

“A Study to Assess the Prevalence of Impaired Visual Acuity among Primary School Children of Selected Rural Areas of Vijayapur District with a View to Provide an Informational Booklet on Management Regarding Impaired Visual Acuity to the Mothers of Impaired Visual Acuity Children”

Akash Jadhav, Suchitra A Rati, Prakash Siddapur, M. B. Tadalgi, Prithviraj Parnakar, Ranubai Suryavanshi

1. PG Nursing tutor, Department Of Community Health Nursing BLDEA'S College of Nursing, Tikota.Vijayapur-586103
2. Professor, Department Of Community Health Nursing BLDEA'S Shri B M Patil Institute Of Nursing Sciences Vijayapur-586103
3. Professor, Department Of Child Health Nursing BLDEA'S BLDEA'S College of Nursing, Tikota.Vijayapur-586103
4. PG Nursing tutor, Department Of Mental Health Nursing BLDEA'S BLDEA'S College of Nursing, Tikota.Vijayapur-586103
5. PG Nursing tutor, Department Of Community Health Nursing BLDEA'S Shri B M Patil Institute Of Nursing Sciences Vijayapur-586103
6. UG Nursing tutor, Department Of Community Health Nursing BLDEA'S College of Nursing, Tikota.Vijayapur-586103

Abstract:- The impaired visual acuity comprises the largest actual and potential health problem in developing countries it was also noted that even though many studies are done in the clinical setting there were no studies done on the prevalence of impaired visual acuity among primary school children in the rural areas of Vijayapur district.

Visual system is one of most important sensory system it is the primary means of integration between individuals and external environment⁴. Low vision is a major cause of morbidity and had profound effect on the quality of life for many people as it inhibits morbidity.

Childhood blindness is an important cause of contributing to the burden of blindness. Blindness in children can be defined as a visual acuity of less than 3/60 in the eye with better vision of a child under 16 year of age, There are many causes of blindness in children may be due to genetic mutation, birth defects, nutritional deficiency, infections, injuries.

Objectives:

- To Assess The Prevalence Of Impaired Visual Acuity Among Primary School Children By Help Of Snellens Chart.
- To Find Out The Association Between Prevalence Of Impaired Visual Acuity Of Primary School Children With Their Selected Demographic Variable.
- To Provide An Informational Booklet On Management Of Impaired Visual Acuity To The Mothers Of Impaired Visual Acuity Children.

I. INTROUCTION

Children are the investment of country and healthy children are the pride of mothers”

“Vision is gift from god”

Visual system is one of most important sensory system it is the primary means of integration between individuals and external environment⁴. Low vision is a major cause of morbidity and had profound effect on the quality of life for many people as it inhibits morbidity.(4)

Childhood blindness is an important cause of contributing to the burden of blindness. Blindness in children can be defined as a visual acuity of less than 3/60 in the eye with better vision of a child under 16 year of age, There are many causes of blindness in children may be due to genetic mutation, birth defects, nutritional deficiency, infections, injuries.(2)

Visual impairment is a decreased ability to see a degree that cause problems not fixable by usual means such as glasses, The most common cause of visual impairment globally are uncorrected refractive errors, cataract glaucoma and vitamin A deficiency plays an important role in blindness.¹ The WHO estimates that 80 percentage of visual impairment is either preventable or curable with treatment,⁴. Vitamin-A deficiency is a top cause of preventable childhood blindness through in measles cause the administration of vitamin to offset visual impairment has not been proven effectively.(2)

The earliest signs of disorders of visual acuity are strains of eye with redness watering and headache at the end of school timing. Although the child may report his problems to his parents have lack of awareness of the need for earlier and prompt correction of such disorders misconception social and cultural customs and beliefs may affect utilization of available health services.(13)

