



Prevalence of Visual Acuity Among Adults (25 years) and Above in a Rural Community Area of Punjab

Palvi Bhunal and Raman Kalia*

Phd Principal, Saraswati Nursing Institute, India

***Corresponding Author:** Raman Kalia, Phd Principal, Saraswati Nursing Institute, India.

DOI: 10.31080/ASWH.2023.05.0479

Received: January 03, 2023

Published: February 13, 2023

© All rights are reserved by **Palvi Bhunal and Raman Kalia**.

Abstract

Background: Vision is the main way of incorporation among the human being and the exterior surroundings. It consults to the means to recognize the shape and particulars of the things a person sees.

Objectives: 1. To assess the prevalence of visual acuity among adults of selected community areas. 2. To determine the factors associated with low vision among study subjects. 3. To assess the visual function among adults of selected community areas. 4. To provide health education related to care of eyes using a pamphlet.

Material and Methods: A 'non-experimental' (Quantitative) descriptive design was used "to assess the prevalence of visual acuity among adults (25 years and above)".The sample size was 200 adults from selected community areas. Samples were selected by convenience sampling technique. Snellen's and E-chart was used for the evaluation of the 'distance visual acuity' and near vision chart (Snellen's and E-chart) for testing 'near visual acuity'. Assessment of factors associated with low vision, by interview method. Development of self-structured visual function questions for testing of visual function by interview method.

Results: Analysis revealed that out of 200 subjects 57 subjects had distance visual impairment and 44 subjects had near visual impairment. From distance visual impairment of right eye of subjects there was only one significance associated with low vision and factors associated with it that is based on present eye disorder, from distance visual impairment of left eye of subjects there was only one significance associated with low vision and factors associated with it that is based on history of brain injury and other factors have no-significance associated with low vision and the factors associated with it at level of $p < 0.05$ level of significance. From near visual impairment of (right eye, left eye) of subjects there were no significance associated with low vision and the factors associated with it at level of $p < 0.05$ level of significance. Visual function question showed that 98.5% subjects had no visual function problem, 01.5% subjects had a little problems in visual function, and 00% subjects comes under cannot do at all.

Conclusion: The conclusions were drawn on the basis of findings of the research. The results show that mainstream of subjects had normal vision but less than half of subjects had visual impairment which was associated with factors of low vision. Findings highlight the need for more intensive efforts to improve visual acuity so as to reduce the morbidity factors.

Keywords: Distance Visual Acuity; Near Visual Acuity; Adults

Introduction

ICD 11 (2018) classifies visual impairment (VI) into two groups, distance VI and near VI. Normal “distance vision” is 6/6, distance VI is worse than 6/12 and above. Myopia is worse than 40 cm N6 [1].

Blindness is a main health difficulty with both economic & social outlay. However, people with blindness are fewer in number. Vision loss that does not meet the defined criteria is called ‘Low Vision’ [2].

It’s essential to stay up to date information regarding the frequency and causes of VI in direct to build up strategies and priorities for assessing the eye health in the inhabitants [3]. The figure of ‘glaucoma’ patients estimated (64 million in 2013 and is expected to reach to 80 million by 2020) [4].

Visual acuity problems among elderly are general and often underreported. The impact of poor vision problems in older people include falls, confusion and poor quality of life. Cataract Surgery and refractive Correction is the best method of treatment of visual impairment in elder people. Therefore eye test can reduce the number of older people with vision failure [5].

As the World’s population ages, the demand for eye care services increases. Estimated incidence and comparative involvement of preventable causes of loss of sight and VI worldwide during 1990 to 2020. The aim was to contrast the goals and outcomes of the “World Health Assembly’s Global Action Plan” (WHA GAP) to decrease preventable [visual impairment] by 25% worldwide in the period 2010 to 2019 [6].

Objectives

- To assess the prevalence of visual acuity among adults of selected community areas.
- To determine the factors associated with low vision among study subjects.
- To assess the visual function among adults of selected community areas.
- To provide health education related to care of eyes using a pamphlet.

Material and Methods

A ‘non-experimental’ (Quantitative) descriptive design was used to assess the prevalence of visual acuity among the subjects,

selected through convenience sampling technique. Total 200 subjects were selected from community areas of kurali (ward no.1-13). Snellen’s and E-chart was used for the evaluation of the ‘distance visual acuity’ and near vision chart (Snellen’s and E-chart) for testing ‘near visual acuity’. The investigator developed a tool to assess the factors associated with low vision and visual functions. The content validity of the tool was established and the reliability checked by Cronbach’s Alpha. Data was collected from the subjects by interview method and visual acuity was checked simultaneously by the investigator herself.

Results

Analysis revealed that out of all 200 subjects 57 subjects had distance visual impairment and 44 subjects had near visual impairment. From distance visual impairment of right eye of subjects based on present eye disorder and from left eye based on history of brain injury were significant with low vision and other factors had no significance, from near visual impairment of (right eye, left eye) of subjects there were no significance of factors and low vision, [at $p < 0.05$ level of significance]. The results of visual function question showed that 98.5% subjects had no visual function problem, 01.5% subjects had a little problems in visual function, and 00% subjects comes under cannot do at all.

