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COMMUNITY PERCEPTIONS OF EYE DISEASES AMONG 40-70 YEAR OLDS IN SENEGAL

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ABSTRACT

It is estimated that 1,42% of the Senegalese population is blind with half of these cases being attributed to causes other than cataracts and that 80% of these causes are avoidable. A cross sectional survey was carried out in Dakar, aiming to investigate the factors leading to an increase in the prevalence of eye diseases in the 40-70 years age group. A total of 53 males and 47 females took part in the study. The mean age was 55 years (SD 6.24). 85% of the participants earned a monthly income less than USD 100. 71% of the participants reported having a history of eye disease. There was an association between occupation and belief of being at risk of eye diseases (p=0.0008). Losing one's job (83.3%) and the belief that healthy eyes were the basis for survival (82.9%) were the major reasons why eye diseases were viewed as severe. A significant association between reporting to the hospital and sex was observed (p=0.003). Both males and females resorted to self treatment. There was an association between employment status and having had an eye disease (p=0.014) with farmers (69%) and artisans (14.1%) being the most affected. An association existed between workplace and having had an eye disease in the past four months (p=0.05).

Keywords: Eye Diseases, Risk Perception, Self Treatment, Health Promotion

INTRODUCTION

Severe conjunctivitis symptoms and other eye diseases can be very distressing and can cause serious damage that can threaten eyesight. Approximately 27 million people in sub Saharan Africa are visually impaired, of these 6.8 million are blind **[1]**. Nearly 80% of visually impaired people live in the low-resource countries of Africa and Asia,

mostly in rural areas with few underutilized eye care facilities **[2]**.

According to the Ministry of Health, it is estimated that 1,42% of the Senegalese population is blind with half of these cases being attributed to causes other than cataracts. It is further estimated that some 80% of these causes of blindness are avoidable. Whilst evidence exist that there is an increase in the prevalence of lifestyle related diseases inclusive of preventable blindness, not much effort is being undertaken in Senegal to ensure communities understand the role of social or personal determinants on health **[1]**. **[3] in Ibadan, Nigeria, 2002,** showed that men (58%) were at more risk of eye diseases than women. Contrary to that, **[4]** revealed that there has been increasing evidence that women are affected by blindness and visual impairments to a much greater extent than men with women accounting for about 64% of blindness cases globally. **[5]** in **2009** in Ibadan, Nigeria also showed that more males (71.2%) than females (28.8%) had visual outcomes of injuries necessitating hospitalization. **[6]** in Nile Delta, Egypt, found out that factors associated with blindness included age, sex (being female), marital status (being unmarried), rural residence, occupation (farming and not contributing to household income) and sanitation (not being on general sanitation network). **[3]** found out that no age group was spared even though more adults (64%) presented with eye diseases than children. **[5]** in his study with patients below 18 years revealed that the school going age are particularly susceptible because they are active and often engage in risky behaviour. Injuries in the workplace occurred mostly in the age group 15-18 years, occurring in 86% of the cases. **[3]** showed that most of their study participants (73.2%) were of low socio-economic groups.They also revealed that school children, farmers, welders and panel beaters were particularly at risk of ocular problems from injuries with potential for blindness. **[7]** in Limpopo, South Africa revealed the common welding related eye symptoms as foreign body sensation (18%), persistent after-images (31%) and watery eyes (50%).In a review on ocular toxicity from pesticide exposure, **[8]** found out that exposure of unprotected eyes to pesticides results in the absorption in ocular tissue and potential ocular toxicity. They highlighted that agricultural workers and their spouses are at high risk of exposure to pesticides and associated ocular toxicity. **[9]** aimed to estimate the incidence of ocular injury in rural Nepal and identify details about these injuries that predicted poor visual outcome. The places where injuries most commonly occurred were at home (32%) or in the field (27%).In a study to explore the causes and

management of blindness and blinding eye conditions as perceived by rural dwellers of Oyo state, Nigeria by **[10]**, medicine sellers believed that farm related injuries cause blindness. **[5]** indicated that the environment poses risk to eye injuries with 75.6% of eye injuries occurring outdoors while 24.4% occurred indoors. In a study by **[11]**to investigate the awareness of eye diseases and risk factors in Canada, few respondents knew risk factors (amenable to intervention) for specific eye diseases. In evaluating the factors associated with lack of awareness of glaucoma and late presentation to the doctor, **[12]** found out that 61.9% had no formal education, 15.2% primary education, 18.1% secondary school and 4.8% had completed pre-university or tertiary education. Before onset of symptoms 22.9% of patients had heard of glaucoma. 67.7%, 35.2% and 63.8% of patients did not know that sudden blurring of vision; painful eye and red eye respectively were symptoms that required medical attention.