In 2010 WHO that nearly 285 million people of all ages worldwide are usually impaired almost 189 million children under age of 15 years of age are usually impaired globally in developing countries in which 7 to 31 percentage of childhood blindness and visual impairment is avoidable.7. Visual impairment and blindness are major public health problems in developing countries where there is no enough health care service.(4)

A school based visual acuity screening program is substantially more effective and less costly for delivering eye care to school going children compared to another primary eye care models, in almost all low and middle income setting school screening programs have been modeled around non eye care personnel most commonly teachers and occasionally nurses who are trained to conduct the visual acuity testing.(11)

Assessing the impact of visual impairment and blindness is met with the unique challenge that most people have two eyes with different levels of visual acuity (VA) which contribute to overall visual function. Therefore, functional impairment which affects both eyes differently is difficult to quantify overall. Economic evaluations frequently use utilities based on the better eye or differentiate between treatment of the worse and better eye assuming a differential impact on patients' preferences and quality of life, resulting in differing cost implications and cost-benefit ratios The most commonly used definition of blindness and visual impairment.(46).

II. REVIEW OF LITERATURE

A cross sectional study was conducted to determine the prevalence of visual impairment among school children at Aradasubcity primary school, Addis Ababa Ethiopia in 15 June 2015 and 30 November 2015. Two schools were selected randomly and 378 students were screened from grades 1-8 by using systematic random sampling method out of 378 students 192 are female and 186 are males the prevalence of visual impairment either eye were 5.8 percentage.(4)

The study was conducted to determine the prevalence of visual impairment among 1184 school students in Puducherry. The overall prevalence of visual impairment among the study participants was 6.37 percentage and it was found to be high in male students (6.6 percentage) when compared to female student 6 percentage.(7)

The study was done to determine the prevalence of visual impairment due to refractive errors in lower middle class children of Hyderabad India. A total of 4029 children were included in that 2348 males and 1681 females in the age group of 3 to 18 from 9 schools were screened with

detailed ocular examination among those. The results reveals that the children 3669 children visual acuity was recorded on presentation in that 115 had visual acuity <6/18 in the better eye while 41 children had visual acuity of 6/60 out of which 18 had 6/60 and 115 children who present with initial visual acuity <6/18. The prevalence of hyperopia was 22.6% myopia 8.6% and astigmatism 10.3%. The prevalence of myopia was significantly higher among children >10 year of age.25

A study to assess the prevalence of visual impairment in school children of upper middle socio economic status in Kathmandu from January to May 2006. A total of 4501 children were examined under the age group of 5-9 were enumerated the sample were selected by random selection. The study reveals that the prevalence of uncorrected presenting best corrected visual impairment in the better eye was 18.6%, 9.1% and 0.86% respectively the main cause of impairment in children was refractive error amblyopic 1.8% retinal disorders 1.3%.24

The purpose of study was to assess the prevalence and pattern of refractive error among primary school children in Al Hassa, Saudi Arabia from November 2012. A total of 2246 children of primary school aged 6 to 14 years of both male and female were selected by using multistage sampling method from 30 different schools screening was done by optometrists using standardized protocol and children are screened by using Retinoscopy. The result reveals that the overall prevalence of refractive error was 13.7% higher among females and significantly more among students of rural residence and more among those children aged 12-14 years 9.4% students with poor vision were wore spectacles for correction and the most commonly encountered error among both the children was myopia (65.7%).33

III. METHODOLOGY

It includes the systematic process by the researcher start from the identification of problem to its conclusion.

