



## Original articles

# Utilization of primary eye health services by people from a rural community of Nepal

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## Abstract

**Introduction:** Preventable and treatable eye diseases are still major causes of blindness in rural communities.

**Objective:** To find the factors influencing utilization of primary eye health services among the people in a rural community of Nepal.

**Materials and methods:** This was a population-based study with a cross-sectional and descriptive design. Lete Ilaka in Mustang District of Nepal was the study site. Data of knowledge on eye diseases, availability of services and utilization of available services were obtained from female care takers. Association among variables was observed by bivariate analysis.

**Results:** A total of 216 female care takers participated in the study. The median age of the respondents was 39 years. Almost 80 % of the respondents had agriculture as their major occupation and more than a quarter were from lower castes (dalit) community. Low level of educational attainment (OR = 3.1, 95 % CI = 1.6-6.1) and poverty (OR = 2.0, 95 % CI = 1.13-3.43) among respondents were found to be significantly associated with a low level of awareness on eye diseases. The risk of not knowing about eye diseases increased more than 3.5 times when people were illiterate. Locally available eye health services and skills amongst the health workers were found inadequate.

**Conclusion:** Low level of education, poor knowledge of eye diseases and great distance from home to health facilities were found to be factors on the demand side while inadequacy of eye health services and perceived inadequate skills among health workers were identified as factors in the supply side affecting utilization of eye health services among people of Mustang District.

**Key-words:** eye health services, Mustang, rural community, utilization

## Introduction

The ultimate goal of "Vision 2020: The Right to Sight" is to integrate a sustainable, comprehensive, high-quality; equitable eye care system into strengthened national health-care systems (Action Plan

2006-2011). The initiative sets a major challenge requiring a significant increase in the provision and uptake of eye care services. If the increasing trend in blindness is to be reversed, then eye care services should not only be available but also be increasingly easily accessible. The eye services should also be affordable as one of the most significant barriers to utilizing these services is inability to pay for the services. Whilst the removal of treatment

Received on: 07.08.2011

Accepted on: 02.12.2011

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fees or the introduction of subsidies may improve the problem, the issues of affordability are far more complex. To increase the uptake of services, we also need to examine and understand the nature and social context of indirect cost barriers (Kyndt, 2001).

Nepal is committed to the goal of Vision 2020 and elimination of avoidable blindness is of primary concern. The National Blindness Survey (NBS) 1981 led to the establishment of national eye care program for the control and prevention of blindness in Nepal. The program was launched with a two pronged strategy: (1) development of training program for eye care professionals to staff hospitals and eye care centers, (2) establishment of primary, secondary and tertiary eye care centers in areas where services were most in need. (Pokharel et al, 1998).

Access is a multidimensional concept that has been defined as “those dimensions which describe the potential and actual entry of a given population group into the health care delivery system” (Anderson et al, 1983). Availability, accessibility, accommodation, affordability, and acceptability are five key elements of access (Penchansky et al, 1981). Patients and providers could have different perspectives regarding access to care (Zhang et al, 2008). Providers may care much more about outcomes, whereas patients also value convenience, timeliness, a comfortable environment, the provider’s attitude, communication, and other aspects of care (Anderson et al, 1983).

Any mismatch between provision of clinical services and clinical need is regarded as evidence of inequitable access to health care (Majeed et al, 2008). A large proportion of blindness is avoidable or easily treatable. To address this situation, interventions specific to blindness are required, which will include prevention, eye health promotion, protection, treatment and rehabilitation. This is increasingly recognized as an important attribute of modern health care system. The problem of blindness is acute in rural areas and hence the program must try to expand the accessibility of ophthalmic services in these areas (Rao, 2004).

The problem of low uptake of eye services in developing countries has taken a lower priority to more pressing needs for resource provision. Some evidence exists that, even when eye services are available, they are underused by potential beneficiaries (Fletcher et al, 1999). Nepal has 75 administrative districts. Each district has been further divided into several smaller sectors called Village Development Committees (VDC), which are regarded as grassroots administrative units. Around 2-5 VDC’s depending on the population make an ilaka where Ministry of Health has a provision of one Primary Health Care Center (PHCC) each. We were interested in finding out barrier to utilizing eye health services among people living in different terrains of Nepal. In this context Mustang a mountainous district of Nepal which lies at an elevation of 2,500-3,000 meters above sea level was chosen. The whole district has only one Non Government Organization (NGO) run community eye center located at the district headquarter Jomsom which provides basic primary eye health services. Lete ilaka, which lies eight miles south to the district head quarter, has almost 30 % of its people below the poverty line. Majority of the people have agriculture as their major occupation and the literacy rate is as low as 50 % which is far beyond the national average of 62 %. Lete and Kunjo VDC from the ilaka have a PHCC and a Sub Health Post (SHP) respectively; both of which are government run health facilities where primary eye health services are available.

Identification of factors affecting utilization of primary eye health services helps the government and other eye care providers to address inequity issues in their eye care program. Some studies on awareness of cataract and surgical service utilization for the condition have been done in Nepal but there is no published literature on availability and utilization of primary eye health services.

