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Knowledge, Attitude and Practice Regarding Eye Health and Eye Health Services in Nepal

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ABSTRACT

Background: This study was conducted to identify knowledge, attitude and practice of the public in relation to eye health and to assess their knowledge of eye health seeking behaviour.

Methods: A three-stage cluster survey was conducted in 15 selected districts of the five development regions of Nepal from May to December 2017.One hundred clusters and fifty households from each cluster were randomly selected. A semi-structured questionnaire was developed in English and translated into Nepali and back translated by experts. Data were entered in CSPro 5.0.3 software and imported to R 3.4.1 software for analysis.

Results: Three fourth of respondents were between the age of 20-59 years (84 %) and one third were female (37.4%). 78% of respondents had basic knowledge about ocular diseases (ranging from 68 to 95%). No single method was found to be more appropriate than the other to provide eye health education to the people living in different geographical locations. Radio was more appropriate to provide health education in Doti and television in Saptari district. Around 2% of the people still depended on drug retailers, 0.6% on self-medication and 0.1% on traditional healers for treatment.

Conclusions: The knowledge, attitude and practice of the respondents varied between various districts and with different demographic characteristics.The overall knowledge, attitude and practice score and respondent's knowledge about common eye diseases requires improvement. Different methods can be used to educate public about eye health and common eye diseases.

Keywords: Attitude; eye care; knowledge; Nepal; practice; services.

INTRODUCTION

The eye health system in Nepal has developed substantially during the last three decades.[1] Nepal has achieved self-reliance in eye health care.[2] However, in practice, the eye care services are neither used fully nor is it completely successful in eliminating avoidable blindness in Nepal.[3]

This study was conducted by the Nepal Netra Jyoti Sangh. For the prevention of blindness, Nepal launched "Vision 2020: The right to sight" in 1999 and a 20-year plan was presented in September 2001 with an objective to eliminate avoidable blindness by the year 2020.[4] Trachoma is a major reason for blindness among various people worldwide.[5] There are few studies done in this area in Nepal and other developing nations. The objectives of the present study were to identify knowledge, attitude and practiceof the public in relation to eye health, eye health seeking behaviour.

METHODS

A three-stage cluster survey was conducted to assess the KAP status regarding eye health in 15 districts of Nepal from May to December 2017. The population and

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household statistics used were based on the final census report of the Central Bureau of Statistics, 2011.

The sampling stratification was based on the five development regions. The 15 districts included in the study represented districts from mountain, hill and terai belts of the development regions. A total of 100 clusters (wards of the VDCs) were selected randomly from these 15 sampled districts during the second-stage of sampling. Table 1 shows the selection of districts from the various development and ecological regions.

Table 1. Cluster distribution.

Development Region	Ecological zone	District	Clusters
Far Western Region	Terai	Kanchanpur	3
	Hill	Baitadi	9
	Hill	Doti	2
Mid-Western Region	Mountain	Jumla	4
	Hill	Surkhet	5
	Terai	Dang	4
Western Region	Hill	Baglung	8
	Hill	Gulmi	9
	Terai	Nawalparasi	7
Central Region	Terai	Bara	14
	Hill	Dhading	7
	Mountain	Dolakha	5
Eastern Region	Hill	Ilam	9
	Hill	Dhankuta	3
	Terai	Saptari	11
Total		15 Districts	100 Clusters

Household in these 100 clusters were listed and 50 households were then selected randomly from each cluster. Households were contacted for face-to-face interview by trained interviewers. A semi-structured survey questionnaire was developed on the basis of initial qualitative analysis results from the experience of the last two decades on eye health education programs in the country. The questionnaire examined all components of the study: Knowledge and attitude about eye diseases, its prevention, and availability of eye care services, and current practices in the study area in case of eye health problems.Also, public awareness about information, education and communication (IEC) activities were included in the questionnaire.

