദിനത്തിന്റെ അടിസ്ഥാനത്തിൽ]		
8.	ഏത് പ്രായത്തിലാണ് നിങ്ങൾക്ക് ആർത്തവവിരാമം അനുഭവപ്പെട്ടത്? [അവസാനമായി ആഘോഷിച്ച ജന്മദിനത്തിന്റെ അടിസ്ഥാനത്തിൽ]		
9.	വൈവാഹിക നില	☐ 1. ഒരിക്കലും വിവാഹം കഴിച്ചിട്ടില്ല ☐ 2. ഇപ്പോൾ വിവാഹിത ☐ 3. വിധവ ☐ 4. വിവാഹമോചനം / വേർപിരിഞ്ഞു	
10.	ഈ വീട്ടിൽ നിങ്ങളുടെ കുടുംബാംഗങ്ങൾ ആരാണു്?	☐ 1. ഒറ്റയ്ക്ക് ജീവിക്കുക ☐ 2. പങ്കാളിയോടൊപ്പം മാത്രം ജീവിക്കുക ☐ 3. കുട്ടികളോടും ജീവിതപങ്കാളിയോടൊപ്പം ജീവിക്കുക ☐ 4. കുട്ടികളോടൊപ്പം ജീവിക്കുക ☐ 5. ബന്ധുക്കളോടൊപ്പം ജീവിക്കുക ☐ 6. മറ്റുള്ളവ (ദയവായി വ്യക്തമാക്കുക)	
11.	നിങ്ങൾ നിലവിൽ ശമ്പളമുള്ള എന്തെങ്കിലും ജോലി ചെയ്യുന്നുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
12.	സർവ്വേ തീയതിക്ക് മുമ്പുള്ള ഒരു വർഷമായി താഴെ പറയുന്നവയിൽ ഏതാണ് നിങ്ങളുടെ വരുമാന മാർഗ്ഗം	☐ 1. ജോലി ചെയ്യുന്നില്ല ☐ 2. സ്വയംതൊഴിൽ ☐ 3. പ്രതിമസവേതനം തൊഴിൽ ☐ 4. ദിവസവേതനം തൊഴിൽ	
13.	മുന്നേ ജോലി ചെയ്തിരുന്നോ?	☐ 1. ഉണ്ട്	

		☐ 2. ഇല്ല	
14.	മുൻപ് ചെയ്തിരുന്ന ജോലിയിൽ നിന്ന് വിരമിച്ചിട്ട് എത്ര കാലം ആയി?		
15.	കുടുംബത്തിലെ പ്രധാന വരുമാനമുള്ള അംഗം ആരാണ്?	☐ 1. പങ്കാളി ☐ 2. മകൻ ☐ 3. മകൾ ☐ 4. മരുമകൾ / മരുമകൻ ☐ 5. മറ്റേതെങ്കിലും വ്യക്തി (വ്യക്തമാക്കുക)	
16.	നിങ്ങളുടെ റേഷൻ കാർഡിന്റേ നിറമെന്താണ്?	☐ 1. മഞ്ഞ (AAY) ☐ 2. പിങ്ക് (മുൻഗണന) ☐ 3. നീല (മുൻഗണനയില്ലാത്തത്) ☐ 4. വെള്ള (മുൻഗണനയില്ലാത്തത്)	
17.	നിങ്ങൾക്ക് എന്തെങ്കിലും പെൻഷൻ നിലവിൽ ലഭിക്കുന്നുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
18.	താഴെ പറയുന്നവയിൽ ഏതാണ് അത്?	☐ 1. ദേശീയ വാർദ്ധക്യ പെൻഷൻ ☐ 2. വിധവ പെൻഷൻ ☐ 3. 50 വയസ്സിനു മുകളിലുള്ള അവിവാഹിതരായ സ്ത്രീകൾക്ക് പെൻഷൻ ☐ 4. വികലാംഗർക്കുള്ള പെൻഷൻ ☐ 5. മാനസിക വെല്ലുവിളി നേരിടുന്നവർക്കുള്ള പെൻഷൻ ☐ 6. കാർഷിക തൊഴിലാളി പെൻഷൻ	
19.	നിങ്ങൾക്ക് എന്തെങ്കിലും ആരോഗ്യ ഇൻഷുറൻസ് ഉണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
20.	താഴെ പറയുന്നവയിൽ ഏതാണ് നിങ്ങൾക്കുള്ള ആരോഗ്യ ഇൻഷുറൻസ്?	☐ 1. മെഡിസപ്പ് ☐ 2. കാരൂണ്യ ആരോഗ്യ ഇൻഷുറൻസ് പദ്ധതി ☐ 3. സ്വകാര്യ ആരോഗ്യ ഇൻഷുറൻസ് ☐ 4. മറ്റുള്ള	
21.	നിങ്ങളുടെ ചികിത്സയ്ക്കായി ആരാണ് പണം നൽകുന്നത്?	☐ 1. പങ്കാളി ☐ 2. മകൻ ☐ 3. മകൾ ☐ 4. സ്വയം ☐ 5. ആരും പണം തരുന്നില്ല ☐ 6. മറ്റുള്ളവർ	

