

# A STUDY TO ASSESS THE EFFECT OF VISUAL IMPAIRMENT ON QUALITY OF LIFE AMONG BLIND CHILDREN IN A BLIND SCHOOL IN GUWAHATI, ASSAM

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## ABSTRACT

**Introduction:** It is estimated that the prevalence (using under-5 mortality rate as country categories) of childhood blindness in low income countries is 1.5/1000 and in high income countries is 0.3/1000. The magnitude is 3/4 in poorest regions of Africa and Asia and an estimate of 1.4 million blind children globally with incidences 500,000 children /year. As Visual Impairment/Blindness in childhood is generally neither preventable nor treatable, interventions are directed mainly towards promoting optimal development and reducing the disability consequent upon the Visual Impairment. The outcomes of these efforts are captured by the concept of health-related quality of life (HRQL).

**Materials and methods:** A descriptive explorative survey design was used to assess the effect of visual impairment on quality of life among blind children in selected blind schools in Guwahati, Assam. The objectives of the study were to assess the effect of visual impairment on the quality of life among children in selected blind schools. A total of 60 samples were selected from Guwahati Blind High School using purposive sampling technique. The Low Vision Quality of Life tool was used to measure the quality of life. Frequency and percentage were calculated to determine the quality of life and demographic variables among blind children.

**Results and analysis:** The findings of the study showed that out of total blind children (60), 22 (36.66%) had a good quality of life while 38(63.33%) had a bad quality of life,. Among the samples, most of them were in the age group of 11-15 years. Majority of samples were male 34(56.66%) as compared to females 26(43.33%). Most of the samples came from Hindu family i.e. 32 (53.33%). Majority i.e. 39(65%) were from nuclear family. Both partial and complete visual impairments were equal (50% each) in the samples. Visual impairment duration was more in more than 5 years (70%). Majority of the samples did not have a family history of blindness 93.33%. Majority of the samples had both eyes affected (96.66%).

**Discussion and conclusion:** Around 1.4 million have irreversible blindness, requiring access to vision rehabilitation services to optimize functioning and reduce disability. Therefore identifying the contributing or related factors leading to visual impairment and campaigns to educate about vision function importance and awareness can bring about a multitude of change in setting a good life for the visually impaired.

**Keywords:** Visual impairment, Blind children, Quality of life, Effect, Children

## INTRODUCTION

Many people have some type of visual problem at some point in their lives. When one or more parts of the eye or brain that are needed to process images become diseased or damaged, severe or total loss of vision can occur.<sup>1</sup>

Visual impairment is a general term that encompasses both partial sight and legal blindness. Partial sight or partial visual impairment is defined as a visual acuity between 20/70 and 20/200. Legal blindness or severe permanent visual impairment is defined as a visual acuity of 20/200 or lower or a visual field of 20 degrees or less in the better eye. The current politically correct terms for blindness include visually handicapped and visually challenged.<sup>2</sup>

It is estimated that the prevalence (using under-5 mortality rate as country categories) of childhood blindness in low income countries is 1.5/1000 and in high income countries is 0.3/1000. The magnitude is 3/4 in poorest regions of Africa and Asia and an estimate of 1.4 million blind children globally with incidences 500,000 children /year.<sup>3</sup>

The term “quality of life” is popularly used to describe an individual’s overall sense of well-being, and includes aspects such as happiness and satisfaction with life as a whole. The World Health Organization defines quality of life as “the individual’s perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, standards, expectations, and concerns”.<sup>4</sup>

India was the first country to launch the National Programme for Control of Blindness (NPCB) in 1976, as a 100% centrally sponsored Programme. A large number of blind people in a country denote poor socio-economic development and an inefficient eye care service in the country. There are 45 million blind persons in the World, of which 12 millions blind persons is in India.<sup>5</sup> As Visual Impairment/Blindness in childhood is generally neither preventable nor treatable, interventions are directed mainly towards promoting optimal development and reducing the disability consequent upon the Visual Impairment.<sup>1</sup>

As per WHO criteria, there are 40-50 million blind people in the world and another 135 million have impaired vision. As per WHO estimates the blind population will double by 2020 due to rise in population and longevity. According to Verma R, Khanna P, Arora. National program for control of blindness in India (2011) Cataract is the commonest cause of blindness (62.6%) followed by uncorrected refractive errors (19.7%); Corneal Blindness (0.90%), Glaucoma (5.80%), Surgical Complication (1.20%) Posterior Capsular Opacification (0.90%) Posterior Segment Disorder (4.70%) and Others (4.19%).<sup>5</sup>

