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## Assess the Awareness and Attitude about Amblyopia in North-Western Universities and Colleges academicians of India

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### ABSTRACT

Assess the awareness about Amblyopia in North-Western Universities and Colleges academicians of India. This study is conducted to assess the awareness, attitude, and perception of academicians about amblyopia. It is a questionnaire-based qualitative and observational study that was conducted among the academicians' in the North-western universities and colleges. A structured questionnaire was designed focusing on the academicians' demographic data, including general and visual histories and their awareness toward amblyopia, the study was conducted from October 2020 to May 2021. Eye health academicians are excluded from this survey. As most the academicians' didn't know about amblyopia i.e. 52% of participants. Only 48% i.e. 48 out of 100 academicians knows about amblyopia. Only 53% of participants were aware of the responsible person for the diagnosis of amblyopia. Only 30% of participants about age to get exposed to Amblyopia. And only 9% of academicians along with their children visited Eye care professionals. Amblyopia diagnosed by Optometrist 53%, by Eye Doctor 36%, by family member 2%, by Teacher 0% and no one can 9%. Amblyopia is one of the most common causes of visual impairment around the world which is treatable if detect as early as possible, so awareness is very necessary. Above the age of 16 years, it is very difficult to treat or not treatable. So need of spread the information to make the community more aware about Amblyopia is very important and the school screening and detection of curable and preventable eye problems by Optometrists is also very important.

**Keywords:** Amblyopia, Anisometropia, Strabismus, Defective Vision, Visual deprivation, Suppression.

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## INTRODUCTION

As there are lots of reasons for defective vision, some children who are born blind or defective vision or who remain with defective vision so, they survive the lifetime of defective vision with all the associated emotional, social, and economic costs of the child. Many of the causes of visual impairments in children are preventable, curable, and treatable. The awareness of parents is necessary for early prevention and treatments because parents are primary recognizers of the children's problems.

All children are born with an undeveloped visual system and, for normal visual development to occur, they need the clear, focused image to be transmitted to the higher visual centres failure of normal visual maturation (amblyopia) cannot be corrected in adult life so there is a level of urgency about treating childhood eye disease which does not necessarily apply to an adult.

Inadequate parental awareness of these eye conditions may result in visual impairment<sup>1</sup>.

According to eye health practitioners, the awareness of amblyopia among the parents is very less, even the well-educated parents didn't know about it. Came to know when someone in the family is diagnosed with amblyopia. The practitioner also informed us that parents didn't have that much acceptance and compliance for amblyopia treatment<sup>2</sup>.

Parents are primarily responsible for the health of their children. It is very important to understand parents' perception and awareness of eye problems as some parents take care of their children whereas others do not. This understanding becomes necessary as early diagnosis and prevention should be provided. It gives best results at an early age of children, especially for eye conditions such as amblyopia, strabismus, and anisometropia<sup>3</sup>.

Amblyopia is a developmental disorder that refers to unilateral as well as the bilateral reduction in best-corrected visual acuity without any structural or pathological abnormality of the eye or posterior visual pathways. Its primary causes are squint, anisometropia, and stimulus deprivation<sup>4</sup>. Term amblyopia according to clinical and vision science communities, depicts a condition where a reduced visual function in one or in both eyes, in spite of best optical correction and the absence of any pathology of the visual system.

Constant esotropia is commonly associated with the presence of amblyopia. Amblyopia is commonly associated with hyperopic anisometropia but rarely found in myopic anisometropia<sup>4</sup>. Form Deprivation- rejection of all visual information other than light. This deprivation can result from lid sutures, corneal opacification, and congenital cataract<sup>4</sup>.

Global Prevalence of amblyopia--Asia 1.09%, Europe 2.90%, North America 2.41%, Africa 0.72%, Latin America and The Caribbean 1.26%, Oceania 2.39%, Overall 1.44%. Amblyopia

is the most common cause of visual impairment during childhood with an estimated prevalence of 1% - 3%<sup>7</sup>.

Early diagnosis and treatment of visual impairment in children are important. School screening plays an important role in the early detection of amblyopia as well as proper therapy in order to prevent lifelong visual morbidity. Amblyopia occurs mainly at 5 to 15 years of age<sup>2</sup>. School progress, sports activity, and later job opportunities of children may affect negatively amblyopia. In amblyopia patients there are some psychological difficulties were seen such as personal self-image, depression, and anxiety<sup>7</sup>.