2. ഗാർഹിക സവിശേഷതകൾ

22.	വീടിന്റെ തരം	☐ മൺവീട് ☐ ഉറപ്പുള്ള വീട് ☐ ഓലമേഞ്ഞ വീട്	4 2 0
23.	ടോയ് ലറ്റ് സൗകര്യം	☐ പൊതു അല്ലെങ്കിൽ പങ്കിട്ട പ്ലങ്ക് ടോയ് ലറ്റ് ☐ അല്ലെങ്കിൽ സ്വന്തമായി ഒരു കുഴി ശൗചാലയം ☐ പങ്കിട്ട അല്ലെങ്കിൽ പബ്ലിക് പിറ്റ് ടോയ് ലറ്റ് ☐ സൗകര്യമില്ല	2 1 0

24.	പ്രകാശത്തിന്റെ പ്രധാന ഉറവിടം	☐ വൈദ്യുതി / സോളാർ സിസ്റ്റം ☐ മണ്ണെണ്ണ / ഗ്യാസ് / എണ്ണ ☐ മറ്റുള്ളവർ	3 1 0
25.	പ്രധാന ഇന്ധന സ്രോതസ്സ്	☐ വൈദ്യുതി, ലിക്വിഡ് പെട്രോളിയം ഗ്യാസ് അല്ലെങ്കിൽ ബയോഗ്യാസ് ☐ കൽക്കരി, കരി അല്ലെങ്കിൽ മണ്ണെണ്ണ ☐ മറ്റ് ഇന്ധനം	2 1 0
26.	കൂടിവെള്ള സ്രോതസ്സ്	☐ പൈപ്പ്, കൈ പമ്പ് അല്ലെങ്കിൽ താമസസ്ഥലത്തെ കിണർ ☐ പൊതു ടാപ്പ്, കൈ പമ്പ് അല്ലെങ്കിൽ കിണർ ☐ മറ്റ് ജലസ്രോതസ്സുകൾ	2 1 0
27.	പാചകത്തിനായി പ്രത്യേക മുറി	☐ ഉണ്ട് ☐ ഇല്ല	1 0
28.	വീടിന്റെ ഉടമസ്ഥാവകാശം	☐ ഉണ്ട് ☐ ഇല്ല	1 0
29.	കാർഷിക ഭൂമിയുടെ ഉടമസ്ഥാവകാശം	☐ 5 ഏക്കറോ അതിൽ കൂടുതലോ ☐ 2.0 - 4.9 ഏക്കർ ☐ 2 ഏക്കറിൽ താഴെയോ ഏക്കറിലോ കുറവ് അറിയില്ല ☐ കൃഷി ഭൂമിയില്ല	4 3 2 0
30.	ജലസേചന ഭൂമിയുടെ ഉടമസ്ഥാവകാശം	☐ കുറഞ്ഞത് കുറച്ച് ജലസേചന ഭൂമിയെങ്കിലും സ്വന്തമാണ് ☐ ജലസേചന ഭൂമി ഇല്ല	2 0
31.	കന്നുകാലികളുടെ ഉടമസ്ഥാവകാശം	☐ കന്നുകാലികൾ ഉണ്ട് ☐ സ്വന്തമായി കന്നുകാലികളില്ല	2 0
32.	മോടിയുള്ള വസ്തുക്കളുടെ ഉടമസ്ഥാവകാശം	☐ കാർ / ട്രാക്ടർ ☐ മോപ്പെഡ് / സ്കൂട്ടർ / മോട്ടോർ സൈക്കിൾ / ടെലിഫോൺ / റഫ്രിജറേറ്റർ / കളർ ടെലിവിഷൻ ☐ സൈക്കിൾ / ഇലക്ട്രിക് ഫാൻ / റേഡിയോ / ട്രാൻസിസ്റ്റർ / തയൽ മെഷീൻ / ബി / ഡബ്ല്യു ടെലിവിഷൻ / വാട്ടർ പമ്പ് / കാളവണ്ടി / ത്രേഷർ ☐ മെത്ത / പ്രഷർ കുക്കർ / കസേര / കിടക്ക / മേശ / ക്ലോക്ക് / വാച്ച്	4 3 2 1

3. വിട്ടുമാറാത്ത രോഗത്തിന്റെ ചരിത്രം

31.	നിങ്ങൾക്ക് ഇനിപ്പറയുന്ന ഏതെങ്കിലും അവസ്ഥകൾ ഉണ്ടെന്ന് ഒരു ഡോക്ടർ എപ്പോഴെങ്കിലും നിങ്ങളെ അറിയിച്ചിട്ടുണ്ടോ?	☐ 1. പ്രമേഹം ☐ 2. രക്താതിമർദ്ദം ☐ 3. രക്താതിമർദ്ദവും പ്രമേഹവും ☐ 4. മേൽപ്പറഞ്ഞവയിൽ ഒന്നുമില്ല	
32.	നിങ്ങൾക്ക് എപ്പോഴെങ്കിലും പക്ഷാഘാതം ഉണ്ടായിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
33.	എപ്പോഴായിരുന്നു?	☐ 1. കഴിഞ്ഞ വർഷത്തിനുള്ളിൽ ☐ 2. 1-5 വർഷം മുമ്പ് ☐ 3. 5 വർഷത്തിലധികം മുമ്പ്	
34.	നിങ്ങൾക്ക് ഒന്നിൽ കൂടുതൽ തവണ പക്ഷാഘാതം ഉണ്ടായിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	

