Knowledge and Attitude of Refractive Error Correction Methods in Patients Visiting Eye Hospital

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ABSTRACT

Introduction: There are different types of refractive error correction methods that are either appropriate or appealing to all patients. Although spectacles appear to be the most common method of visual correction, there is no single method preferred for correction that is accepted by all patients. Knowledge and attitude towards methods of correction may influence the preferred method of correction.

Objective: To determine the knowledge and attitude of patients towards refractive error correction methods.

Methodology: This analytical cross-sectional study included 150 subjects aged ≥18 years who visited the refraction unit of Himalaya Eye Hospital. They were randomly interviewed using structured questionnaires which consisted of open- and closed-ended questions to gather information on demography, knowledge, and attitude towards different eye care practitioners as well as spectacles, contact lens, and refractive surgery for correcting refractive error and analysed using descriptive statistics for frequency and Chi-square test for analysing association between variables.

Result: Out of 150 participants, Majority of the participants had history of ocular examination. Only 67 (44.7%) participants had history of using spectacles, whereas 33 (22%) participants knew about the contact lens and 21 (14%) participants were aware about the refractive surgery as a method of refractive correction. Lack of information and fear of side effects were the major reasons for not using contact lens and refractive surgery as a method of refractive error correction.

Conclusion: The knowledge and perception about the refractive error correction methods, especially for contact lens and refractive surgery, was low among the participants.

Key words: Attitude; awareness; contact lens; refractive error; refractive surgery; spectacles.

Financial Interest : Nil
Conflict of Interest : Nil

Received : 08.04.2024
Accepted : 05.03.2025

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Access this article online
Website: www.nepjol.info/index.php/NEPJOPH
DOI: https://doi.org/ 10.3126/nepjoph.v16i2.64632

ISSN: 2072-6805, **E-ISSN:** 2091-0320

INTRODUCTION

Vision is the most dominant among the five senses and it plays the most vital role in maintaining high quality of life (World Health Organisation, 2019a). Refractive error correction received a high priority in the global initiative to eliminate avoidable blindness: Vision 2020 - The right to sight (World Health Organisation, 2007).

The prevalence of different types of refractive error in Nepal is not exactly known. In one study overall prevalence of blindness has been shown to be 0.9%. The most common cause of visual impairment and blindness was cataract (53.5%) followed by uncorrected refractive error (39.5%) (Shrestha et al., 2021). In a hospital-based study in Pokhara, myopia was the most common type of refractive error followed by hypermetropia (Tuladhar and Dhakal, 2013).

There are different types of methods available for correction of refractive error that are either appropriate or appealing to all patients (Riley and Chalmers, 2005). Although spectacles appear to be the most common method of refractive correction, there is no single method preferred for correction that is accepted by all patients (Harris Williams & Co., 2015). Previous studies have investigated for the prevalence and factors related to prevalence but no study has investigated knowledge and attitude on different refractive error correction methods among patient populations in Nepal.

This study was aimed to assess the knowledge and attitude of patients towards various refractive error correction methods. The finding of the study might offer useful details and information that can be used for conduction of campaign to create public awareness, formation of proper health policies, and better eye services in different sectors.

METHODOLOGY

This was an analytical cross-sectional study conducted among patients who visited Refraction Clinic of Himalaya Eye Hospital, Pokhara, Kaski, Nepal. The duration of the study was eight months (2021 March to 2021 October). Interested patients with age 18 years and above were included in the study, Uncooperative patients and patients with the history of refractive surgery were excluded. A total of 150 patients were enrolled via systematic sampling; every fifth patient entering the refraction clinic of Himalaya Eye Hospital. Written informed consent was obtained from all participants. Ethical approval was taken from the Ethical Review Board, Nepal Health Research Council (Reference number: 1779) prior to data collection and followed the standards of the Helsinki Declaration (2013 version).

Pre-validated questionnaire were used to assess participants' knowledge and attitude of refractive error correction methods which consisted of the majority of the closed-ended questionnaires (Saber Moghaddam Ranjbar, Pourmazar and Gohary, 2013). The questionnaire consisted of five sections. In the first section, participants were interviewed for demographic information, the second section was used for the assessment of patient's knowledge and awareness about different eye care practitioners, the third section was used to know about patients' knowledge and attitude towards spectacles, a fourth section was used for patients' knowledge and attitude towards contact lens and the last section provided

information about refractive surgery knowledge and attitude. Participants were interviewed by a single interviewer and the collected information was stored in Epi-data Manager V4.6. Descriptive statistics and associations were analysed. IBM SPSS Statistics version 23 (IBM Corp., Armonk, N.Y., USA) was used for statistical analysis.