In their study to explore the causes and management of blindness and blinding eye conditions as perceived by rural dwellers of Oyo, Nigeria, **[10]** revealed that participants viewed the eye as the gateway or light to human existence. If the eye is lost, the next thing is to die as they perceived the eye as superior to other body organs. **[13]** defined self treatment as the use of either western or traditional medicine by the individual for their most recent eye condition. In their study, self treatment was reported for the last episode of eye disease by 39.8% of the study population. Factors associated with self treatment included sex, religion and socio-economic status. Even though 76.8% of the respondents reported treatment from the hospital to be the least expensive option, many opted for self treatment first. **[9]** aimed to estimate the incidence of ocular injury in rural Nepal and identify details about these injuries that predicted poor visual outcome. They found out that the first place that care was sought was more likely to be at primary care clinic (48.5%), 10% at home with a local medicine person and 42% local pharmacy. **[14]** revealed through their evaluation of reported traditional eye medication use that patients living farther from the hospital continued to report use of traditional eye medication more commonly than those living or staying near the hospital. **[15]** found out that most (98.4%) of their study participants reported not wearing sunglasses when working in the fields. In a study by **[16]** in South Africa to review factors influencing the utilization of eye care services, knowledge of the services, lack of knowledge of the impact of an eye diseases and lack of knowledge of who to consult for management of eye diseases influenced or acted as barriers to

eye care services utilization. **[17]** highlighted that a cursory review of systems across the world reveals that there is no common understanding of what primary eye care (PEC) means and there exists a wide variation in its content and in the way it is provided. They also revealed that women may not seek eye care because they may not have financial-decision making authority within the family.In Africa only 30% of people have access to eye care and the spread of available resources is uneven across and within countries. In Zimbabwe and Mali, the training of PEC workers is done in a cascading manner while in Zambia training is done only at national level **[17]**. **[4]** revealed that in many areas men are twice as much as women in accessing eye care. They highlighted that the cultural and socio-economic differences between men and women lead to reduced access to eye care services for women. **[16]** revealed that in Nigeria the majority of eye care services are located in the urban areas and far from reach of rural dwellers, therefore leaving many rural areas underserved. They also highlighted that a major barrier to eye care services in rural areas is poor conditions of the roads.

In a qualitative study by **[18]** to ascertain the perceived barriers to diabetic eye care, the participants cited finances as the major barrier while physicians cited inadequate patient education. In a similar study by **[19]** among African Americans, transport problems were most frequently cited by the participants as well as eye care providers. In their study to understand why residents in rural south India with visual impairment did not seek eye care.

[20] investigated the indirect cost associated with accessing eye care services as a barrier to service use in Ethiopia. A third of their respondents reported that they had used eye care services, 35.4% had indirect costs as barriers to seeking eye care services. These included lack of money to cover transport costs, food and lodging expenses for the accompanying person. The reasons for not using the services varied significantly between men and women with women reporting more of a problem of indirect cost and not having someone to care for the children. In a study to explore the causes and management of blinding eye conditions as perceived by rural dwellers in Nigeria by **[10]**, four major reasons for not fully utilizing health facilities included perceived waste of time, exorbitant transport cost, not knowing who to consult at the hospital and inaccurate information.

Eye care facilities are often inadequate, with obsolete and dysfunctional equipment. Lack of staff and shortage of medicines and other essential eye care products are frequent in the African region **[21]**. **[16]** revealed that

poor practitioner-to-patient ratios, absence of eye care personnel, inadequate facilities, poor state funding and lack of educational programs have been considered as the hallmarks of eye care in Africa. The disproportionate distribution of optometry and ophthalmological services between rural and urban areas in many developing countries increases the rate of visual impairment in the rural areas. In a study by **[15]** among seasonal farm workers in U.S.A, 98.4% reported not wearing sunglasses when working in the fields and their reasons including lack of sunglasses. In an attempt to describe the array of factors that influence a worker's decision to wear personal protective eye wear. **[16]** reported that that lack of educational programmes is prevalent in Africa. **[18]** revealed that the inadequacy of patient education has reinforced people not to use eye care services.

METHODS

A cross-sectional survey was utilised to describe and quantify the distribution of the study variables in Dakar. Participants were 100 consenting men and women within the 40-70 years age group who were conveniently sampled. Quantitative and qualitative data were collected using self administered questionnaires. The questionnaire was designed in Wolof, the local language. Data were sorted, categorised and coded before it were fed into Epi Info version 3.5.3. Chi squared tests were run to test for associations between the dependent and independent variables.