4. വീഴ്ച

35.	കഴിഞ്ഞ 2 വർഷത്തിനിടയിൽ നിങ്ങൾ എപ്പോഴെങ്കിലും വീണ് പോയിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
36.	താഴെ പറയുന്നവയിൽ നിന്ന് വീഴ്ചയുടെ അനന്തരഫലം തിരഞ്ഞെടുക്കുക?	☐ 1. പരിക്കുകൾ ഉണ്ടായില്ല ☐ 2. മരുന്നോ കൺസൾട്ടേഷനോ ആവശ്യമില്ലാത്ത ചെറിയ പരിക്ക് ഉണ്ടായിരുന്നു ☐ 3. പരിക്കുണ്ടായിരുന്നു, ഉപദേശം തേടി ☐ 4. ഒടിവ് പോലുള്ള ഗുരുതരമായ പരിക്ക്, ആശുപത്രിയിൽ പ്രവേശനം വേണ്ടി വന്നു.	

5. നേത്ര പരിശോധന

37.	വലതു കണ്ണ്	ഇടതു കണ്ണ്
	കാഴ്ച വൈകല്യമില്ല 0	
	നേരിയ കാഴ്ച വൈകല്യം 1	
	മിതമായ കാഴ്ച വൈകല്യം 2	
	ഗുരുതരമായ കാഴ്ച വൈകല്യം 3	
	അന്ധ 4	

38.	വലതു കണ്ണ് (സഹായത്തോടെപ്പോ)	ഇടതു കണ്ണ് (സഹായത്തോടെ)

39.	വലതു കണ്ണ് (പിൻ‌ഹോൾ ഉപയോഗിച്ച്)	ഇടതു കണ്ണ് (പിൻ‌ഹോൾ ഉപയോഗിച്ച്)

6. ലെൻസ് പരീക്ഷ

40.	ലെൻസ്	വലതു കണ്ണ്	ഇടതു കണ്ണ്
	സാധാരണ ലെൻസ്	1	1
	വ്യക്തമായ ഒപാസിറ്റി	2	2

7. കാഴ്ചക്കുറവുകൊണ്ട് ഉള്ള പ്രവർത്തനങ്ങളിലെ ബുദ്ധിമുട്ട്

41.	സാധാരണ പ്രിൻറുകളുള്ള പത്രം വായിക്കാൻ നിങ്ങൾക്ക് ബുദ്ധിമുട്ട് നേരിടുന്നുണ്ടോ?	☐ 1. ബുദ്ധിമുട്ടില്ല ☐ 2. ചെറിയ ബുദ്ധിമുട്ട് ☐ 3. അങ്ങേയറ്റം ബുദ്ധിമുട്ട് ☐ 4. നിങ്ങളുടെ കാഴ്ചശക്തി കാരണം ഇത് ചെയ്യുന്നത് നിർത്തുക ☐ 5. മറ്റ് കാരണങ്ങളാൽ ഇത് ചെയ്യുന്നത് നിർത്തുക അല്ലെങ്കിൽ ഇത് ചെയ്യാൻ താൽപ്പര്യമില്ല	
42.	പാചകം അല്ലെങ്കിൽ തയ്യൽ അല്ലെങ്കിൽ കൈ ഉപകരണങ്ങൾ ഉപയോഗിക്കുന്നത് പോലുള്ള നിങ്ങളുടെ വീട്ടുജോലികൾ ചെയ്യാൻ ബുദ്ധിമുട്ട് നേരിടുന്നുണ്ടോ?	☐ 1. ബുദ്ധിമുട്ടില്ല ☐ 2. ചെറിയ ബുദ്ധിമുട്ട് ☐ 3. അങ്ങേയറ്റം ബുദ്ധിമുട്ട് ☐ 4. നിങ്ങളുടെ കാഴ്ചശക്തി കാരണം ഇത് ചെയ്യുന്നത് നിർത്തുക ☐ 5. മറ്റ് കാരണങ്ങളാൽ ഇത് ചെയ്യുന്നത് നിർത്തുക അല്ലെങ്കിൽ ഇത് ചെയ്യാൻ താൽപ്പര്യമില്ല	
43.	തെരുവിലെ അടയാളങ്ങളോ സ്റ്റോറുകളുടെയോ ബസ് ബോർഡുകളുടെയോ പേര് വായിക്കുന്നതിൽ നിങ്ങൾക്ക് ബുദ്ധിമുട്ട് നേരിടുന്നുണ്ടോ?	☐ 1. ബുദ്ധിമുട്ടില്ല ☐ 2. ചെറിയ ബുദ്ധിമുട്ട് ☐ 3. അങ്ങേയറ്റം ബുദ്ധിമുട്ട് ☐ 4. നിങ്ങളുടെ കാഴ്ചശക്തി കാരണം ഇത് ചെയ്യുന്നത് നിർത്തുക	