Early intervention, as well as early detection, is most essential for the effective treatment of amblyopia. The best way of prevention and early diagnosis of amblyopia is the adoption of some screening program the goal of Amblyopia treatment is to maximize and potentially normalize visual acuity.

Planning for the treat amblyopia include

- Remove the cause of visual deprivation and provide a clear retinal image in the amblyopic eye.
- Correction of ocular dominance. Even before the development of amblyopia, the corrective refractive errors may be very helpful or crucial for the prevention of amblyopia.

Amblyopia is the diminution of vision at an early age without any structural abnormality caused by strabismus and anisometropia. This understanding becomes necessary as early detection and intervention serve best when given at the early age of children. Diminution of vision at an early age can be easily tested but if left untreated it can lead to amblyopia and other eye problems.

Amblyopia is one of the most common public health problems, affecting up to 5% of the population. Mono-ocular visual impairment is usually caused by amblyopia in both children and adults. Amblyopia can occur from four months to eight-year of age. If not treated before the critical period of development, the effectiveness of treatment is poor. The awareness is necessary because it gives a negative impact on school-going children's progress, sports activities and after that job opportunity. Some psychological difficulties were reported in amblyopic patients including self-confidence, depression, and anxiety.

As we know that parents are primary take-care and they make decisions on the behalf of their children's health services. So awareness or knowledge about amblyopia is quite necessary for parents or teachers which will help to reduce the cause of visual impairment in childhood.

The study is needed to investigate the level of academicians' awareness, attitude, and perception and how to increase their awareness in the future.

## MATERIALS AND METHOD

### Materials

It is a totally questionnaire-based qualitative and observational study was conducted among the academicians' in the North-western universities and colleges. A structured questionnaire was designed focusing on the academicians' demographic data, including general and visual histories and their awareness toward amblyopia the study was conducted from October 2020 to May 2021. The pre-validated questionnaire used in this study was unique and completely self-generated with the help of a guide which was later approved and validated by Paramedical research committee member Teerthanker Mahaveer University, Moradabad.

### Method

The pre-validated questionnaire was divided into three main sections involving the academicians' demographic data, their general health, and their awareness of amblyopia. In demographic data included information about academicians' gender, marital status, education, age, occupation, qualification. In the second section, the questions about general health are like if they have any family history of systemic disease or eye disease along with any kind of medication on which they are. In the third section, the questionnaire asked about the knowledge of Amblyopia like whether it is treatable or not, at what age it can be detected, who is primarily responsible for the detection, and knowledge of Amblyopia is necessary for parents or teachers.

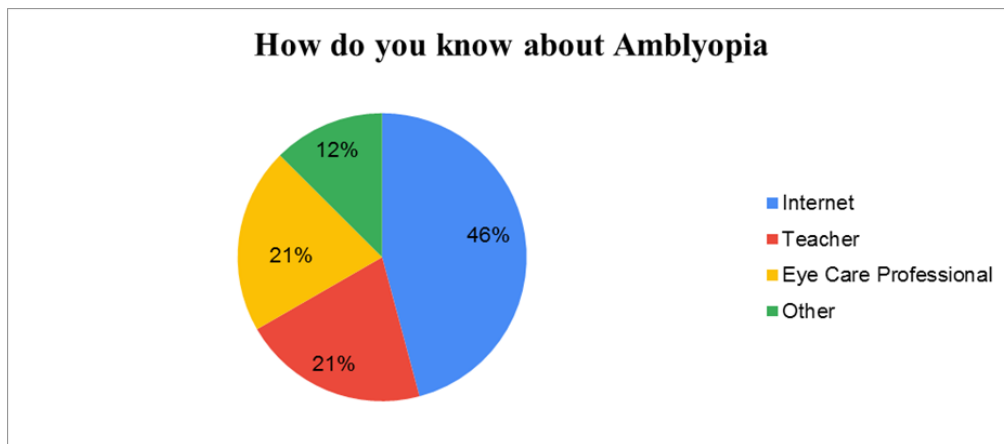
### Data collection tool

The approved questionnaire was personally given to the participants to collect the data also few of the questionnaires were shared electronically such as. All the participants were asked to fill the questionnaire on the basis of their knowledge and experience.