RESULTS

Questionnaires were administered to 100 participants, 53 males and 47 females. Respondents were of the 40-70 years age group with the majority (89%) above 45 years and mean age 55 years (SD 6.24). A majority (60%) attained form four as the highest level of education. Of the participants, 85% earned a monthly income of less than USD 100. Of the 71 participants who reported that they have had a history of eye diseases, 45.1% were females and 54.9% were males. There was no association between sex and having had an eye disease (p=0.350). The majority (97%) of the participants were aware of eye diseases. Stratified by sex, 97.9% of females and 96.2% of males had heard about eye diseases. More than half of the participants (63%) believed they were at risk of eye diseases. There was an association between occupation and belief of being at risk of eye diseases (p=0.0008). Eye diseases were viewed by 75.5%, 19.4% and 5.1% of the participants to be very severe, severe and not severe respectively. Losing one's job (83.3%) and the belief that healthy eyes were the basis for survival (82.9%) were the major reasons why eye diseases were

viewed to be very severe. Although perception of severity of eye diseases was not associated with having had an eye disease (p=0.306), an association existed between awareness of eye diseases and one's perception of the severity of eye diseases. (p=0.05). The main sources of health information on eye diseases were peers/family (56.7%) followed by health workers who constituted (40.2%). Among those who consulted a hospital for an eye condition, 69.2% were females and 30.8% were males. There was a significant association between reporting to the hospital and sex (p=0.003). Of those who reported at the hospital, 62.5% were not satisfied with the service, attributing this dissatisfaction to unavailability of ophthalmologists (31%) and eye treatments (11%). Most of the participants (42%) stayed 0-3km from the health facility, 32% lived within 3-5km and 26% stayed more than 5km away from the hospital. There was an association between distance from the hospital and eye diseases (p=0.030). Both males and females resorted to self treatment. Even though more males (55%) than females (45%) reported to have used self treatment, there was no association between sex and self treatment (p=0.176). The most common medicines to be used were traditional eye medicines (60.7%). There was an association between employment status (p=0.014). Farmers were the most affected (69%) followed by artisans (14.1%), the unemployed (12.7%) and drivers (4.2%) respectively. More cases (77.5%) of having had an eye diseases reported to be working in a farm setting. There was an association between workplace and having had an eye disease in the past four months (p=0.050).Of the 80 participants who were employed, 97.5% reported not using protective eye wear. 79.5% of those who did not use protective eye wear in their workplaces have had an eye disease in the past four months. There was an association between use of protective eyewear and having had an eye disease (p=0.048). All the participants who were employed highlighted that protective eye wear is not easily accessible in their work places and community.

DISCUSSION

Our findings indicated that more men than females had eye diseases but there was no statistical association between sex and eye diseases (p=0.350), therefore sex was not found to be a predisposing factor. This result could have been due to the fact that both men and women in our sample spent most of their time in comparable environments hence same exposures. This was contrary to **[3]** finding in Nigeria as well as **[5]** also in Nigeria who found out that men were more at risk of eye diseases than women. **[4]** revealed that there has

been increasing evidence that women are affected by blindness and visual impairments than men which contradicted with the findings of this study. These discrepancies between our study and these other studies could have been due to different geographical locations as well as the smaller sample size we used. Persons above 40 years were at more risk than those below 40 years; this could have been a result of the former group constituting the economically active hence they are exposed to an array of occupational hazards that puts them at risk of eye diseases. **[6]** found out that age was a risk factor where as **[3]** found out that no age was spared from eye diseases. The majority of the participants in our study were aware of eye diseases and the respective risk factors. It is possible that staying in compound settings on farms facilitated sharing of information amongst these participants. The majority of the respondents had formal education such that they could read even though there was no association between educational level and awareness of eye diseases (p=0.389). Most of the participants knew what triggered their eye diseases. This was not the case in Canada, when **[11]** found that a few respondents knew risk factors for specific eye diseases. Results by **[12]** showed that more than half of their respondents had no formal education and their awareness on glaucoma was very low indicating that educational level influenced awareness level.

Eye diseases were viewed by most of the participants as very severe and severe. The fear of losing one's job and the belief that healthy eyes were the basis for survival were the major reasons for viewing eye diseases as very severe. Dakar residents are mostly self employed and any disruption from work could affect their lives hence they rated eye diseases as very severe. This tallied with the findings from **[10]** where their respondents viewed the eye as the gateway or light to human existence, if the eye is lost the next thing is to die. They believed the eye to be superior to other body parts. More females than males reported to the hospital with eye diseases. This could have been due to the fact that enduring pain is a macho characteristic; therefore men might have been reluctant to report to the hospital. Most women who participated in the study are of child bearing age therefore had other reasons for reporting to the hospital such as immunization of the baby or antenatal care services. More than half of the participants reported dissatisfaction with eye services at Dakar rural hospital. Their reasons included unavailability of ophthalmologists and eye treatments at the local hospital. This tallied with the observation by **[17]** that in Africa only 30%