		☐ 5. മറ്റ് കാരണങ്ങളാൽ ഇത് ചെയ്യുന്നത് നിർത്തുക അല്ലെങ്കിൽ ഇത് ചെയ്യാൻ താൽപ്പര്യമില്ല	
44.	ബന്ധുവീട്ടുകൾ സന്ദർശിക്കാനോ സിനിമ കാണാനോ നിങ്ങൾക്ക് ബുദ്ധിമുട്ട് നേരിടുന്നുണ്ടോ?	☐ 1. ബുദ്ധിമുട്ടില്ല ☐ 2. ചെറിയ ബുദ്ധിമുട്ട് ☐ 3. അങ്ങേയറ്റം ബുദ്ധിമുട്ട് ☐ 4. നിങ്ങളുടെ കാഴ്ചശക്തി കാരണം ഇത് ചെയ്യുന്നത് നിർത്തുക ☐ 5. മറ്റ് കാരണങ്ങളാൽ ഇത് ചെയ്യുന്നത് നിർത്തുക അല്ലെങ്കിൽ ഇത് ചെയ്യാൻ താൽപ്പര്യമില്ല	

8. കാഴ്ചക്കുറവുകൊണ്ട് ഉള്ള മാനസിക ബുദ്ധിമുട്ട്

45	നിങ്ങളുടെ കണ്ണിന്റെ പ്രശ്നം കാരണം രാത്രിയിൽ പുറത്തിറങ്ങാൻ പേടി തോന്നാറുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
46	നിങ്ങളുടെ കണ്ണിന്റെ പ്രശ്നം കാരണം പൊതുപരിപാടികൾ ആസ്വദിക്കാൻ കഴിയാറുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
47	നിങ്ങളുടെ കണ്ണിന്റെ പ്രശ്നം കാരണം കാണാൻ കഴിയാത്തതിൽ നിങ്ങൾക്ക് ലജ്ജ തോന്നിയിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
48	നിങ്ങളുടെ നേത്ര പ്രശ്നം കാരണം നിങ്ങൾ മറ്റുള്ളവർക്ക് ഒരു ഭാരമായി മാറിയതായി തോന്നിയിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
49	നിങ്ങളുടെ നേത്ര പ്രശ്നം കാരണം നിങ്ങളുടെ ശേഷിക്കുന്ന കാഴ്ച കൂടി നഷ്ടപ്പെടുമെന്ന് പേടി ഉണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	

9. നേത്ര സംരക്ഷണ സേവനങ്ങൾ

50	നിങ്ങളുടെ കാഴ്ച ശക്തിയിൽ എന്തെങ്കിലും മാറ്റങ്ങൾ എപ്പോഴെങ്കിലും ശ്രദ്ധിച്ചിട്ടുണ്ടോ?	☐ 1. ഉണ്ട്, എന്റെ കാഴ്ചയിൽ മാറ്റങ്ങൾ ഞാൻ ശ്രദ്ധിച്ചിട്ടുണ്ട് ☐ 2. ഇല്ല, എന്റെ കാഴ്ചയിൽ ഒരു മാറ്റവും ഞാൻ ശ്രദ്ധിച്ചിട്ടില്ല	
51	ഇനിപ്പറയുന്ന കാഴ്ചയുമായി ബന്ധപ്പെട്ട ലക്ഷണങ്ങളിൽ ഏതാണ് നിങ്ങൾ നിലവിൽ അനുഭവിക്കുന്നത് അല്ലെങ്കിൽ അടുത്തിടെ അനുഭവിച്ചിട്ടുള്ളത്?	☐ 1. മങ്ങിയ കാഴ്ച ☐ 2. ശോഭയുള്ള വെളിച്ചം നിങ്ങളുടെ കണ്ണുകളെ വേദനിപ്പിക്കുന്നു ☐ 3. ലൈറ്റുകൾക്ക് ചുറ്റും വലയങ്ങൾ കാണുന്നു ☐ 4. കണ്ണിന് ബുദ്ധിമുട്ട് അല്ലെങ്കിൽ അസ്വസ്ഥത ☐ 5. അടുത്തുള്ള വസ്തുക്കളിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കാനുള്ള ബുദ്ധിമുട്ട് ☐ 6. വിദൂര വസ്തുക്കളിൽ ശ്രദ്ധ കേന്ദ്രീകരിക്കാനുള്ള ബുദ്ധിമുട്ട്	