Quantitative data have been presented in frequency and also presented in mean and standard deviation. A Chi-square test was performed to analyse association. The p-value for a confidence interval of 95% was considered significant at the $p < 0.05$.

RESULT

Among 150 subjects were enrolled in the study, 70 (46.7%) were male and 80 (53.3%) were female. The mean age in years of the participants was 31.91 ± 11.398 years with the range of 18 years to 66 years. Altogether 100 (66.7%) of participants were from the age group of 20-40 years followed by participants from the age group 40-60 years (22%), and those from the age group <20 years (10%) and only two participants with age more than 60 years. A total of 39.3% of the respondents had under high school level education at the time of interview. Participants with high school graduates were 28%, graduates constituted 26%, whereas 6.7 % of the participants had completed postgraduate studies.

A total of 67 (44.7%) participants had a history of wearing spectacles and 83 (55.3%) of the participants did not have history of wearing spectacles whereas 20 (13.3%) participants believed wearing glasses limited the daily life activities and those who believed wearing glasses did not limit their daily life activities were 130 (86.7%). Those who thought spectacles had limiting their daily life told that they have problems like fogging of spectacles when used with a mask, limiting sports activities, feeling of dependency, sunken eyes, other people's perception, and difficulty wearing them on rainy days. The participants responded that the average estimated annual cost for contact lens and spectacles together was NRs. 2439.19 ± 1467.98, with the range of 500-10000.

A total of 33 (22%) participants who were aware of contact lenses as a method of refractive correction and the rest of the participants were not aware, 22 among 33 knew about coloured contact lens and six knew about the possible contact lens side effects. Only four participants knew that contact lens was prescribed by an optometrist. Two Participants expressed that they could buy contact lens from the market without a prescription.

Lack of information for 17 (56.7%), fear of side effects for six (20%), content of spectacles for four (13.3%), high cost for one (3.3%) and other causes for two (6.7%) (extra care required for contact lenses and contraindication) were the reasons for not wearing the contact lens.

A total of 21 (14%) participant knew about refractive surgery as a method of refractive correction and 129 (86%) did not have a knowledge about it. Only three of respondents knew about the potential side effect of refractive surgery.

Lack of information (66.7%), fear of side effects (3.7%), non-availability of reliable centres

(3.7%), content with spectacles (18.5%), and not eligible (7.4 %) was the reason for not undergoing refractive surgery.

Participant's view on the refractive correction method they are interested in, majority of the participants wants to continue the glasses followed by refractive surgery and contact lens have been shown in pie diagram (Figure 1).

Among all the participants, 114 (76%) had already got their eyes evaluated at least once and 36 (24%) of them had come for an ophthalmic examination for the first time, in the previous eye examination 41 of the participants responded they were examined by ophthalmologist, 10 participants responded they were examined by optometrist, and 63 of them responded they followed the hospital system of eye examination but do not know who had examined their eyes. Only seven (4.7%) knew the difference between an ophthalmologist and an optometrist.

The association between different variables have been tabulated (Table 1). Association of education of participants with knowledge of contact lens, refractive surgery was statistically significant.

Table 1: Association between education of participants and history of spectacles wear with knowledge towards refractive correction methods.

Independent variable	Dependent variable	Chi-square	p-value
Education status of participants	Knowledge of difference between Ophthalmologist and Optometrist	11.251	0.010
Education status	Knowledge of contact lens	31.501	<0.001
Education status	Knowledge of refractive surgery	23.286	<0.001
History of spectacles wear	Knowledge of contact lens	8.285	0.004
History of spectacles wear	Knowledge of refractive surgery	2.936	0.087

