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## Research Article

# A CROSS-SECTIONAL SURVEY EVALUATING THE AWARENESS ABOUT THE OPTOMETRY PROFESSION AMONG RESIDENTS IN AREAS OF SAIFAI, DISTRICT ETAWAH

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### ABSTRACT

Optometry is a healthcare profession that is autonomous, educated, and regulated (licensed/registered), and Optometrist are the primary healthcare practitioners of the eye and visual system who provide comprehensive eye and vision care, which includes refraction and dispensing, detection/diagnosis and management of diseases in the eye, and the rehabilitation of conditions of the visual system. It services vary from country to country. The scope and practice in India are still poorly defined. The public does not have a clear understanding of the role and responsibility of Optometrist in the healthcare system. There are multiple cadres of Optometrist providing eye care services with varying levels of skill and training. It is not cost effective for the eye health system to provide refractive and ocular disease detection only in tertiary eye health services. Regulated and standardized 4 year trained Optometrist can make a major contribution to eye care in a more convenient and cost-effective way at a community. The objective of this study is 1) To upgrade knowledge of student 2) To uplift the standards of Optometry profession and education in and around areas of Etawah 3) To encourage the layman about the importance of eye care system and its related complications. 4) To aware young generations to choose the Optometry profession as a career. **Material and methods** - The first step is to collect data from the students coming for the counseling through CPNET exam via first, second, third & through mop-up round counseling through Questionnaire. The second step is followed by data collection from the intermediate schools, coaching's centre, Private institutions with the help of volunteers taking help from government organization like the Public Awareness Campaign. **Result and Discussion** - The survey analysis shows that the demographic distribution out of 250 survey respondents showed an average mean of 26.70. The survey analysis shows that 61.2% responders were unaware about optometry and 38.8% were aware of the study. 39.6% responders think that optometrist is trained in detection and recognition of eye diseases while 60.4% thinks they are not trained. 39.6% responders think that optometrist is trained in detection and recognition of eye diseases while 60.4% thinks they are not trained. The responders when asked about the difference between ophthalmologist and optometrist so 59.6% do not know the difference. 60% of these subjects think that ophthalmologists can prescribe the contact lenses. **Conclusion** - These findings seem to indicate major deficiencies in public awareness about the role of Optometrist in around areas of Etawah. There is a need to increase campaign in these areas via educational programs, a poster explaining the eye care and diseases, exhibitions for the public concerning the profession of Optometry. There should also a provision of comprehensive vision care program for a patient's health care needs.

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### INTRODUCTION

The world Optometry council in response to the (WHO) Global Action Plan aims at Prevention of avoidable blindness and Visual Impairment in 2014-2019 and represents over 250,000 Optometrist worldwide. Optometry is a profession which is autonomous, licensed and registered while Optometrist are the

primary eye practitioners who provide comprehensive eye care including refraction, dispensing, detection, diagnosis and management of eye diseases along with rehabilitation of visual system [1].

With the increasing population and average life expectancy .the prevalence of visual impairment (defined as best-corrected Snellen visual acuity equivalent between 20/40 to better than

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20/400 in the better-seeing eye) and blindness (defined as 20/400 or worse in the better-seeing eye) has also increased and blindness [2] [3].

The World Health Organization (2010) estimated that 39 million individuals were blind and 246 million experienced visual impairment [4], the uncorrected refractive error is the leading cause of visual impairment globally which places a financial burden on the economy, is a significant contributing factor to poverty and is avoidable [1].

The provision of preventive, curative and rehabilitative orthodox eye care services is shared by an array of dedicated and integrated eye care workers and clinical ophthalmic care is provided by ophthalmologists and Optometrist [5].

There are many challenges for eye health with the increasing avoidable blindness and visual impairment due to insufficient competent healthcare professional's uneven distribution of resources and the inability to afford treatment. In order to meet the aims of the global action Plan, there must be the development of proper human resources which includes Optometrist and models of sustainable service delivery. An optometrist provides answers to these challenges by diagnostic, technical and direct patient care and support services. In many developed countries and in developing ones Optometry functions as primary care as part of a multidisciplinary team including ophthalmologists. [1]

The awareness and knowledge of eye care services, training hierarchy, professional roles, capabilities and responsibilities have been identified as important parameters influencing their utilization of available eye care services [6]. Boniface Ikenna Eze *et al* (2016) conducted a population-based random survey on adults in Nigeria to assess the public's knowledge of the training requirements, professional roles and responsibilities of ophthalmologists and Optometrist and identify the factors associated with this knowledge and found that Participants' socio-demographic and clinical characteristics are important predictors of good knowledge and there is a need for knowledge enhancement by the government and eye care providers through population-based eye health literacy campaigns [7].