52	നിങ്ങൾ അനുഭവിക്കുന്ന ഏതെങ്കിലും ലക്ഷണങ്ങൾ കാരണം ഒരു ഡോക്ടറെയോ നേത്ര പരിചരണ വിദഗ്ദ്ധനെയോ സമീപിച്ചിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	ഇല്ലെങ്കിൽ, ചോദ്യം നമ്പർ 54 ലേക്ക് പോകുക
53	നേത്ര ലക്ഷണങ്ങൾക്ക് ചികിത്സ തേടുമ്പോൾ, സാധാരണയായി ഏത് ആരോഗ്യ കേന്ദ്രത്തിലാണ് പോകാറുള്ളത്?	☐ 1. സർക്കാർ അലോപ്പതി മെഡിസിൻ സൗകര്യം ☐ 2. സ്വകാര്യ അലോപ്പതി മെഡിസിൻ സൗകര്യം ☐ 3. സർക്കാർ ആയുർവേദ സൗകര്യം ☐ 4. സ്വകാര്യ ആയുർവേദ സൗകര്യം ☐ 5. മറ്റുള്ളവ (വ്യക്തമാക്കുക)	
54	നിങ്ങൾക്ക് ഇനിപ്പറയുന്ന അവസ്ഥകളിൽ ഏതെങ്കിലും ഉണ്ടെന്ന് ഒരു ഡോക്ടർ എപ്പോഴെങ്കിലും അറിയിച്ചിട്ടുണ്ടോ?	☐ 1. തിമിരം ☐ 2. റിഫ്രാക്റ്റീവ് പിശക് (സമീപവീക്ഷണം,	

		ദീർഘവീക്ഷണം അല്ലെങ്കിൽ അസ്തിത്വമാറ്റം പോലുള്ളവ ☐ 3. തിമിരവും റിഫ്രാക്റ്റീവ് പിശകും ☐ 4. രണ്ടും ഇല്ല	
55	നിങ്ങളുടെ കാഴ്ച പ്രശ്നങ്ങൾക്ക് ഡോക്ടറെ സമീപിക്കാത്തതിന്റെ കാരണങ്ങൾ എന്തൊക്കെയാണ്	1. ഗുരുതരമായ കാഴ്ച പ്രശ്നം ഉണ്ടായിരുന്നില്ല 2. വേണ്ടത്ര കാനോനുള്ള കഴിവ് 3. നേത്ര പരിശോധനയ്ക്കായി യാത്ര ചെയ്യണം 4. മറ്റ് ഗുരുതരമായ മെഡിക്കൽ പ്രശ്നങ്ങൾ കാരണം നേത്ര പരിശോധനയ്ക്ക് മുൻഗണനയില്ല 5. നേത്ര പരിശോധനയ്ക്ക് പണം ഇല്ല 6. നേത്ര പരിശോധനയ്ക്ക് അകമ്പടി നൽകാൻ ആരും ഇല്ല 7. മറ്റെന്തെങ്കിലും കാരണങ്ങൾ...	
56.	നിങ്ങളുടെ നേത്ര ലക്ഷണങ്ങൾക്കായി ഡോക്ടറെ സന്ദർശിക്കുന്നില്ലെങ്കിൽ, ഈ ലക്ഷണങ്ങൾ കൈകാര്യം ചെയ്യുന്നതിന് എന്ത് ബദൽ പരിഹാരങ്ങളാണ് നിങ്ങൾ സ്വീകരിക്കുന്നത്?		

10. കണ്ണടയുടെ ഉപയോഗം

57	നിങ്ങളുടെ കൺസൾട്ടേഷന്റെ സമയത്ത് ഡോക്ടർ കണ്ണട നിർദ്ദേശിച്ചിട്ടുണ്ടോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
58	ഡോക്ടർ നിർദ്ദേശം തുടർന്ന് നിങ്ങൾ കണ്ണട വാങ്ങിയിട്ടുണ്ടോ	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
59	എവിടെ നിന്നാണ് നിങ്ങൾ കണ്ണട വാങ്ങിയത് ?	☐ 1. സർക്കാർ ആശുപത്രി ☐ 2. സ്വകാര്യ ഒപ്റ്റിക് ഷോപ്പ് ☐ 3. മറ്റുള്ളവർ	
60	നിങ്ങളുടെ കണ്ണട മാറ്റാൻ അവസാനമായി കാഴ്ചശക്തി പരിശോധിച്ചത് എപ്പോഴാണ്?	☐ 1. 6 മാസം മുമ്പ് ☐ 2. 6 മാസം മുതൽ 1 വർഷം മുമ്പ് ☐ 3. 1 മുതൽ 2 വർഷം മുമ്പ് ☐ 4. 2 വർഷത്തിലധികം മുമ്പ് ☐ 5. കണ്ണട വാങ്ങിയതിന് ശേഷം പിന്നീട്	

		ഒരിക്കലും കണ്ട മാറ്റുകയോ പരിശോധിക്കുകയോ ചെയ്തിട്ടില്ല ☐ 6. പരിശോധിച്ചു പക്ഷെ കണ്ട മാറ്റിയില്ല	
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11. തിമിര ശസ്ത്രക്രിയ