### Materials and methods

It was a population based study, cross sectional and descriptive in nature. Both qualitative and quantitative methods were used in the study. Factors influencing utilization of eye health services on demand side were collected by quantitative methods

while those on the supply side were collected by qualitative methods. Lete ilaka of Mustang district which includes Lete and Kunjo VDC's were selected purposively. For blindness prevalence rate of 0.85 in the region; allowable error of 5 % and assumption of a non response rate of 10 %, the sample size for quantitative data was calculated to be 224. Households from two VDC's were taken proportionate to the population. One female care taker at each household above the age of 15, who consented to participate in the study, was enrolled for the survey. Structured questionnaire was used to collect quantitative data on various socio demographic, socio economic, geographic and cultural variables influencing access to eye health services. The pre- tested tool was administered by trained enumerators with non health background from the same locality so as to reduce possible biasness. Pretesting of the tool was done to maintain validity while supervision and monitoring was done at the household level by the principal investigator every alternate day for reliability.

With a non response rate of 4 %, data from 216 households was available for analysis. Similarly factors in the supply side influencing utilization of eye health services by people from the community were sought through Focus Group Discussion (FGD) with FCHV's working in the ilaka and Key Informant Interview (KII) with general health workers from the local health facilities.

Eight FCHV's (four from each VDC) and three health workers served as source of information for qualitative data. FGD guidelines and KII guidelines were used respectively to collect data. Data collection was done by the investigator themselves. For quantitative data, the data entry was done in Epi-info version 3.5.1 software and analyzed using SPSS version 17 software; simple frequencies and relationships between variables were calculated. Chi-square test was used as the test of significance. Finding with p-value less than 0.05 was considered statistically significant at 95 % level of confidence. For qualitative data, all the data was read carefully, transcribed and a category system was constructed based on the homogeneity of data. Data

was coded according to the category system and data belonging to each category was sorted, retrieved, assembled manually and viewed. Interpretation was made in a descriptive way (as summary of the findings) making reference to field notes and other data sources.

## Results

A total of 216 female care takers at household participated in the study. Median age of the respondents was 39 years and the age range was from 16 to 94 years. Almost 80 % of the respondents had agriculture as their major occupation and more than a quarter were from lower caste (dalit) community. Low level of educational attainment (OR=3.1, 95 % CI=1.6-6.1) and poverty (OR=2.0, 95 % CI= 1.13-3.43) among respondents were found to be significantly associated with low level of awareness on eye diseases. The risk of not knowing about eye diseases (mainly cataract, glaucoma and night blindness which are more common) increased more than 3.5 times when people were illiterate (Table 1). However the relation of caste and occupation of the respondent were not found to be significantly associated either with awareness or with knowledge on eye diseases.

**Table 1**  
**Relation between knowledge of eye disease**  
**and level of education of the respondent**  
**(N=216)**

Knowledge on eye disease	Level of education		Chi square, p-value	Odds Ratio, 95 % CI
	Illiterate	Literate		
<b>Cataract</b>				
No	58	73	19.62, p=0.000	4.40, 2.21-8.72
Yes	13	72		
<b>Glaucoma</b>				
No	70	128	6.64, p=0.010	9.30, 1.21-71.33
Yes	1	17		
<b>Night Blindness</b>				
No	58	81	13.86, p=0.000	3.53, 1.78-6.99
Yes	13	64		

Among 113 respondents who were aware of one or other eye diseases, 74.7 % identified dirty things fallen into the eyes as the cause of an eye problem followed by 50.2 % of the respondents who pointed out injury to the eyes as the culprit. For emergency problem in the eyes 79.1 % respondents told that they sought services from health facilities without delay, while 15.5 % gave priority to starting household treatment.

Positive history of eye problem in the family was given by 20.4 % of the respondents, majority of whom had itchy eyes with burning and foreign body sensation. Regarding the seeking of eye care services, 52.3 % respondents who gave a positive history of an eye problem in the family told they attended the nearest health facility; PHCC, Health Post (HP) or SHP while 19.1 % did actually go to the eye health center. Only 1(4.8 %) respondent did not seek any service. The reason for service not been sought was the belief that the condition was normal. On the prevention aspects, 71 % gave importance to regular ocular hygiene however 1.4 % emphasized on superstitious belief (pay respect to gods, goddesses).

Regarding the accessibility to health facility 51.6 % of the respondents said that the nearest health facility was at a walking distance of more than half an hour from their locality. Eye health services were utilized when the distance to health facility from home was less ( $p=0.04$ ). Eye health services were believed to be available in those health facilities by 96 % of the respondents. However, KII with health workers and FGD with FCHV's revealed that the availability of primary eye health services in the ilaka was very poor. Upon exploring for the availability of eye health services and adequacy of human resource for eye care delivery the FCHV's shared that the services available at health facilities were not adequate and people had to rely on eye camps.

*“Eye care in this area has been mostly provided by eye camps. Our health facilities do not have basic services for eye health delivery”*- a 40-year old FCHV.