of people have access to eye care and the spread of resources is uneven across and within countries. The same situation was revealed in a study by **[16]** when they found out that absence of eye care personnel and inadequate facilities are the hallmarks of eye care in Africa. Barriers for not reporting to the hospital included financial constraints, not having a childminder, and not finding it necessary to report to the hospital. Most of these participants have made eye diseases part of their lifestyles hence do not view them as conditions necessitating hospital visit. Direct and indirect costs, family responsibilities among others were principal barriers to attending eye camps. **[20]** in Ethiopia also found similar results namely lack of money to cover transport, food and lodging costs for the accompanying person. Women reported not having anyone to care for the children and some reported that they could not afford the medical costs. In Nigeria, **[10]** also had similar results which included waste of time, not knowing who to consult among similar reasons alluded to above. **[18]** cited financial constraints; **[21]** cited transport and also noted personal, economic barriers to use of eye care services as this study and other studies have revealed.

Both males and females resorted to use of self treatment. There was no association between sex and use of self treatment (p=0.176). Dakar is aurban community; oral tradition is still prevalent so they pass on the knowledge on herbs to the next generations. The fact that they are continuously being exposed to the triggers of the eye diseases, they get tired of going to and fro the hospital without a change in the eyes and some believe the causes to be supernatural hence they resort to other treatments besides those they get from the hospital. **[13]** in Malawi found factors associated with use of self treatments as sex, religion and low socio economic status which is not exactly the case in Dakar where most respondents who opted for self treatment used traditional eye medication. **[5]** noted that almost half of his respondents had obtained eye treatment from the chemist or used traditional eye medication. **[14]** revealed that patients living farther from the hospital continued to report the use of traditional eye medication more commonly than those living near the hospital. This was in contrast with what was noted in Dakar as the distance from the hospital was not associated with the use of traditional eye medication.

In our study, there was an association between occupation and eye diseases (p=0.014). Farmers were the most affected followed by artisans (carpenters, welders, mechanics etc). Most of them worked on a farm setting and there was an association between work place and eye diseases. This

could be due to the fact that farmers work with chemicals and are exposed to different vegetation whilst artisans are exposed to flash lights and chemicals as well. Most of them reported not using protective eye wear and there was an association between occupation and eye diseases. These results were also echoed previously **[3, 5, 8, 15]**. All the participants who were employed reported the unavailability of protective eyewear. This was similar with results from a study by **[15]** in USA where 98.4% reported not wearing sunglasses in the field and their reasons included unavailability of the sunglasses.

The main source of health information in this study was reported to be peers or family. This showed that not much is being done by health workers to increase the awareness of eye diseases in the community. **[18]** revealed that the inadequacy of patient education has reinforced people not to use eye care services.

Implications for health promotion practice

It was found from the study that most of the participants have made eye diseases part of their lifestyles hence do not view them as conditions necessitating hospital visits. When carrying out health promotion activities it should be emphasised that being healthy is living a life you enjoy, and the result is that you can do anything as long as you enjoy it therefore Health promotion activities are intended to enhance health and foster a departure from the status quo toward an ideal state of health as yet unattained. Health promotion messages should be targeted to persons above 40 years who are at more risk than those below 40 years; this could have been a result of the former group constituting the economically active hence they are exposed to an array of occupational hazards that puts them at risk of eye diseases

The majority of the participants in our study were aware of eye diseases and the respective risk factors. It is possible that staying in compound settings on farms facilitated sharing of information amongst these participants. Having knowledge alone is not a sufficient predisposing factor that will not lead to realisation of the intended behaviours but we have to employ an array of techniques such as enabling factors which include availability of drugs and reinforcing factors which include waiver fees for those suffering from eye diseases.

The main source of health information in this study was reported to be peers or family. This showed that not much is being done by health workers to increase the awareness of eye diseases in the community. The community and health workers have to be involved in the social

diagnosis phase so that they both know that eye diseases are a major problem with serious consequences.

CONCLUSION

The continuous appearance of eye diseases on the top 5 reasons for outpatient department visits over the past ten years has become an issue of major concern, both nationally and at district level. 80% of the causes of blindness in Senegal are avoidable hence programmes targeting risk, enabling and reinforcing factors for behaviours that puts people at risk of eye diseases should be implemented especially in the rural communities. Approximately 80% of the visually impaired people live in the low resource countries of Africa and Asia, mostly in rural areas with few underutilized eye care facilities **[2]**.

Awareness of symptoms of eye diseases was high in the study population even though they do not know the specific eye diseases. The majority viewed eye diseases as very severe because they believe that the eyes are the basis for survival and cold lose their jobs if they become blind. Major enabling factors were occupation, not using protective eye wear, workplace, and smoking among others. Use of self treatment was very prevalent irrespective of sex or distance from the health facility.

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