According to the ministry of health and family welfare Optometrist with a minimum of four years of training are qualified to prescribe the latest advances in spectacle lenses including progressive, aspheric, and safety/protective spectacles based on the visual needs of the patient. Prescribe rigid and soft contact lenses, prescribe vision therapy, vision training for children, provide low vision and rehabilitative services-vision aids, detect and diagnose ocular conditions and associated systemic health conditions and offer counseling services on preventive vision care.

Optometry services vary from country to country. The scope and practice of Optometry in India are still poorly defined. The public does not have a clear understanding of the role and responsibility of Optometrist in the healthcare system. There are multiple cadres of Optometrist providing eye care services with varying levels of skill and training.

The ongoing communication between Optometrist, Ophthalmologist, and other medical and rehabilitation professionals provide more advanced patient management and

benefits for public well-being. Four-year trained Optometrist are able to take an active role in the co-management of vision and eye care problems of their patients along with general practitioners and other health professionals. The higher education among optometrist will provide a wide platform for interprofessional communications like 2 years Master in Optometry and PhD in Optometry.

The two-year diploma in Optometry courses running in India provides an upgraded training for these professionals not only in refraction but also in contact lenses, ocular disease detection, diagnosis as well as binocular vision and low vision. The eye care personnel with fewer than four years training are less expensive to train but lacking theoretical underpinning, critical thinking skills and ability to contribute to clinical decision-making and vision research. Ophthalmologist require much more expensive training to be able to provide these services.

Four-year trained Optometrist provide comprehensive vision care through sufficient basic training and experience. This trained optometrist is able to perform a comprehensive examination of both the internal and external structures of the eye, carry out subjective and objective tests to evaluate patients' vision, analyze the test findings and establish a diagnosis and initiate appropriate management. It is thus more efficient to use four-year and above (Mopto+PhD) trained Optometrist, freeing up ophthalmologists for surgery and for treatment of complex cases.

It is not cost effective for the eye health system to provide refractive and ocular disease detection only in tertiary eye health services. Regulated and standardized 4 year trained Optometrist can make a major contribution to eye care in a more convenient and cost-effective way at a community level [8]. The objective of the study is to 1) To upgrade knowledge of student 2) To uplift the standards of Optometry education in and around areas of Etawah. 3) To encourage the layman about the importance of eye care system and its related complications. 4) To aware young generations to choose Optometry as a career.

## MATERIAL AND METHODS

The survey was conducted within 1 month in and around the areas of Etawah. Informed verbal consent was also obtained from higher authorities.

A structured questionnaire was designed based on similar work in literature in order to gather information related to the awareness about Optometry and through campaigns using Brochures and pamphlets. Banners, balloons, hanging pamphlets which included the messages highlighting the significance of Optometry were used for World Optometry Day and world sight day celebrations. The study is done in 2 phases.

The In phase-I mainly focus on the data collection with the help of questionnaire on a large scale from the student who came after entrance examination in our college for counseling purpose and from the coaching centres to hypothesize how many among the students are aware of Optometry Stream.

The public awareness is assessed and evaluated through a structured questionnaire. The First step is to collect data from the students coming for the counseling through CPNET exam (Combined paramedical nursing entrance test) via first, second,

third counseling & through the mop-up round. The second step was followed by data collection from the intermediate schools, coaching's centers, Private institutions in an around the areas of Etawah with optometry students volunteers and from government organizations.

The structured questionnaire was taken to evaluate the level of awareness and knowledge about Optometry among the responders. The questionnaire was designed bilingually (Hindi and English) for better understanding and quick responses to questions asked.

The phase –II was totally based on awareness to a layman in nearby areas of Etawah. It was done through World Optometry day celebrations, rural eye awareness camps in Intermediate schools, awaring school teachers & their students.

The pamphlets were distributed to all. Optometry week from 20/03/2017 to 23/03/2017 was also a part of awareness about Optometry education and vision care on the occasion of world Optometry day in Uttar Pradesh University of Medical Sciences on a large scale.

The day-1 of WOD started with a healthy walk followed by rally “Walkathon” which was blindfolded followed by a flash mob & mime in the presence of political leaders and visually challenged people & eminent personalities from the field of Optometry aiming to accomplish the theme “feel and treat me” encompassing on how the patient of low vision feels post affected by visual acuity, contrast and visual filed defects etc.

During walkathon we aware the public regarding our profession by distributing them brochures and our inspiring speeches. Day 2, 3, and 4 was followed by model/poster presentation, PowerPoint presentation, speeches, essays, quiz competitions followed by various extracurricular activities. This walk was successfully completed under the guidance of VC, HODs, and faculties along with Optometry students.