61.	വലതു കണ്ണ്	ഇടതു കണ്ണ്
	ഉണ്ട് 1 ഇല്ല 0	

തിമിര ശസ്ത്രക്രിയ

62.	വലതു കണ്ണ്	ഇടതു കണ്ണ്
	ഉണ്ട് 1 ഇല്ല 0	

63.	നിങ്ങളുടെ പരിശോധന സമയത്ത് തിമിര ശസ്ത്രക്രിയ ഡോക്ടർ നിർദ്ദേശിച്ചിരുന്നോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
64.	നിങ്ങൾ തിമിരം ശസ്ത്രക്രിയ ചെയ്തിട്ടുണ്ടോ ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	ഇല്ലെങ്കിൽ, ചോദ്യം നമ്പർ 70 ലേക്ക് പോകുക
65.	നിങ്ങളുടെ ഡോക്ടർ നിർദ്ദേശിച്ച സമയത്ത് തന്നെ ശസ്ത്രക്രിയ ചെയ്തോ?	☐ 1. ഉണ്ട് ☐ 2. ഇല്ല	
66.	നിർദ്ദേശിച്ച സമയത്ത് നിങ്ങൾ തിമിര ശസ്ത്രക്രിയയ്ക്ക് ചെയ്തിട്ടില്ലെങ്കിൽ, കാലതാമസത്തിനുള്ള കാരണങ്ങൾ എന്തൊക്കെയാണിത്?		
67.	നിങ്ങൾ ശസ്ത്രക്രിയയ്ക്ക് ഏത് ഹോസ്പിറ്റലിൽ ആണ് പോയത്?	☐ 1. ഗവണ്മെന്റ് ആശുപത്രി ☐ 2. സ്വകാര്യ ആശുപത്രി ☐ 3. മറ്റുള്ളവ, വ്യക്തമാക്കുക	
68.	നിങ്ങൾ നടത്തിയ ശസ്ത്രക്രിയയ്ക്ക് എങ്ങനെ ആണ് പണം അടച്ചത്?	☐ 1. പൂർണ്ണമായും സൗജന്യം ☐ 2. ഭാഗികമായി സൗജന്യം ☐ 3. മുഴുവൻ പണം അടച്ചു	
69.	നിങ്ങളുടെ തിമിര ശസ്ത്രക്രിയയുടെ പണം ഏതെങ്കിലും ആരോഗ്യ ഇൻഷുറൻസ് അല്ലെങ്കിൽ സർക്കാർ പദ്ധതിയിൽ ഉൾപ്പെട്ടിരുന്നോ?	☐ 1. മുഴുവനായും ഉൾപ്പെടുത്തിയിരുന്നു ☐ 2. ഭാഗികമായി ഉൾപ്പെടുത്തിയിരുന്നു ☐ 3. ഇല്ല	
70.	തിമിര ശസ്ത്രക്രിയയ്ക്ക് വിധേയമാകുന്നതിനെക്കുറിച്ച് നിങ്ങൾക്ക് എന്തെങ്കിലും ആശങ്കകളോ സംശയങ്ങളോ ഉണ്ടായിരുന്നോ? ഉണ്ടെങ്കിൽ, ആ ആശങ്കകൾ എന്താണെന്ന് ദയവായി വിശദീകരിക്കാമോ?		
71.	തിമിര ശസ്ത്രക്രിയയുമായി മുന്നോട്ട് പോകാൻ തീരുമാനിക്കാൻ നിങ്ങളെ സഹായിച്ച ഘടകങ്ങൾ എന്തൊക്കെയാണ്? നിങ്ങളുടെ		

	തീരുമാനത്തെ സ്വാധീനിച്ച ഏതെങ്കിലും പ്രത്യേക കാരണങ്ങളോ പിന്തുണാ സംവിധാനങ്ങളോ ഉണ്ടായിരുന്നോ?		
72	നിങ്ങൾ തിമിര ശസ്ത്രക്രിയയ്ക്ക് വിധേയ യായിട്ടുണ്ടെങ്കിൽ, ശസ്ത്രക്രിയ വേളയിലും അതിനുശേഷമുള്ള വിശ്രമം വേളയിലും ആരാണ് നിങ്ങളെ സഹായിച്ചത്? ദയവായി വിശദീകരിക്കൂ.		
73.	നിങ്ങൾ ഇതുവരെ ശസ്ത്രക്രിയയ്ക്ക് വിധേയ ആയിട്ടില്ലെങ്കിൽ, വളരെക്കാലം മുമ്പ് ഡോക്ടർ നിർദ്ദേശിച്ചിട്ടും എന്തുകൊണ്ടാണ് തിമിര ശസ്ത്രക്രിയയ്ക്ക് വിധേയമാകാത്തത്?		
74.	രണ്ട് കണ്ണിലും ശസ്ത്രക്രിയയ്ക്ക് ഡോക്ടർ ശുപാർശ ചെയ്തിട്ടും നിങ്ങൾ ഒരു കണ്ണിൽ ശസ്ത്രക്രിയയ്ക്ക് വിധേയ ആയിട്ടുണ്ടെങ്കിൽ, രണ്ടാമത്തെ കണ്ണിൽ ചെയ്യാത്തതിന്റേ കാരണം എന്താണ്?		