- **Research approach-** with view of achievement of the objective a quantitative descriptive approach was used to assess the prevalence of impaired visual acuity among children.
- **Research design-** in this study a descriptive survey design is used to assess the prevalence of impaired visual acuity among children.
- **Research setting-** it refers to physical setting and conditions where data will be collected for the study. The study is conducted in Jigjeni village of Vijayapur district.
- **Population-** Total 400 primary school children were included in the study.
- **Sample and Sampling technique-** subject that compromises the population. The sample for the study is 400 primary school children were selected from primary schools of Vijayapur district who meets inclusive criteria. on probability in which convenient sampling technique is used that researcher can easily access the sample of study.
- **Sampling criteria-** Which expresses

• Inclusive criteria-

- Both male and female children of primary school children of Vijayapur are included in the study.
- Those who understand Kannada.
- Primary school children present during the time of study
- The primary school children with age group of 3rd to 7th standard of age

• Exclusion criteria-

- The primary school children already diagnosed with visual impairment of rural area of Vijayapur.
- The primary school children who are absent during the time of study

• Data collection instrument or description of tool had the following parts

- **Part 1-** Demographic data of the sample includes age, sex, religion, nature of diet, nature of family, no of siblings, placement of child in family, educational status, occupation of father, income of family.
- **Part 2-** Snellen’s chart was used to assess the prevalence of impaired visual acuity **Data collection method-** prior permission was taken from concerned (BEO) and individual consent was obtained from the samples and assessed the impaired visual acuity by Snellen’s chart.

IV. RESULT AND DISCUSSION

Section 1: Demographic Variables of Respondents

Table 1: Frequency and percentage distribution according to their age, gender, educational status, Religion, Economic status per month, Type of family, Year of experience, History of previous illness, Source of information about occupational health hazards, training program.

Age	Frequency	Percentage
7-9	155	38.8
10-12	136	34.0
13-15	109	27.3
Total	400	100

Table 1: Frequency and percentage distribution of study subjects according to their age

From figure 1, it is observed that maximum no. of study subjects 155(38.8%) were in the age group 7-9 followed by 136 (34%) were in the age group 10-12 and remaining 109(27.3%) were in the age group 13-15.

Sex	Frequency	Percentage
Male	191	47.8
Female	209	52.3
Total	400	100.0

Table 2: Frequency and percentage distribution of study subjects according to their gender

From figure 2, it’s clear that maximum no of study subjects 209(52.3%) were females and remaining 191(47.8%) were males.

Religion	Frequency	Percentage
Hindu	261	65.3
Muslim	91	22.8
Christian	20	5.0
Any other	28	7.0

Table 3: Frequency and percentage distribution of study subjects according to their religion

From figure 3: it was clear that, most of the study subjects 261(65.3%) were Hindu followed by Muslims 91 (22.8%) , very few 20(5.0%) were Christian and remaining 28(7.0%) were belongs to other caste.

Nature of diet	Frequency	Percentage
Vegetarian	248	62.0
Non-vegetarian	92	23.0
Mixed	60	15.0
Total	400	100.0

Table 4: Frequency and percentage distribution of study subjects according to nature of diet

From figure 4, it was observed that maximum study subjects 248(62.0%) were vegetarian, 92(23.0%) of study subjects were Non-Vegetarian and remaining 60(15.0%) were having mixed diet.

Education Status of Mother	Frequency	Percentage
Non formal	31	7.8
Secondary	195	48.8
Higher Secondary	132	33.0
Graduate	42	10.4
Total	400	100

Table 5: Frequency and percentage distribution of study subjects according to mother education

From Figure 5, it was clear that maximum 195(48.8%) of mothers were studied up to secondary. 132(33%) were studied up to higher secondary. 42(10.4%) of smothers were graduates and remaining 31(7.8%) mothers were completed non formal education.

Nature of family	Frequency	Percentage
Nuclear	272	68.0
Joint	128	32.0
Total	400	100.0

Table 6: Frequency and percentage distribution of study subjects according to nature of Family

Figure 6, reveals that maximum 272(68.0%) study subjects were belongs nuclear family and only remaining 12(20%) of study subjects were belongs to joint family .

