Patient Perceptions of Eye Disease and Treatment in Bihar India

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Preventable blindness is an important issue in public health for developing nations around the world, especially in India [1]. Estimations of blindness in India by the World Health Organization (WHO) show 11.2% of the population suffering from preventable blindness with more than 2 million new cases expected each year [2]. With the second largest population after China, India’s eye care professionals are overwhelmed with an astronomical number of patients. Nearly 70% of India’s population resides in rural areas, and only 10,000 ophthalmologists are responsible for the care of the entire population — a ratio of 1 ophthalmologist per 100,000 people [3].

Cataracts plague the world with over 17 million cases [4]. The Indian population accounts for 1 of every 3 cases worldwide. Most of the patients suffering from cataracts are found in rural villages where money and education are scarce. Studies show that almost 30% of persons living in rural areas of India have never sought care from any kind of health care facility [5]. Many efforts have been made to provide free services to patients in these rural communities. As many as 70% of participants in a rural study of southern India reported an awareness of cataracts, and in the same study only 15% of participants knew what a cataract was and how it is treated [6].

Additionally health illiteracy among India’s population is problematic, leading to residents who are not aware of prevalent eye diseases and possible treatments. Currently, India’s adult literacy rate is 64.2% [7]. In an effort to address the nation’s untreated eye conditions, the WHO and the International Agency for Prevention of Blindness (IAPB) partnered with the Indian government to create India’s VISION 2020: Right to Sight [8]. In this initiative, seven focus areas are identified: cataracts, childhood blindness, refractive errors and low vision, corneal blindness, glaucoma, and diabetic retinopathy [9]. With this in mind, we developed a qualitative survey to get an initial picture of the patients suffering from cataracts in rural villages where money and education are scarce.

Methods

The present study was developed in collaboration with Unite for Sight, an American Non-Governmental Organization that supports local eye doctors in developing countries, and their partner clinic the A. B. Eye Institute, in Patna India. The communities identified in the outreach efforts of the A. B. Eye Institute served as an initial assessment of patient’s baseline knowledge of eye conditions and possible treatment methods to aid in the future development of educational outreach initiatives and studies. The survey was administered verbally with the help of native speakers and translators to 304 subjects aged 40 and older (56.1% male, 43.9% female). The mean age of the participants was 53.89 (± 10.851) years. The study was conducted from March to September 2010. A convenience sample was used from the A. B. Eye Institute in Patna and its rural satellite clinics. Research has concluded that 90% of blindness occurs within this age group [1]. Questions were based on prior research, including the focus areas in India’s VISION 2020 initiatives, the A. B. Eye Institute, its patients, and the socio-economics of Patna. Multiple choice survey questions were translated into Hindi and read verbatim by native speakers. Verbal responses from participants were recorded by hand. Ethics review was received through the Institutional Review Board at the University of Utah. Study data was analyzed using PASW Statistics 18.0 software.

Results

Data collected showed that 61.3% of participants were living on 100 rupees or less per day. Previous eye doctor visits were reported by 68.3% of subjects. 25.7% of subjects reported using eye drops prescribed by someone other than a doctor, and of those, 52.6% reported not knowing that a doctor should prescribe eye drops (Figure 1). 71.9% of subjects accurately reported that a cataract is treated by surgery, while 23.4% did not know. Of those aware of cataract treatment, 41.9% learned about treatment from an eye care professional, and 36.4% from someone with a cataract (Figure 2). 17.1% of participants reported diabetic diagnosis by a doctor, and of those, 64.7% inaccurately reported how often diabetics should receive eye exams (Figure 3). Furthermore, 60.3% of patients reported no awareness of the condition glaucoma and 80.9% did not know that blurry vision caused by glaucoma is irreversible.

![Figure 1](image-url)

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awareness regarding vision impairment due to diabetes. Because of the
avoid consultations by an ophthalmologist [9]. The study also found
impression that adequate glycemic control was sufficient enough to
participants with a confirmed diagnoses of diabetes were under the
awareness about diabetic retinopathy and found that one third of the
Rani et al. conducted a study in Tamil Nadu (south India) examining
inaccurately reported how often diabetics should receive an eye exam.

Diabetes

The progression of diabetes can lead to many systemic
complications, including diabetic retinopathy. In our study, 17.1 % of
participants had a confirmed diagnosis of diabetes, and of those, 64.7%
inaccurately reported how often diabetics should receive an eye exam.
Rani et al. conducted a study in Tamil Nadu (south India) examining
awareness about diabetic retinopathy and found that one third of the
participants with a confirmed diagnoses of diabetes were under the
impression that adequate glycemic control was sufficient enough to
avoid consultations by an ophthalmologist [9]. The study also found
a positive correlation between education, socioeconomic status and
awareness regarding vision impairment due to diabetes. Because of the

Glucoma

In our study, an overwhelming 60.3% of participants did not know
about glaucoma. This is a significant proportion, and further highlights
the need for outreach programs focused on patient education. Despite
advanced surgical techniques that aim at controlling IOP, blindness
caused by glaucoma continues to be a growing trend worldwide,
especially in India [11]. One of the challenges in management of
glaucoma is that symptoms do not present until the late stages of the
disease. The majority of the developing world has limited access
to routine eye exams, and consequently, these are the people at high
risk of developing late stage symptoms and subsequent irreversible
blindness. The association between a lack of awareness of glaucoma
and late clinical presentation of the disease has been highlighted in
studies around the world. The Barbados Eye Study (BES) found that
of participants with primary open angle glaucoma, 51% were unaware
of the term or nature of the disease [12]. More specific to India is
the Andhra Pradesh Eye Disease Study (APEDS), which showed
that awareness of glaucoma was very limited in rural populations in
Southern India [13]. Our research suggests that educational outreach
regarding glaucoma would benefit the communities of Patna, Bihar,
India.

Cataract

Our study data indicates an encouraging level of awareness for
cataracts and treatment methods. These results reflect positively on
existing efforts to increase cataract awareness in Patna. Information
about cataracts is being relayed effectively from doctor to patient, and
patient to family and friends. Because of high participant awareness
of cataracts and treatment, future educational outreaches should be
focused on different areas of ocular health, such as diabetes-related
vision problems and glaucoma [14].

Conclusion

Our data suggests that residents in Patna, Bihar India could
benefit from educational outreach programs specifically addressing
prescription eye drop usage and ocular health complications specific
to diabetes and glaucoma. Increasing patient awareness of prevalent eye
diseases and treatments could lead to an increase in patient acceptance
of the importance of routine eye examinations for timely identification
and treatment of many eye conditions. The data reported here will help
eye care professionals and health educators target specific educational
initiatives for the target population.

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