ശസ്ത്രക്രിയാനന്തര മുള്ള കാഴ്ച്ച

75.	വലതു കണ്ണ്	ഇടതു കണ്ണ്
	മോശം ഫലം 0	
	നല്ല ഫലം 1	

അവസാനം

ANNEXURE VIII

ശ്രീജിത്ത്. പി.
പ്രസിഡണ്ട്
ഒഞ്ചിയം ഗ്രാമപഞ്ചായത്ത്
കണ്ണുകര പി.ഒ.
വടകര - കോഴിക്കോട് ജില്ല
Ph: 0496 2502025



'മലബാർ'
ഒഞ്ചിയം പി.ഒ.
വടകര
Mob: 9496048108
9947291414

സത്യം

25.10.2024

ശ്രീ ചിത്തിര കിരണൻ ഇൻ്റീയൂട്ട് രാഫ് മെഡിക്കൽ സയൻസിൽ
തിരുവനന്തപുരത്ത് ഓ. പി. ഓച്ച് റെക്കോർഡ് വിദ്യാർത്ഥിയാല
പ്രിയ: ഡോ; അനവദ്യ. രജ. പ്രൊഫ്. കന്നുകരയിൽ പഠനത്തിൽ
പ്രാർത്ഥന. അവിടം പ്രൊഫ. അനവദ്യയെ അത് വാർഡ് കളിൽ സർവ്വ
നടത്താൻ അനുമതി നൽകുന്നു.



മിസ്.

ജി.

ശ്രീമദ്മലബാർ പി.
പ്രസിഡണ്ട്
ഒഞ്ചിയം ഗ്രാമപഞ്ചായത്ത്
പി.ഒ. കണ്ണുകര - 673102
Mob: 9496 048 108

ടി.പി. മിനിക
പ്രസിഡണ്ട്
എറാമല ഗ്രാമപഞ്ചായത്ത്
കോഴിക്കോട് ജില്ല
ഫോൺ: 0496 2547047



കുടുംബശ്രീ പഠനവത്ത് ഹൗസ്
പി.ഒ എറാമല
ഓർക്കാട്ടേരി (വഴി) - 673 501
മൊബൈൽ: 9539 40 51 19

തീയതി...26/10/24.....

ശ്രീ ചിത്തിര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് മെഡിക്കൽ സയൻസ് & ടെക്നോളജി തിരുവനന്തപുരത്ത് എം പി എച്ച് രണ്ടാം വർഷ വിദ്യാർത്ഥിനിയിായ ഡോ:അനവദ്യ ജെ പ്രകാശ് എന്ന കുട്ടിക്ക് പഠനാവശ്യാർത്ഥം എറാമല ഗ്രാമപഞ്ചായത്തിലെ 6 വാർഡുകളിൽ “ACCESS TO EYE CARE SERVICES AMONG ELDERLY WOMEN WITH VISUAL IMPAIRMENT IN VADAKARA BLOCK ,KOZHICODE “ എന്ന വിഷയത്തിനാവശ്യമായ സർവ്വെ നടത്താൻ അനുമതി നൽകുന്നു.




T.P. MINIKA
PRESIDENT
ERAMALA GRAMA PANCHAYATH
Orkkateri- 673 501
Mob: 9539 405 119

AYSHA UMMER
President
Azhiyur Grama Panchayat
Ph: 0496 2500101
9496048102



Resi: Kizhakke Kannothe
P.O. Azhiyur
Mob: 9895633193

Date: 25/10/2024

ശ്രീ. ചിന്തിത തിരുനഗർ ഇൻക്ലൂസീവ് കാർഡ് കമ്മിഷൻ സെക്രട്ടറി
തിരുവനന്തപുരത്ത് ഓ.പി.ബുക്ക് ഓഫീസർ വിദ്യാർത്ഥിനിയായ ശ്രീമതി. ഓ.അനലൂ -
ജെ. ഡേക്കർ എന്ന കൂട്ടിച്ച് പഠനവിദ്യർക്കും അഭിരുചി ഗ്രാമപഞ്ചായത്തിലെ
അഞ്ച് വാർഡുകളിൽ 'Access to eye care services among elderly women with visual-
impairment in Vadakur block, Kozhikode' എന്ന വിഷയത്തിൽ അനുഭവമായ സർവ്വേ
സംഗ്രഹം അനുവദിക്കുന്നു.