- Frequency and percentage distribution of subjects as per their Socio-demographic variables - socio demographic characteristics of the subjects revealed that out of 200 subjects (32%) were in the age group of 55 and above, majority were females, living in rural area and had education upto secondary level (31.5%), (41.5%) subjects were labours and had family income around 20000-30000 per month (36.5%).
- Frequency and percentage distribution of subjects as per their information regarding eye condition - out of 200 subjects 95% subjects were not using any eye drops for their eyes, 83.5% subjects not using eyeglasses or contact lenses to see far away, 76.5% not using eyeglasses or contact lenses to see close, 53.5% never had eye examination.
- Frequency and percentage distribution of subjects as per their habits - subjects as per their habits revealed that out of 200 subjects 51.5% subjects were vegetarian, 93.5% subjects never smoke, majority of subjects i.e., 96.5% never chew tobacco, 82.5% subjects were never intake alcohol.

- Frequency and percentage distribution of subjects as per their factors associated with low vision (various health problems factors) - out of all 200 subjects 164(82%) subjects had no previous diabetes diagnosis, more than half of the subjects i.e., 151(75.5%) had no previous history of hypertension, 196(98%) subjects had no history of brain injury, 197(98.5%) had no history of eye injury, 176(88%) subjects had no past medical history of eye problems, out of all subjects 180(90%) had no past surgical history of eyes, 191(95.5%) had no present eye disorder.
- Frequency and percentage distribution of subjects as per their factors associated with low vision (Daily habits) - out of all 200 subjects majority of subjects considering type of light uses while doing any work 143(71.5%) subjects were using tube light, 167(83.5%) subjects prefer lightened room to watch TV, more than half of the subjects i.e., 131(65.5%) were everyday watch screen (TV, mobile phone, etc.), 108(54%) subjects used to spend 1-2 hours to watch screen in a day, 121(60.5%) subjects prefer sitting position while watching screen.

Frequency and percentage distribution of distance visual acuity of right and left eye

Sr. no	Categories	Right eye f(%)	Left eye f(%)
1.	Normal (6/6-6/9)	176 (88.0%)	167 (83.5%)
2.	Mild ($\geq 6/12-6/18$)	017 (08.5%)	022 (11.0%)
3.	Moderate ($>6/18-6/60$)	006 (03.0%)	011 (05.5%)
4.	Severe ($>6/60-3/60$)	000 (00.0%)	000 (00.0%)
5.	Blindness ($>3/60$)	001 (00.5%)	000 (00.0%)

Table 1: N = 200.

Table 1 showed that majority of subjects from the right eye 88% had normal vision, 8.5% subjects had mild visual impairment, 03.0% subjects had moderate visual impairment, 0.0% subjects had severe visual impairment, 0.5% subjects had blindness.

Out of 200 subjects from the left eye depicts that more than half of subjects i.e., 83.5% had normal vision, 11% subjects had mild visual impairment, 5.5% subjects had moderate visual impairment, 0.0% subjects had severe visual impairment, 0.0% subjects had blindness.

Part 2

Frequency and percentage distribution of near visual acuity of right eye and left eye

Sr. no	Categories	Right eye f (%)	Left eye f (%)
1.	Normal (N6-N8)	179 (89.5%)	177 (88.5%)
2.	Mild vision impairment (N10-N12)	009 (04.5%)	014 (07.0%)
3.	Moderate vision impairment (N18-N24)	009 (04.5%)	008 (04.0%)
4.	Severe vision impairment or worse ($\geq N36$)	003 (01.5%)	001 (00.5%)

Table 2: N = 200.

Table 2 showed that majority of subjects from right eye 89.5% had normal vision, 4.5% subjects had mild vision impairment, 4.5% subjects had moderate vision impairment, 1.5% subjects had severe vision impairment or worse.

Majority of subjects from left eye 88.5% had normal vision, 7.0% subjects had mild vision impairment, 4.0% subjects had moderate vision impairment, 0.5% subjects had severe vision impairment or worse.

Assessment of visual function - majority of subjects out of 200, 138(69%) had no difficulty in reading, 155(77.5%) subjects had no difficulty in recognising face, 178(89%) subjects had no difficulty walking around at night because of eyesight, 194(97%) subjects had no difficulty in recognising food on plate, 185(92.5%) subjects had no difficulty avoiding potholes, stones, or branches when walking because of eyesight, 189(94.5%) subjects had no difficulty cooking, chopping vegetables, or pouring water because of eyesight, 196(98%) subjects had no difficulty using the toilet without assistance because of eyesight, 184(92%) subjects had no difficulty participating in social activities like weddings or funerals, 143(71.5%) subjects had no difficulty sorting stones from rice or beans, 190(95%) subjects had no difficulty recognising street signs, road traffic signals, 186(93%) subjects had no difficulty in picking out and matching your own clothes, socks, 145(72.5%) subjects had no difficulty in watching TV, mobile phone.