Most of the colleges and universities that participated in this survey belong to North India; only three colleges participated outside of Uttar Pradesh. 89 % of participants are 20 to 40 yrs. of age. Qualification Participants are the Diploma (1%) 1, Graduate ((16%) 16, Post Graduate- (69%) 69 and PhD- (14%) 14. On the basis of gender the total participants are 100 in which 66% (66) were male and 34 % (34) were female.

The knowledge of amblyopia among academicians is less by 4%. As most of academicians' didn't know about amblyopia i.e. 52% of participants. Only 48% i.e.48 out of 100 academicians knows about amblyopia.

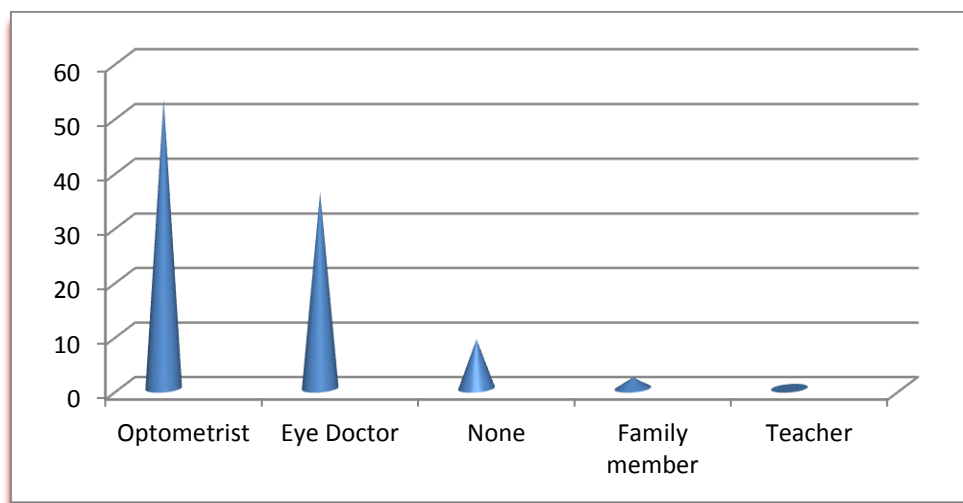
## RESULTS



internet has spread the most knowledge or awareness about amblyopia i.e. approx.50%, half of the total academicians whereas teacher and eye care professionals share equal part in spreading the knowledge about amblyopia which is 21% each among the academicians and rest 13% (6) having the knowledge from other sources.

As we all know that amblyopia can never be detected by naked eyes so according to the above data only 66 academicians have the correct knowledge about it. Rests 34% of the participants have wrong perceptions about it as they think amblyopia can be detected by naked eyes which is not possible.

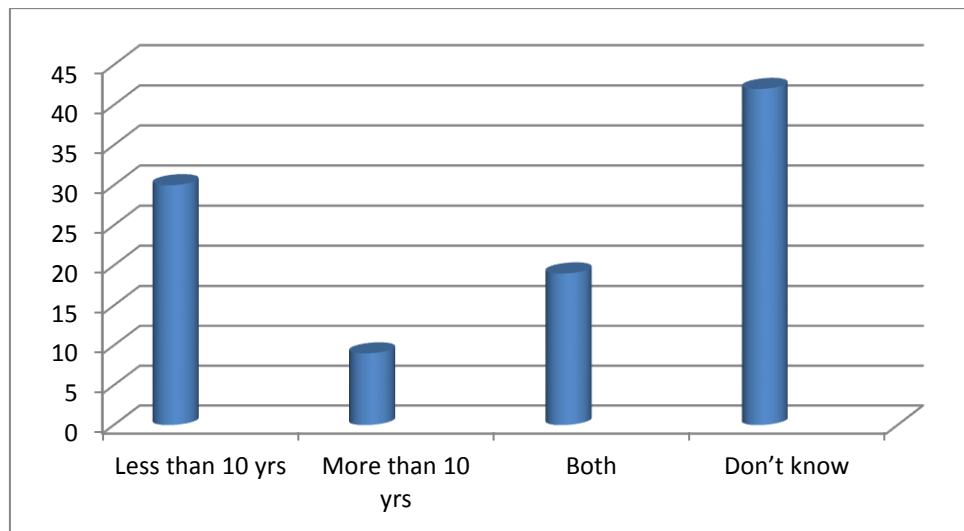
Amblyopia can be diagnosed by



**Graph 1: Shows the profession for diagnosis the amblyopia**

The 53% i.e. 53 academicians think that the amblyopia can be diagnosed by optometrist and 36% think it can be diagnosed by doctor and both of them right which is around 90% of academicians have the right knowledge whereas 9% think that no one can diagnosed this visual impairment and according to the rest 2% academicians, family members can diagnosed the amblyopia.