Upon further probing for the instruments and medicines available at their health facility for the management of eye disease, health workers from both health facilities informed that they only had three varieties of antibiotics, with stocks not sufficient to last 3 months. Vision chart for testing of visual acuity were not available. They admitted to not having sufficient skills for removal of even conjunctival foreign body in the eyes.

*“How can we provide treatment to several kinds of diseases in the eye even if we know how to treat a case when only three medicines are available for treatment in the whole ilaka.”*- Health worker from a local health facility

Both groups suggested provision of broader range of medicines, glasses and facility for minor eye surgeries in the same VDC. On exploring for the trainings on eye health obtained by both the cadres of health work force, FCHV's unanimously said that they had not received any while the health workers said that they did obtain short training courses long time back but never had a refresher course thereafter.

As to the nature of eye health service provider in the health facilities, 69.6 % respondents believed the provider to be an eye doctor, 20.8 % believed it was a technician while 7.7 % of the respondents had no idea who the service provider was. In contrary the FCHV's and general health workers said that eye specialist was not available in any of their health facility.

## Discussion

This probably was the first population based study on evaluating the access to eye health services in a rural mountainous population of Nepal, though several studies have been done in the past to find the barriers in access to cataract surgical services among people of the older age group (Pokahrael et al 1998). The data from the supply side are of particular importance as it gives the true picture of the services at the rural health facilities of Nepal where there are inadequate provision not only for eye care but



also for general health services.

The study has found almost two third (63 %) of the respondents to be aware of one or more diseases of the eyes. The level of knowledge regarding specific eye diseases though was less, the figure is comparable to a similar study done in Australia where 77 % of the people reported they were aware of one or more of the three eye conditions; cataract, glaucoma and AMD. The correct knowledge was found to be associated significantly with age (younger), sex (females), higher levels of formal education and a recent visit to an eye practitioner (Livingston et al 1999). Similar study done in an urban population of India found 69.8 % of the respondents aware of cataract, 55.8 % aware of night blindness and 2.3 % aware of glaucoma. Level of education was found to be a significant predictor for the knowledge on these eye conditions (Dandona et al 2001). In this study cataract as an eye disease was known to 39.2 % respondents while 35.5 % respondents had knowledge on night blindness. Glaucoma as an eye disease was known to 8.3 % respondents only. For glaucoma, early detection and prevention may prevent progression of the disease, but because of its “silent” nature early detection of glaucoma is difficult unless the patient undergoes an eye examination. Hence, an increase in the level of awareness of glaucoma in our population is essential if more people are to be screened for the condition. Significant association was observed between the level of education of the respondent and the knowledge in all of the three eye diseases, but level of education seemed to be more critical for knowledge of glaucoma.

Several studies have been done to find the barriers for low uptake of available eye health services. A study done in a rural population of India found low uptake of eye camp services mostly due to fear reasons (Fletcher et al 1999). Our study identified poor knowledge of eye diseases and greater distance to health facilities as factors hindering access to eye health services among people in the Lete ilaka. However positive attitude of people towards eye

problems and appropriate practice of eye care even in a community with low HDI levels were encouraging. The respondents or their family member whoever was affected within the past one year sought treatment from the local health facility at the first available opportunity. Minority who did not seek any treatment had less troubling eye condition and they believed it was not that serious enough to seek a professional advice. Access to eye health services was not found to be affected by socioeconomic and other socio demographic variables as age, ethnicity, occupation of the respondent. Rational planning and implementation of eye health services is essential with due attention to the barriers to overcome poor service utilization.

Equity of access exists when use of eye care services is based on an individual’s needs but not on the person’s age, sex, race/ethnicity, income, geography, education, or other characteristics. From a public health perspective, appropriate health care legislation, extensive public awareness education, and effective public health interventions can then be initiated and implemented to improve, first, the whole population’s “potential” to access health care services, then their actual or “realized” use of health services, and, finally, the outcomes and satisfaction associated with eye care utilization.

The study found the local health facilities in the ilaka to be poorly equipped. Health workers and female community health volunteers working at the grass root level emphasized the importance of improving the availability of eye health services, adequacy of human resources for eye health and regular trainings plus refresher courses to strengthen their knowledge and skills on eye health. Unavailability of eye health service provider in their locality, inadequate eye care services in their local health facilities, unavailability of professionals for eye health delivery and inadequate skills among general health workers were some of the factors identified in the supply side which negatively influenced the access of eye health services among people of Lete ilaka.

## Conclusion

Knowledge on common eye diseases was found to be poor among the people of Lete ilaka. The respondents had the risk of being ignorant about the diseases more than three times when they were illiterate. This indicates the need for effective eye health awareness programs which helps in prevention and timely seeking of eye care services. The magnitude of eye problem seemed to be low in the ilaka as only 19.4 % of the respondents gave a positive history of an eye problem in the family within a year. Availability of eye health services in the nearest primary health center was not known to 6 % female caretakers at household from Lete VDC. Raising awareness of the community about eye diseases and the services available together with strengthening of primary eye health services available at the local health facilities could help bring eye health services in closer proximity to the rural population.

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Source of support: nil. Conflict of interest: none