Occupation of father	Frequency	Percentage
Labour	48	12.0
Agriculture	104	26.0
Self Employee	168	42.0
Government employee	67	16.8
Unemployed	13	3.3
Total	400	100.0

Table 7: Frequency and percentage distribution of study subjects according to occupation of father

From Figure 7, it was seen that maximum 168(42%) fathers were self-employed. Very few 104(26.0%) were doing agriculture. 67(16.8%) of study subjects were government employee. 48(12.0%) were labour and very few 13(3.3%) of study subjects were unemployed.

10000-15000 followed by 104(26.0%) had income between 5000-10000. 61(15.3%) of study subjects family had income less than 5000. 56(14.0%) had income more than 20000 and very few 8(2%) family of study subjects had income between 15000-20000

Monthly income(RS)	Frequency	Percentage
<5000	61	15.3
5000-10000	104	26.0
10000-15000	171	42.8
15000-20000	8	2.0
> 20000	56	14.0
Total	400	100

Table 8: Frequency and percentage distribution of study subjects according to family income

Visual acuity	Presenting Vision(n)	Prevalence (%)
6/6	363	90.75
6/9	19	4.75
6/12	7	1.75
6/18	5	1.25
6/24	4	1
6/36	2	0.5
Total	37	100

Table 9: Frequency and Percentage distribution of study subjects based on their maximum distance vision.

From Figure 8, it was observed that maximum 171(42.8%) study subjects had family income between

From figure 11, it was observed that overall prevalence of visual acuity was 9.25%.

Variables	Visual Acuity		d.f	Chi-square	p-value
	Present	Absent			
7-9	10	145	2	5.49	0.06(NS)
10-12	11	125			
13-15	16	93			
Sex					
Male	16	175	1	0.332	0.607(NS)
Female	21	188			
Religion					
Hindu	26	235	3	0.922	0.820(NS)
Muslim	7	84			
Christian	1	19			
Any other	3	25			
Nature of diet					
Vegetarian	25	223	2	0.559	0.756(NS)
Non-vegetarian	7	85			
Mixed	5	55			
Education Status of Mother					
Non formal	2	29	3	5.98	0.112(NS)
Secondary	12	183			
Higher Secondary	17	115			
Graduate	6	36			
Nature of family					
Nuclear	30	242	1	3.20	0.049(S)
Joint	7	121			
Occupation of father					
Labour	3	45	4	3.825	0.43(NS)
Agriculture	8	96			
Self Employee	21	147			
Government employee	4	63			
Unemployed	1	12			
Monthly income(RS)					
<5000	4	57	4	3.81	0.432(NS)
5000-10000	8	96			
10000-15000	21	150			
15000-20000	0	8			
> 20000	4	52			

Table 10: Association between impaired visual acuity and socio demographic variables

S-Significant NS-Not Significant

From table no 10 , there was no association between impaired visual acuity with socio demographic variables such as age, gender, religion, nature of diet, education status of mother , occupation of father and family income but there is weak association between impaired visual acuity and nature of family as its p-values was 0.049.

V. CONCLUSION

This chapter presents the conclusions drawn, implications, limitations, suggestions and recommendations.

The focus of this study was to assess the prevalence of impaired visual acuity among primary Scholl children of selected rural areas of Vijayapur district.

• The conclusions drawn from the study are as follows:

- Majority 38.8% of the subjects were between the age group of 7-9years.
- 52.3% were females.
- 65.3% subjects were Hindus.
- 48.8% were secondary education.
- 68.0% of belongs to nuclear family.
- 42.0% subjects are selfemployees.
- 42.8% of subjects were having the income ranges from 10000-15000.
- 62.0% of subjects were vegetarian
- The prevalence of impaired visual acuity in the study population was found to be 9.25 %(100%), out of 400 participants the maximum numbers were females.
- It is observed that nuclear family is having more riskof getting visual impairment.
- To find out association between impaired visual acuity with selected demographical variables by using chi-square test. The chi-square value shows that there is a significant association between hypertension with the demographic variables of primary school children of selected rural areas at Vijayapura.

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