AYSHA UMMER
President
Azhiyur Grama Panchayath

പി.പി. ചന്ദ്രസേഖരൻ
പ്രസിഡൻ്റ്
ചോറോഡ് ഗ്രാമപഞ്ചായത്ത്
മുട്ടുങ്ങൽ വെസ്റ്റ്
Ph (Off) 0496 - 2512501



പ്രസിഡൻ്റ്ഗ്രാമപഞ്ചായത്ത്
ചോറോഡ് പി.ഒ.
നടകോട് പിൻ: 0306
Mob 9846499010

തീയതി 27.10.24

അനൗദി പത്രം

ശ്രീ ചിത്തമിത തിരുനാൾ ഉദ്യോഗസ്ഥ് കോർപ്പറേഷൻ
സെൻസിൻ, തിരുവനന്തപുരത്ത് ഓ.പി.സി.യുടെ നേതൃത്വത്തിൽ
വിവിധ വികസനപദ്ധതികൾ കൂടി. അതുകൂടി മുന്നോട്ടു
പുറംപുറം എന്ന മുഖ്യധാര പഠനപദ്ധതികൾ ഉണ്ടാക്കി
കൂടി പദ്ധതികൾ കൂടി വാർഡുകളിൽ "Access to
eye care services among elderly women with
visual impairment in VadaKkera block, Kozhikode District"
എന്ന വിഷയത്തിൽ അദ്ധ്യക്ഷത വഹിക്കുന്നതിനായി
നൽകുന്നു.



P.P. CHANDRASEKHARAN
PRESIDENT
CHORODE GRAMA PANCHAYAT
P.O Muttungal West, Kozhikode Dist.
Ph. 0496 2512501, Mob. 9846 048 104

TRIVANDRUM

ANNEXURE IX



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
तिरुवनन्तपुरम - ६९५०९९, केरल, इंडिया
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
Thiruvananthapuram - 695 011, Kerala, India
(An Institute of National Importance under Govt. of India)

Grams : Chitramet, Phone : +91-471-2443152, Fax : +91-471-2550728 / 2446433, E-mail : sct@sctimst.ac.in, Website : www.sctimst.ac.in

Institutional Ethics Committee

CDSCO Registration No: ECR/189/Inst/KL/2013/RR-24
DHR Registration No: EC/NEW/INST/2022/2775

SCT/IEC/2339/DECEMBER/2024

17.01.2025

Dr. Anavadhya J Prakash
MPH Student, AMCHSS
SCTIMST, Thiruvananthapuram

Dear Dr. Anavadhya J Prakash,

The Institutional Ethics Committee held on 30th December, 2024, reviewed and discussed your application to conduct the study titled "ACCESS TO EYE CARE SERVICES AMONG ELDERLY WOMEN WITH VISUAL IMPAIRMENT IN VADAKARA BLOCK, KOZHIKODE DISTRICT" (IEC /2339) .

Principal Investigator	Dr. Anavadhya J Prakash, MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr. Mala Ramanathan, Professor, AMCHSS, SCTIMST
Duration of the study	6 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2024

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Dr. Manoj Murhekar	MD (Preventive & Social Medicine)	Male	Social Scientist	No
2.	Dr. Annapurna.Y	MD	Female	Basic Medical Scientist	No
3.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4.	Dr. Indu PV	MBBS, DPM, MPhil, PhD	Female	Clinician	No
5.	Dr. Rejnish Kumar	MBBS, MD, DNB	Male	Clinician	No
6.	Smt. Rekha Radhakrishnan	M.A (Eng.); B.Ed	Female	Lay person	No
7.	Dr. Biju Soman	MBBS, MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes
8.	Dr. Syam K	MBBS, MD, DM	Male	Clinician	Yes
9.	Dr. Srinivas G	PhD	Male	Basic Medical Scientist (Member Secretary)	Yes

The following documents were reviewed:

Original submission

1. IEC Application Form
2. Permission letters
3. Funding details and Budget
4. Covering letter addressed to the Chairperson, IEC, SCTIMST dated 09.12.2024 forwarded by HOD
5. Interview schedule in English and Malayalam
6. Informed Consent Forms in English and Malayalam
7. Participant Information Sheets in English and Malayalam
8. Checklist Form
9. Proposal
10. Declaration Form
11. CV of PI and Co-PI

Revised submission

1. Covering letter addressed to the Member Secretary, IEC, SCTIMST dated 13.01.2025
2. Response to IEC comments
3. IEC recommendation letter dated 09.01.2025
4. Proposal
5. Interview schedule in English and Malayalam
6. Informed Consent Forms in English and Malayalam
7. Participant Information Sheets in English and Malayalam
8. Permission letters

IEC Decision

The IEC approved the conduct of the study in the present form.

Remarks:

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team / Guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,



Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM



ANNEXURE X

4/28/25, 12:17 PM

Similarity Report

Access to Eye Care Services Among Elderly Women...

By: Anavadhya J Prakash

As of: Apr 28, 2025 12:14:56 PM
16,067 words - 104 matches - 37 sources

Similarity Index

6%

Mode: Similarity Report ▼

paper text:

CHAPTER 1 INTRODUCTION 1.1 Background

Blindness and visual impairment due to various ocular diseases are a public health

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problem around the world. The Vision 2020 Global Initiative was launched intending to remove needless blindness and vision loss by controlling major causes of blindness, training professionals to provide eye care, creating infrastructure, and developing appropriate technology (Garms, 1998).

In 2013, the World Health Assembly (WHA) launched a global action plan

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