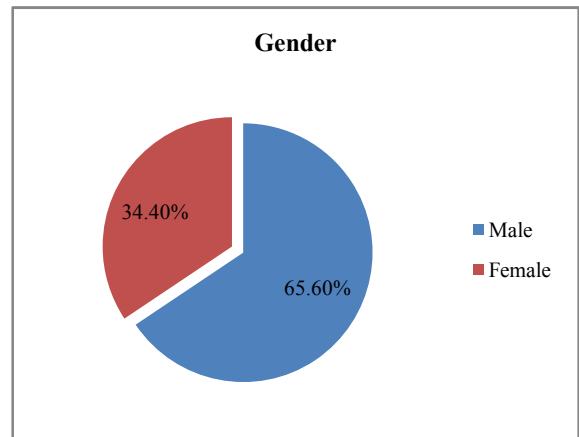
**RESULT AND DISCUSSION**

The demographic distribution out of 250 survey respondents showed an average mean of 26.70. Graph-1.1 and Table 1.1 shows 65.6% of male and 34.4% of females and their average rate is almost equal i.e. 26.76±26.58 which is similar to the study by Boniface Ikenna Eze 2016 [7].

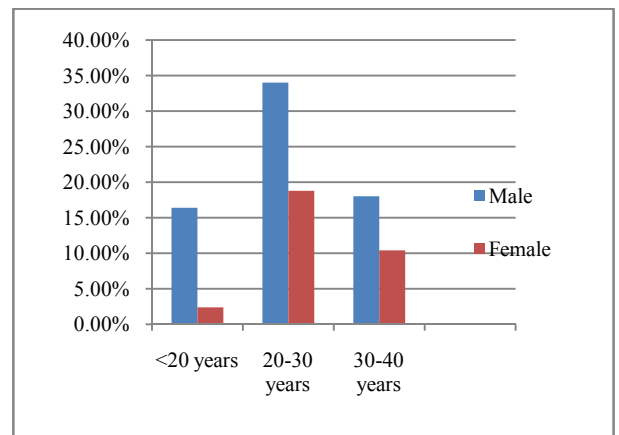
Table 1.2 and Graph 2.2 shows that 18.8% responders belong to age group under 20, 52.8% to 20-30 years and 28.4% belong to the category of 30-40 years. The data in our present study illustrate that 24% participant was employed (M>F); 30.8% (M>F) are listed under unemployed category and the maximum responder rates are students 45.2% (M>F) (see table 1.2, 1.3 and Graph 2.3).

**Table 1.1** shows Age-Group and Gender distribution Among 250 responders.

Age Group	GENDER		Total (250)
	N=250 Responders		
	Male	Female	
<20 years	41(16.4%)	6(2.4%)	47 (18.8%)
20 -30 years	85(34%)	47(18.8%)	132(52.8%)
30-40 years	45(18%)	26(10.4%)	71(28.4%)
Total	171 (68.4%)	79(31.6%)	250(100.0)



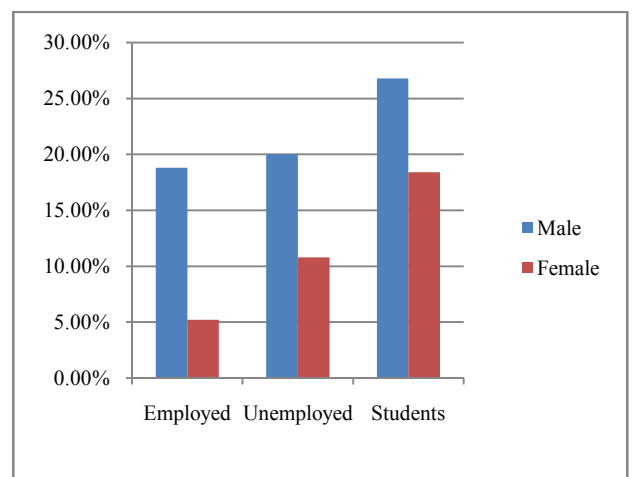
**Graph 2.1** Graph showing Genderwise distribution of total no of cases among studied population.



**Graph 2.2** Graph indicating total no. of cases among varying Age groups Gender wise

**Table 1.2** Table showing Respondents status Gender wise

Gender	Status		
	Employed	Unemployed	Students
Male	47(18.8%)	50(20%)	67(26.8%)
Female	13(5.2%)	27(10.8%)	46(18.4%)
Total (250)	60(24%)	77(30.8%)	113(45.2%)



**Graph 2.3** Graph showing respondents status in both genders

The survey analysis shows that 61.2% responders were unaware about Optometry and 38.8% were aware of the study which is very less as compared to the study done by Mohammad Hamd Aldebas *et al* 68% of awareness about

optometry [10]. Our study sample shows that 39.6% responders think that Optometrist is trained in detection and recognition of eye diseases while 60.4% think they are not trained. The public knowledge in our study is less as compared to Eze *et al* (2016) report which shows 55.6% of the participants were knowledgeable regarding the difference in training requirements [7].