The questionnaire was created in English and then translated into Nepali by a bi-lingual expert. This questionnaire was pre-tested on 10% of the total sample size in the non-study cluster, three weeks before data collection. Based on the information obtained from the pilot test, necessary adjustments were made to ensure its appropriateness to the local context. The questionnaires were administered to the head of the household. Ethical approval was obtained from the Nepal Health Research Council (Reference number 112/2017). Written consent was obtained from the respondents. Verbal permission from the Department of Health Services was also obtained.

The completed forms were collected at NNJS central office and were verified by the study team. Data entry program was developed based on data validation logics using CSPro 5.0.3 software.[6] Once the complete data of one cluster (50 households) was ready, it was immediately imported to the R software version 3.4.1 for further quality checks.[7] A meticulous and iterative data cleaning and validation process was carried out. Descriptive statistics were then computed based on the cleaned and aggregated dataset of all the clusters using the R 3.4.1 software.

RESULTS

More than three fourth (78%) of the study population had heard about common eye diseases. Knowledge was found to be maximum(90%) in the mid-western development region (MWDR)and highest in Dang district (95%). Around 22% of the study population could not mention any common eye diseases; 66% knew about conjunctivitis or red eye. Around 65% knew about cataract followed by night blindness (around 48%). Very few (1.5%) knew about diabetic retinopathy. Knowledge about cataract was higher in Ilam district (94.3%) followed by Dolakha (89%), Baglung (87%) and least in Gulmi (29%) and Baitadi districts (33%). More than half (53%) did not know about the causes of cataract. Around 33% of the respondents mentioned old age as a cause of cataract followed by 12% who mentioned genetics as a cause of cataract.

Around 20% did not know about the treatment of cataract and 19% of glaucoma. Majority (68%) mentioned surgery as a treatment for cataract followed by 25% who mentioned oral medicine/ointment. Around 38% stated oral medicine/ointment as a form of treatment followed by personal hygiene (19%) for glaucoma. Only 1% said that traditional healers can treat cataract and < 0.5 % mentioned that there is no treatment for cataract;37% did not know about the causes of trachoma. Around 37% of the study population who mentioned they knew the cause said waste/pollution can cause trachoma followed by 28% who mentioned old age. Only 48% knew

about night blindness. Low consumption of vitamin A containing foods as a cause of night blindness was mentioned by 71% followed by waste/pollution (39%). Majority (72%) knew that intake of vitamin A rich foods can be a treatment for night blindness followed by taking oral medicines/ointments (50%). About 65% mentioned dirt/smoke/pollution as a cause followed by 56% who mentioned communicable infections as a cause of red eye. Percentage of population mentioning medicine/ ointment, avoiding dirt/smoke and maintaining personal hygiene as a treatment of red eye was 75%, 66% and 49% respectively. Around 40% and 15% of respondents mentioned that diabetic retinopathy is because of unhygienic food and unhygienic lifestyle respectively.

Only 62% had heard about the outreach activities like eye camps, school screening, public awareness, and eye care training programs in their VDCs or districts. Table 2 shows the knowledge about IEC materials developed for public awareness on eye care in Nepal among the study population.

Table 2. Knowledge about materials developed for public awareness about eye disease in Nepal.

District	Yes		No		Total
Ilam	107	24%	343	76%	450
Saptari	41	7%	507	93%	548
Dhankuta	8	5%	142	95%	150
Dolakha	20	8%	228	92%	248
Bara	73	10%	624	90%	697
Dhading	36	10%	314	90%	350
Nawalparasi	118	34%	232	66%	350
Dang	53	27%	147	74%	200
Gulmi	6	1%	442	99%	448
Baglung	36	9%	366	91%	402
Jumla	46	23%	154	77%	200
Surkhet	15	6%	235	94%	250
Doti	4	4%	96	96%	100
Baitadi	27	6%	423	94%	450
Kanchanpur	61	41%	89	59%	150
Total	651	13%	4342	87%	4993

Among the study population 56% thought eye diseases was due to pollution, dirt or smoke, 53% due to waste/ poor sanitation, 45% due to poor nutrition, while 13% did not know the cause. Study population of Doti (99%), Illam (96%), Baitadi (92%) and Kanchanpur (77%) districts commonly considered pollution/dirt/smoke as the cause of ocular disease. Various reasons identified for eye diseases were age, genetics, lack of eye care and excessive use of gadgets.