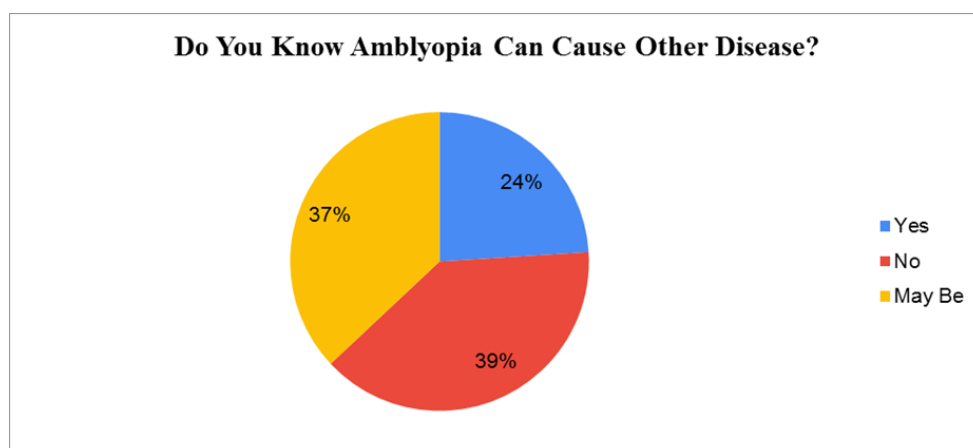
Which age group is exposed to Amblyopia



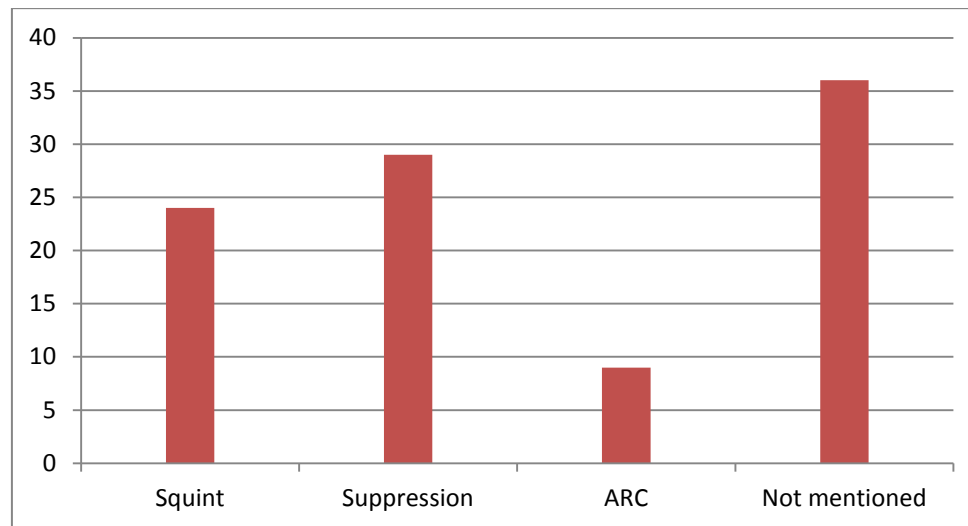
**Graph 2: Shows the awareness about age group of amblyopia**

According to 30% of academicians, kids less than 16 years are more prone to amblyopia and approx. one third of this i.e. 9% think that the children above 16 years are exposed to amblyopia whereas 19% thought that age doesn't matter as according to them children below or above 16, both exposed to amblyopia. Out of total 100, 42 academicians don't have any idea about which age group child are exposed to amblyopia. The 90% of the academicians' children does not have amblyopia whereas 9% are quite confused as their children are suffering from amblyopia or not. According to the data rest 1% is confirmed that their kids have amblyopia. Only 9% academicians take their children to eye care practitioner and rest 91% academicians have the perception that their kid don't have eye related problem or they don't need to visit an eye care practitioner.

Around 34% of academicians take the child to the eye care practitioner once in a year. 22% of academicians visit twice in a year to eye care practitioner whereas rest shares equal % of visits i.e. 11% as 4 visits, every six month, one visit respectively.



