

Incidence of Myopia in Young Adults in Various Location of Durgapur, West Bengal - A Demographic Analysis

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Abstract: *The study was conducted with the objective to determine the Incidence of myopia and demographic profile analysis through cross tabulation between age and types of myopia. In this study we assessed 2500 young adults of between 18 to 21 years of age from different locations of Durgapur, West Bengal. This study was based on cross-sectional and indicated in randomly selected young adults. A designed Case Record Form was provided to collect the particulars of the related factors. Data were arranged and scrutinized using Statistical package (SPSS) and chi-square test, Cross tabulation and Reliability test to get the results. Finally, we found the incidence of myopia revealed a significant association in analysis with different types of myopia.*

Keywords: Myopia, Cross sectional, Refractive Error, Case Record Form.

1. Introduction

One of the utmost cause of refractive error is Myopia, which can be elucidated as when rays of light from a distant object after traversing through the refractive mediums won't focus on the retina causing the distant object blur. Young adults are the matter of concern for this type of refractive error in the world due lot of factors. In the year of 1999 a global initiative launched by WHO and IAPB, VISION 2020, the Right to Sight is to eradicate the main causes of avertable blindness by the year 2020 by giving the prime concern on cataract, refractive errors, trachoma, river blindness and certain engenders of childhood blindness. In 2004 on a periodical of World Health Organization (WHO), a guesstimate was made that it was more than 161 million people who were visually impaired worldwide, of whom 124 million people had low vision and 37 million were blind.

Near work pursuits by the eye leads to progression of myopia as shown by the few researchers in their article. Identifying the distribution of different degree of myopia in young adults in southern region of West Bengal particularly in Durgapur is the prerogative of this paper and to ascertain if there is any association between demographic profile analysis through cross tabulation between age and gender with types of myopia. For this sole objective a sample of 2500 young adults were selected by choosing simple random sampling procedure. A Structured Case Record Form was implemented to collect the details of the relevant factors. The respondents were scrutinized for refractive errors by applying the subjective refraction procedure method where to test the distant visual acuity the Snellen's chart was placed at 6-meter distance. Details of Near Work Activities were collected through a precise clinical history taking procedure. Data were tabulated and analyzed using Statistical package (SPSS). After scrutinizing, our observation was, 575 young adults were suffering from various degrees of myopia like Low Degree of Myopia, Moderate Degree of Myopia and High Degree of

Myopia. This research article is being carried out with the following objectives:

To notice the Incidence of myopia and analysis through cross tabulation between demographic profile analysis through cross tabulation between age and gender with types of myopia

2. Research Methodology

We employed observational, descriptive and cross-sectional studies which included simple and random sampling techniques. We selected the study population involving the young adults of different locations of Durgapur, West Bengal. Our examination comprises 2500 young adults where the screening procedure used are Snellen's distance and near visual acuity chart both, trial Box lens set, Block, adjustable trial frame, Objective Auto refractometer, Keratometer, Self-illuminated retinoscope. Our observation conducted in the study period between August, 2016 to July, 2018 revealed that 575 are suffering with Myopia among 2500 young adults. We excluded the young adults who are suffering with Corneal and lenticular opacities, existence of any ocular infection/inflammation, history of previous ocular surgery and ocular injuries from this study.

The Distance visual acuity was recorded with Snellen's distance visual acuity chart which was placed at a distance of 6 meter. Every participant has given their consent in Informed Consent Form. A detailed history was taken from those who responded as well as the demographic profile like age, gender, occupation, location and parental myopia. Near visual acuity was tested using reduced near Snellen's chart held at 40cm from the patient and asked to read dry retinoscopy was done to all the respondents to observe the refractive status. In this study, respondents were considered to be myopic when the spherical equivalent was more than or equal to - 0.25D in one or both eyes. The refractive Error was measured by Auto Refractometer; Ophthalmometry was executed to record the radius of curvature of anterior

curvature of the cornea. The Ethical clearance was obtained prior to data collection from the Institutional ethical committee of National Institute of Medical Science & Research, Nims University Rajasthan, Jaipur, for the research work.

3. Results and Discussion

We have considered 2500 young adults where 575 respondents were myopic among of them 232 were male respondents and 343 were female. In this Research Work, we have collectively used quantitative as well as qualitative statistical tools.