Barriers for accessing eye health services were financial (55%), distance (46%), disability/old age (13%) and lack of transportation, followed by lack of time for 11% of people. Causes for uneven access/underutilization of existing eye care services were cost(56%), followed by illiteracy/lack of awareness (49%), and poor publicity (26%). Cost was responsible for low service utilization among respondents of Doti (99%), Baitadi (96%), Kanchanpur districts (95%) from the far western development region, and Gulmi (95%) and Baglung districts (80%) from the western development region; followed by poor awareness level, lack of publicity and engagement in household work were other reasons. Females more commonly underutilized eye care services compared to males and the reason may be lack of public awareness which was seen in Dhading (73%), Gulmi (62%), Kanchanpur (61%), Illam (58%) and Baitadi districts(54%).

Almost 45.2% and around 41% of them went to eye hospital/eye care centers to check their eyes in case of eye problem. Percentage visiting private hospital or clinics for check-up was very low (9.3%). Study population visiting local drug retailers were only 2% and were more commonly seen in Saptari (9.9%) followed by Nawalaparasi district (8.3%). Visit to the health care centre during last 6 months were higher in Baitadi (13.6%) followed by Dhankuta (12.7%) and least from Ilam and Dhading districts (0.9%) respectively. Similarly, visiting health facilities due to eye problems only was found to be more common in Dhading (100%), Saptari (85%) followed by Bara (80%), Baglung (79%) and least in Gulmi (2%) and Dhankuta districts (7%).

Around 19% of them were diagnosed to suffer from low vision and 13.4% were having conjunctivitis and 13.1% cataract. Population suffering from low vision was higher in Bara (51%). Highest percentage of cataract was seen in Baitadi (25%) followed by Bara district (24.3%). Similarly, only 25% were operated in surgical eye camps and 75% were operated in eye hospitals; 52% had experienced big change in life after surgery, 44% had experienced some changes and 4% had experienced no changes after the surgery(Table 3). The appropriate ways to channelize and spread eye health education in the community according to the respondents were health posts (73.9%), female volunteers (57.5%) followed by students (11.3%) and teachers(10.7%).

Table 3. Changes in quality of life after surgery.

Conditions after surgery			Changes occurred after surgery		
Prognosis	Frequency	%	Perceived Changes	Frequency	%
Better Than Earlier	280	91%	Many Changes	162	52%
Same to Same	25	8%	Simple Changes	135	44%
Worse Than Earlier	4	1%	No Changes	12	4%
Total	309	100%	Total	309	100%

DISCUSSION

Nepal is a country with a multi linguistic, and multi ethnic population and wide altitude variations. There is a wide network of eye hospitals and eye care centers. Despite this there may be uneven access or underutilization of existing eye care services.

Knowledge about common eye conditions was good among 78% of the study population. This was higher compared to the previous data from the survey done by NNJS in 2012 where the knowledge was only 52.9%. Around 65% knew about cataract followed by night blindness (48%), which was again better compared to the previous report having 47% and 23% knowledge for cataract and night blindness.[8]This result was nearly similar to a study done in Nepal.[5,9]Very few (1.5%) knew about diabetic retinopathy. Only 65.7% had heard about cataract. These results are in accordance with a study done in Nepal which found that treatable blindness is still high.[5] This study showed that knowledge about cataract was higher in Illam (94.3%) and least in Gulmi district (29%). This low awareness could be attributed at least partly to the unequal and uneven access and/or underutilization of existing eye care services.[10]