The present study shows evidence that 41.2% respondents think Ophthalmologist conduct eye examination, 25.6% think Optometrist and 33.2% think both can conduct eye examination while Okoye *et al* study reveals that 18.5% of the participants were knowledgeable about the specific tasks for both Ophthalmologist and Optometrist [11]. Due to this 58.4% visited an Ophthalmologist for eye examination and the remaining 41.6% visited an Optometrist. The responders, when asked about the difference between Ophthalmologist and Optometrist so 59.6% do not know the difference and the remaining 40.4% can explain the difference between the two. The 59.6% in the present study is near to study done by Guffy *et al* in 2009 (56%) [9] and Boniface Ikenna Eze in 2016 (55.6%) [7].

44.4% of the subjects had a history of wearing glasses while 55.6% did not wear it which is very less as compared to the study done by Alemayehu Desalegn *et al* 2016 [12] and [13]. This might be unawareness of the possible complications without using glasses and also cultural difference (a perspective that spectacles are not useful cosmetically). 37.2% participants think that Optometrist cannot prescribe glasses independently 61.6% of the responders were unaware of the contact lenses usage instead of glasses and 71.2% were unaware of the properties of contact lenses which can be used not only for corrections but also to enhance the cosmetic appearance and 60% of these subjects thinks that Ophthalmologist can prescribe the contact lenses, 28.8% thinks Optometrist and 10.8% think both can prescribe contact lenses.

**Table 1.3** Socio-economic profiles of the respondents

Age Group (a)	GENDER		Chi square	Df	p
	Male	Female			
<20 years	41(16.4)	6(2.4)	9.52112	2	0.008561
20-30 years	85(34)	47(18.8)			
30-40 years	45(18)	26(10.4)			
Status (b)	M	F	6.31852	2	0.04246
Employed	47(18.8)	13(5.2)			
Unemployed	50(20)	27(10.8)			
Students	67(26.8)	46(18.4)			

The data were statistically analyzed using Microsoft Excel - 2010 version using the chi square test. Table 1.3 Section (a) shows that the two-tailed P value of age group gender-wise is equal to 0.0086 (P=0.0086) and by conventional criteria, the differences are considered to be very statistically significant. Section (b) confirm that the two-tailed p-value shows the status of respondents gender wise which equals to 0.0426 (p=0.0426). Table 1.4 shows the participants responds to the set of question through a questionnaire (n=250). Set (a) results reveal that the two-tailed P value is less than 0.0001 (P<0.0001). By conventional criteria, this difference is considered to be extremely statistically significant and in Set (b) illustrate that the two-tailed P value is less than 0.0001 (P<0.0001) and the difference are considered to be extremely statistically significant.

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**Conflict of Interest**

Authors agree that there was no source of conflict of interest.

**Table 1.4** Table showing respondents answers to sets of questions (a) and (b).

S.No	Questions Set (a)	Response rate (n =250)			Df	P				
		Yes	No	Chi square						
1	Have you ever heard about Optometry?	97(38.8%)	153(61.2%)	97.6312	8	<0.0001				
2	Do you think Optometrist is assistant to the doctors?	171(68.4%)	79(31.6%)							
3	Do you know the difference between Ophthalmologist & Optometrist?	149(59.6%)	167(66.8%)							
4	Do you think that Optometrist is trained in detection & recognition of disease of eyes?	99(39.6%)	151(60.4%)							
5	Have you ever worn glasses?	111(44.4%)	139(55.6%)							
6	Do you believe that Optometrist can independently prescribe glasses?	93(37.2%)	157(62.8%)							
7	Have you ever visited an Optometrist for eye examination?	104(41.6%)	146(58.4%)							
8	Do you aware of contact lens usage instead of glasses?	96(38.4%)	154(61.6%)							
9	Are you aware of presence of contact lenses which have both refractive correction and cosmetic properties?	72((28.8%)	178(71.2%)							
	Question Set (b)	Ophthalmologist	Optometrist				Both	Chi square	Df	P
10	Who conduct an eye examination?	103(41.2%)	64(25.6%)				83(33.2%)	68.1835	2	<0.0001
11	Who prepares contact lens prescription?	73(29.2%)	150(60%)	27(10.8%)						

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