Table 1: Overall Prevalence of Myopia among Gender

1=Male	2=Female	Total
232	343	575

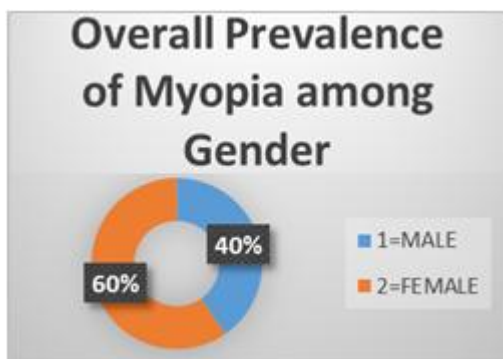


Figure 1: Overall Prevalence of Myopia among Gender

Table 2: Age and Types of Myopia cross tabulation

		Types Myopia			Total
		Low	Moderate	High	
Age upto 18	Count	118	80	34	232
	% within Age	50.9%	34.5%	14.7%	100.0%
	% within Types_Myopia	40.7%	41.7%	36.6%	40.3%
	% of Total	20.5%	13.9%	5.9%	40.3%
19-20	Count	129	68	30	227
	% within Age	56.8%	30.0%	13.2%	100.0%
	% within Types_Myopia	44.5%	35.4%	32.3%	39.5%
	% of Total	22.4%	11.8%	5.2%	39.5%
21 and above	Count	43	44	29	116
	% within Age	37.1%	37.9%	25.0%	100.0%
	% within Types_Myopia	14.8%	22.9%	31.2%	20.2%
	% of Total	7.5%	7.7%	5.0%	20.2%
Total	Count	290	192	93	575
	% within Age	50.4%	33.4%	16.2%	100.0%
	% within Types_Myopia	100.0%	100.0%	100.0%	100.0%
	% of Total	50.4%	33.4%	16.2%	100.0%

3.1 Age (Up to 18 years) &Types of Myopia

After the cross tabulation among Age and types of Myopia it is observed that out of 232 young adults with the age group of up to 18 years 118 are having low degree of Myopia, 80 are having moderate degree of Myopia and 34 are having high degree of Myopia. This is also shown in percentile form. If we observe in the % age within Age, then we are observing that 50.9% young adults are low degree of myopic, 34.5% young adults are moderate degree of myopic and 14.7% young adults are high degree of myopic. If we observe the % age within Types of Myopia, then we are observing that out

of 290 young adults, 40.7% people are low degree of myopic, 41.7% are moderate degree of myopic and 36.6% young adults are high degree of myopic. Again If we observe the % age of Total, then we are observing that, 20.5 % young adults are low degree of myopic, 13.9 % young adults are moderate degree of myopic and 5.9 % young adults are high degree of myopic.

3.2 Age (19-20 years) &Types of Myopia

After cross tabulation among Age and Types of Myopia it is clearly observed that out of 227 young adults with the age group of 19-20 years 129 young adults are having low degree of myopia, 68 young adults are having moderate degree of myopia and 30 young adults are having high degree of myopia. This is also shown in percentage form. If we observe the % age within Age, then we are observing that 56.8% young adults are having low degree of myopia, 30% young adults are having moderate degree of myopia and 13.2% young adults are having high degree of myopia. If we observe the % age within Types of myopia, then we are observing that out of 192 young adults, 44.5% young adults are having low degree of myopia, 35.4% young adults are having moderate degree of myopia and 32.3% young adults are having high degree of myopia. Again If we observe the % age of Total, then we are observing that, 22.4 % young adults are having low degree of myopia, 11.8 % young adults are having moderate degree of myopia and 5.2 % young adults are having high degree of myopia.

3.3 Age (above 21 Years) &Types of Myopia

After cross tabulation among Age and Types of Myopia it is clearly observed that out of 116 young adults with the age group above 21 years 43 are having low degree of myopic, 44 young adults are having moderate degree of myopic and 29 young adults are having high degree of myopic. This is also shown in percentage form. If we observe the % age within Age, then we are observing that 37.1% young adults are having low degree of myopic, 37.9% young adults are having moderate degree of myopic and 25% young adults are having high degree of myopic. If we observe the % age within Types of Myopia, then we are observing that out of 93 young adults, 14.8 % young adults are having low degree of myopic, 22.9% young adults are having moderate degree of myopic and 31.2% young adults are having high degree of myopic. Again If we observe the % age of Total, then we are observing that, 7.5% young adults are having low degree of myopia, 7.7% young adults are having moderate degree of myopia and 5.0 % young adults are having high degree of myopia.

4. Conclusion

With the base of this study we can conclude that there is major relationship in between the socio demographic status and types of myopia in young adults. This research therefore shows the incidence of types of myopia in the young adults according to their socio demographic status is so important, early diagnosis and management with the optical aids will help for prevention for further development of myopia.

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