According to a previous study, there is a wide practice of consulting traditional healers for ophthalmic conditions, and these individuals are found to be involved in treating various ophthalmic conditions in rural areas of Nepal.[11,12] Personal hygiene was mentioned as a treatment by 38% of participants and this has been reported previously.[12] Majority (72%) of participants knew that intake of vitamin A rich foods can be a treatment for night blindness. Maximum people were aware about night blindness because of the national campaign for eliminating night blindness in Nepal which is continuously running in forty-two districts of Nepal since 1998.[13] Our study revealed very low awareness about diabetic retinopathy. Most participants said that diabetic retinopathy is due to unhygienic food, lifestyle and hypertension as shown previously.[14]

Only 13% knew about outreach activities like eye camps, school screening, public awareness and other eye care training programs. A previous study showed 80% of the total population and 90% of Nepal's blind people reside in rural areas.[10] These individuals may be under utilizing the healthcare services including eye care services. [13,15] Geriatric individuals are more likely to suffer from vision deterioration and might be less proactive about their eye health issues.[16] Literacy rate is higher in urban areas (64%) and lower in rural areas (34%), and this may be a reason for the respondents not being able to understand the developed IEC materials.[10] In addition, patients with less knowledge about eye diseases do not go to the outreach clinics/free health camps.

Other barriers mentioned were financial barrier for 55%, distance for 46% of participants, disability/old age and lack of transportation for 3%. Non-threatening nature of ocular diseases was also mentioned as a reason for delay in seeking treatment. For the elderly, lack of persons who could accompany them for their eye health check-ups was also a barrier.[12,16]

Similarly, low female involvement in health decisions at household level was mentioned as a reason in Dolakha district which is similar to a previous study.[1] Females from rural areas have lower awareness and income which might be a potential barrier for seeking eye healthcare resources.[17,18] A study done in Nepal advocates for gender specific programs to address these barriers. Our results also support this opinion[10,11]

Eye health care service utilization can be influenced by many factors which also may influence utilization of general health services.[18] Studies have mentioned various factors influencing the utilization of healthcare services.[19,20] In developing countries like Nepal, there are problems in accessing healthcare services and the cost is high.[21-23] Improved access and utilization is important for achieving the goal for vision 2020, the right to sight.[24]

There is a need for culturally appropriate educational programs targeted at the elderly. However, without adequate awareness and knowledge, visit to outreach clinics may not translate to acceptance of treatments, such as cataract surgery, or timely presentation for

services when they are not free and easily accessible.[25] A study showed that even when offered free transport and free surgery, the utilization of cataract surgery in parts of rural Nepal was as low as 60%.[25] Barriers towards the utilization of eye healthcare services in Nepal has been recently studied.[26]

Another study done in Nepal also mentions about the underutilization of the eye care services.[10] Almost half utilized Primary Health Care Centre/Health Post/ Government Hospital (45.2%) and around 41% went to eye hospital/eye care centers in case of eye problem. In another study done in Nepal, the percentage of people visiting hospitals was higher than in our study where about 52.3% people were going to the hospital and primary care facilities. A study from Nepal also suggests that though there is access to tertiary care, the effective coverage of eye care services is still lacking. [27]

Change in quality of life after surgery was found among more than 90% of respondents. This result was better than a previous study where the change in quality of life was seen in 88% of respondents.[28]

The sample size calculation and cluster calculation was done as per the previous report published by NNJS In 2012. There were no mountain districts included from eastern, western and far western region, and the authors accept this as a limitation. Also, not doing subgroup analysis using statistical tests is another limitation of the study.

CONCLUSIONS

The present survey was conducted to evaluate changes in peoples' KAP towards eye health after completion of National Eye Health Education Program with the objective of using this data to plan various future eye health education activities. Knowledge about different types of eye diseases was found to be inadequate and there is a need to strengthen eye care services in Nepal. There is a need of more awareness programs in the rural areas of the country though several community outreach activities have been ongoing.

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