If Yes, then which one?



**Graph 3: Shows the awareness of associated ocular problem with amblyopia**

According to the survey data, approx. 30% of participants agree with that the amblyopia cause only Suppression after that academicians supported the Squint i.e. 24% and at last only 9% think that amblyopia cause ARC. According to the majority of academicians i.e. 38% the disease caused by amblyopia is not mentioned here.

The 91% of academicians are agreed with the idea of having the knowledge about amblyopia in the parents whereas 9% of participants think that there is not necessary to have the awareness about amblyopia among parents.

## DISCUSSION

Amblyopia is the leading cause of permanent visual impairment, if not treated on time review of literature on oldest study shows that the prevalence of amblyopia ranges from 0.8% to 3% world-wide, depending upon the definition and number of population used in study.

According to the previous study the level of awareness about Amblyopia is poor in rural and urban population; parental awareness and early management play an important role for patient health and quality of life. In this study eye care practitioner are the leading sources of information for parents about Amblyopia.

According to this study the level of awareness in academicians was 48%, which is higher than the values reported in Nigeria 2.9 %<sup>14</sup> and Saudi Arabia 10%<sup>12</sup> but less than the values reported in the study of Jeddah 50%<sup>15</sup>. The population in this study shown the level of awareness may not be sufficient because 52% of the population of the academicians who were highly educated but never heard the term amblyopia.

According to Divya SentiKumar<sup>13</sup> et al. reported on the parental awareness and perception of children eye disease in Chennai India, the knowledge of amblyopia was very poor or limited they recommended the programs to educate parents about Amblyopia because it



was treatable and preventable condition, if diagnosed below the age of 8 years if amblyopia is not treated it gives poor prognosis of normal visual development.

According to this study awareness programme incorporated into the school, college and universities. This study was conducted in universities and colleges of 13 north-western cities of Uttar Pradesh out of which the contribution of male was 66% which is higher than female i.e. 34% and the people from age 20 to 30 years are highly responsive as compare to other age groups whereas we have also seen that the married academicians percentage is higher than the unmarried participants. Most of the academicians has incomplete or false knowledge about amblyopia. Notably around half of the academicians didn't have any idea about the age group exposed to amblyopia. Based on the academicians' responses 9% are confused whether their children's have amblyopia or not whereas in a Ali M. Alsaqur et al. study the percentage for same is 19%.

On the basis of this study out of 54% married academicians, only 83% having children in which 9 couple take their children to an eye care practitioners rest 80% academicians didn't prefer to visit eye care clinic.

When asked to academicians that "Does any of your child has Amblyopia?" the majority of academicians answer was no, whereas 9% are confused as their children suffering from amblyopia or not but 1% academicians told that their children suffer from Amblyopia, the prevalence of Amblyopia according to this study was 1%.

According to Damaris Magdalene et al. lack of awareness among the parents and school screening programs lead to delay detection of visual impairments which cause amblyopia and other ocular anomalies, majority of children had amblyopia due to uncorrected refractive error which could be simply avoided by parents after detecting and correcting the refractive error on time lack of awareness and knowledge about Amblyopia and its timely management leads to late presentation and significant visual impairment.

This study show the higher male population (66%) compare than female population (34%) among total population (100). According to this study higher population think that knowledge of amblyopia is required for parents but 9% population think that there is no need to awareness. Above the age of 16 years it is very difficult to treat or not treatable. The common modes of treatment of amblyopia are spectacles, atropine and patching. The prevalence of amblyopia in India is 1-4% still the awareness about amblyopia is less. The awareness of amblyopia among academicians is about 48% in this study but they have less or minimum knowledge or awareness about amblyopia some academicians having false knowledge about amblyopia.



## CONCLUSION

Amblyopia is one of the most common cause of visual impairment around the world which is treatable if detect as early as possible, so awareness is very necessary. The government should include a chapter on the basics of visual impairment in school books, also make all the maternity home to proper information to the parents about a disease which is occurring on critical period of development, mainly along with the schedule eye screening programed in the immunization chart also government should make a law that primary school should do the screening program once in a year.

## LIMITATION OF STUDY

Limitation of this study was that geographically is not that large as it involves academicians from only a few north-western universities and colleges, also sample size would be large.

## ACKNOWLEDGMENT

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