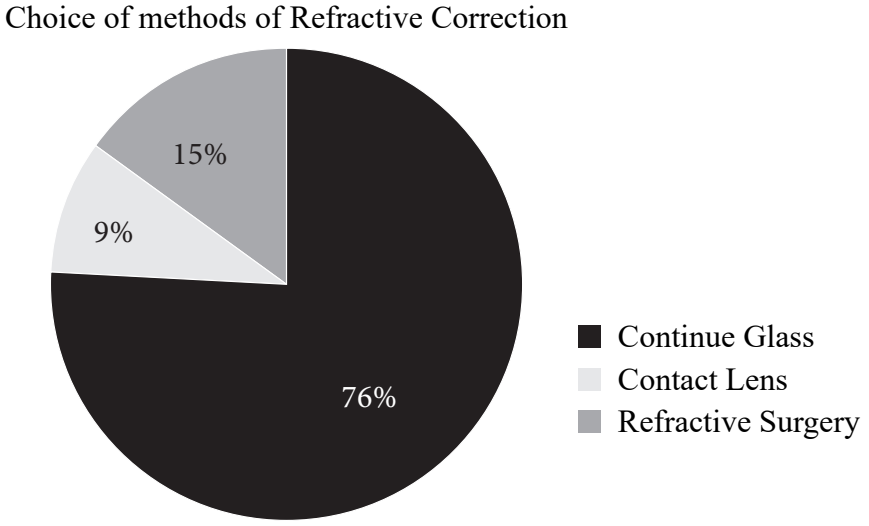

Figure 1: Participant's choice of methods of refractive correction they were interested in.

DISCUSSION

In the current study, 44.7% of participants had a history of spectacles wear which is higher than the previous study which showed only 8% of the participants had a history of spectacles wear. Easy availability and good access to spectacles in this geographic region may be a reason for the relatively higher use of this method of refractive correction and also showed that other people's perception and physical appearance were the main hindrance to spectacles use which is similar to this study (Aldebasi, 2011).

In a study from Saudi Arabia (Zeried, Alnehmi, and Osuagwu; 2019), knowledge of contact lenses was found in 81% of the participant whereas in current study only 33 (22%) of the participants knew about the contact lens and only six among them knew about the possible contact lens side effects. This disagreement might be due to the fact that the study from Saudi was done among university students and current study also found a positive association between education status and contact lens knowledge. The lack of information about contact lens and fear of contact lens use was found in current study and agrees with the previous study from Ghana (Abokyi et al., 2017) which concluded that there was low knowledge about the contact lens. Current study also showed that the reluctance of contact lenses may have various causes like, lack of information and fear of side effects were the most mentioned causes for reluctance the contact lens which is in agreement with the result found in the Iranian study (Saber Moghaddam Ranjbar, Pourmazar and Gohary, 2013).

The knowledge of refractive surgery was even lower in participants of current study. These findings correlate with the finding of the previous study carried out in Bharatpur, Nepal in which only 24% knew about refractive surgery (Giri, Bhandari, and Sah, 2020). Another study found that 82.5% of the participants were not aware of the possibility of refractive surgery for the correction and reduction of dependency on spectacles (Saber Moghaddam Ranjbar, Pourmazar and Gohary, 2013) which was similar to that of current study as 86% of the participants were not aware of the possible refractive surgery. Another study contradicts the findings of current study as 90% of participants in their study were aware of the refractive surgery as study was conducted among university students, it can be perceived that education plays a major role in the awareness of the methods of refractive error correction (Zeried, Alnehmi and Osuagwu, 2019). The unavailability of refractive surgery in the study hospital might have influenced the lack of information about this method. It can be emphasised that practitioners provide detailed information about the refractive error and its option of correction to the patients as well as the consequence of uncorrected refractive error. This can be accomplished through media, newsletters, and other methods of mass communication.

Majority of current study participants (114, 76%) had a history of ocular examination, and ophthalmologists were the first known clinicians for consultation among the participants but a predominant percentage of participants were not aware of the difference between ophthalmologist and optometrist.

In current study, 4.67% knew the difference between ophthalmologists and optometrists. This is significantly less than that reported by a previous study from Saudi Arabia, (Zeried, Alnehmi and Osuagwu, 2019) in which 28% of the participants correctly identify the difference between ophthalmologists and optometrists. This is even lesser than that found in Iran, (Saber Moghaddam Ranjbar, Pourmazar and Gohary, 2013) in which 39% of the participants knew the difference. This low knowledge about the difference between ophthalmologist and optometrist may be contributed to the tradition that existed in most of the eye hospitals in Nepal in which patients or people are not internally referred to a specific ophthalmologist or optometrist but are generally sent to a particular unit or room for required assessment. Another cause may be that most of the clinician chamber does not have a nameplate that indicates their professional identification. There are few limitations in current study, it consists of small sample size and subjects were taken from the patients who came for ophthalmic service so the findings may not be representative of general population, further studies with larger and multicentric cohorts may be helpful to validate and generalised these findings.

CONCLUSION

The knowledge and perception of the refractive error correction methods, especially for contact lenses and refractive surgery, is low among the Nepali patients. Lack of information and fear of side effects is the major reason for not using contact lenses as well as refractive surgery. Information about appropriate vision care providers and methods of correction of refractive error should be increased and emphasised to the general public.

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