Frequency and percentage distribution of assessment of visual functions

Sr. no	Categories	Frequency	Percentage
1.	No (0-11)	197	98.5%
2.	A Little problem (12-17)	003	01.5%
3.	Cannot do at all (18-24)	000	00.0%

Table 3: N = 200.

Table 3 out of all subjects 98.5% had no visual function problem, 01.5% subjects had a little problems in visual function, and 00.0% subjects comes under cannot do at all.

Factors associated with low vision among study subjects (distant visual impairment right eye) - distance visual impairment of right eye of subjects found to be significant based on present eye disorder (0.010^{NS}), found to be non-significant based on the Self-reported diagnosis of diabetes (0.0423^{NS}), history of hypertension (0.504^{NS}), history of brain injury (0.680^{NS}), history of eye injury (0.638^{NS}), past medical history of eye problem (0.281^{NS}), past surgical history of eyes (0.505^{NS}), based on type of light uses while doing any work (0.839^{NS}), type of room prefer to watch TV (0.075^{NS}), watch screen (TV, mobile phone, etc.) (0.384^{NS}), hours spend in watching screen in a day (0.621^{NS}), position while watching screen (0.346^{NS}), [at p < 0.05 level of significance].

Factors associated with low vision among study subjects (distant visual impairment left eye) - distance visual impairment of left eye of subjects found to be significant based on history of brain injury (0.039^S) and found non-significant based on Self-reported diagnosis of diabetes (0.794^{NS}), history of hypertension (0.803^{NS}), history of eye injury 0.199^{NS}), past medical history of eye problem (0.218^{NS}), past surgical history of eyes (0.319^{NS}), present eye disorder (0.338^{NS}), based on type of light uses while doing any work (0.506^{NS}), type of room prefer to watch TV (0.199^{NS}), watch screen (TV, mobile phone, etc.) (0.084^{NS}), hours spend in watching screen in a day (0.232^{NS}), position while watching screen (0.436^{NS}), [at p < 0.05 level of significance].

Factors associated with low vision among study subjects (near visual impairment right eye) - near visual impairment of right eye

of subjects found to be non- significant based on Self-reported diagnosis of diabetes (0.135^{NS}), history of hypertension (0.318^{NS}), history of brain injury (0.229^{NS}), history of eye injury (0.229^{NS}), past medical history of eye problem (0.497^{NS}), past surgical history of eyes (0.546^{NS}), present eye disorder (0.662^{NS}), based on type of light uses while doing any work (0.265^{NS}), type of room prefer to watch TV (0.588^{NS}), watch screen (TV, mobile phone, etc.) (0.983^{NS}), hours spend in watching screen in a day (0.469^{NS}), position while watching screen (0.534^{NS}), [at p < 0.05 level of significance].

Factors associated with low vision among study subjects (near visual impairment left eye) - near visual impairment of left eye of subjects found to be non- significant based on Self-reported diagnosis of diabetes (0.263^{NS}), history of hypertension (0.418^{NS}), history of brain injury (0.868^{NS}), history of eye injury (0.452^{NS}), past medical history of eye problem (0.272^{NS}), past surgical history of eyes (0.442^{NS}), present eye disorder (0.848^{NS}), based type of light uses while doing any work (0.339^{NS}), type of room prefer to watch TV (0.148^{NS}), watch screen (TV, mobile phone, etc.) (0.500^{NS}), hours spend in watching screen in a day (0.264^{NS}), position while watching screen (0.520^{NS}), [at p < 0.05 level of significance].

Discussion and Conclusion

The findings of the present study revealed that the ‘prevalence of visual acuity’ out of all 200 subjects 57 subjects had distance visual impairment and 44 subjects had near visual impairment. From distance visual impairment of right eye of subjects based on present eye disorder and from left eye based on history of brain injury were significant with low vision and other factors had no significance, from near visual impairment of (right eye, left eye) of subjects there were no significance of factors and low vision, [at p < 0.05 level of significance]. The results of visual function question showed that 98.5% subjects had no visual function problem, 01.5% subjects had a little problems in visual function, and 00% subjects comes under cannot do at all.

Bibliography

1. Vision impairment and blindness (2022).
2. Maberley DL., *et al.* “The prevalence of low vision and blindness in Canada”. *Eye Lond Engl.* 20.3 (2006): 341-346.
3. He Y., *et al.* “Prevalence and causes of visual impairment in population more than 50 years old: The Shaanxi Eye Study”. *Medicine (Baltimore)* 99.20 (2020): e20109.

4. Rezapour J., *et al.* "Prevalence of depression and anxiety among participants with glaucoma in a population-based cohort study: The Gutenberg Health Study". *BMC Ophthalmology* 18.1(2018):157.
5. Clarke EL., *et al.* "Community screening for visual impairment in older people". *Cochrane Database System Review* (2018).
6. GBD 2019 Blindness and Vision Impairment Collaborators, Vision Loss Expert Group of the Global Burden of Disease Study. "Causes of blindness and vision impairment in 2020 and trends over 30 years, and prevalence of avoidable blindness in relation to VISION 2020: the Right to Sight: an analysis for the Global Burden of Disease Study. *Lancet Global Health* 9.2 (2021): e144-160.