India is now home to the world's largest number of blind people. Of the 37 million people across the globe who are blind, over 15 million are from India. What's worse, 75% of these are cases of avoidable blindness. On the other hand, while India needs 2.5 lakh donated eyes every year, the country's 109 eye banks (five in Delhi) manage to collect a maximum of just 25,000 eyes, 30% of which can't be used.<sup>6</sup>

Visual impairment is a worldwide problem that has a significant impact and childhood blindness is a priority area because of the number of years of blindness that continues in their life. Hence, there is a need to study the effect of visual impairment on quality of life of blind children as when the child grows up, the overall well being is important and since visual impairment is an important component for quality of life, it is necessary to assess the emotional, physical, social and mental status to bring about a desired change in their lives.

## MATERIALS AND METHODS

A descriptive survey design was used to assess the effect of visual impairment on quality of life among blind children in selected blind schools in Guwahati, Assam. The objectives of the study were to assess the effect of visual impairment on the quality of life among children in selected blind schools and to determine the significant association between the quality of life among blind children with the demographic variables. A modified conceptual framework based on Wilson and Cleary health related quality of life model (1995) was used. The study was carried out in the month of December. Ethical considerations were obtained from the following: Administrative permission was obtained from Principal, Sankar Madhab College of Nursing, Ethical clearance from Assam Downtown University, Permission from the authorities of the Guwahati blind school for main study and Jyoti Niketan blind school for pilot study and reliability of the tool, written consent was obtained from all the participant of the study. The population of this research study comprised of 60 visually impaired children from the blind school. A purposive sampling technique was adopted for the study. The criteria for selection of sample were: Inclusive criteria-children who are studying in blind school, children who are partially and completely blind. Exclusive criteria-children who are not willing, children who are critically ill, children who have mental disability. In this study, variables are: Research variable-quality of life among blind children. Demographic variables-age, gender, religion, education status of the child., type of family, type of visual impairment (partial and complete), visual impairment duration in years, has any other disease, family history of blindness, eyes affected. The tools used for this study consists of two parts:- Tool-1: Structured interview schedule of Demographic variables Tool-2: Low Vision Quality of life (LVQOL)<sup>10</sup> tool- LVQOL has a summed score between 0 (a low quality of life) and 125 (a high quality of life). The data's collected were calculated and tabulated by frequency, percentage and chi-square for association.

## RESULTS AND DISCUSSIONS

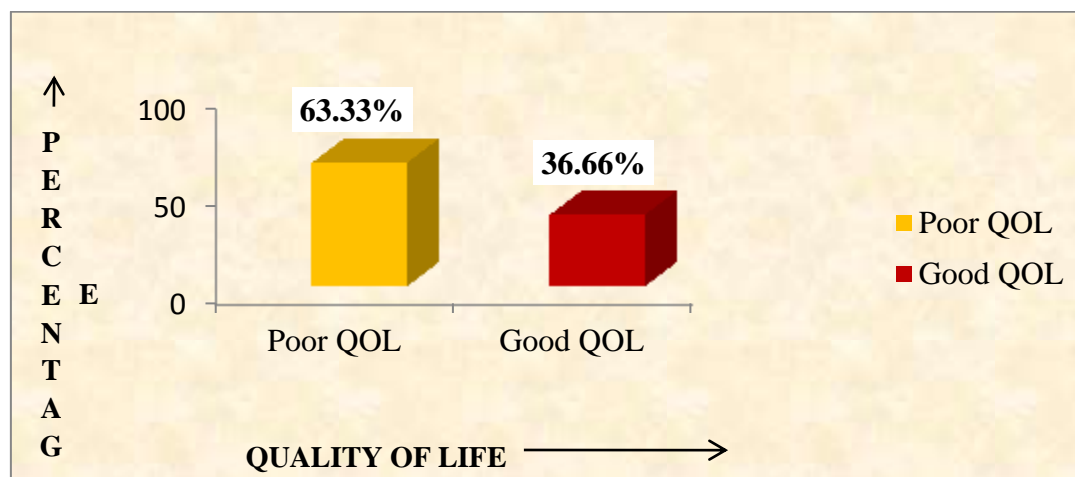
From the frequency and percentage distribution of demographic variables of visually impaired children (**Table 1**) data analysis showed that most of the samples were in the age group of 11-15 years. Majority of the samples were male 34(56.66%) and females were 26(43.33%). Most of the samples came from Hindu family i.e. 32 (53.33%). The education status of the children were more in primary i.e. 33(55%). Majority i.e. 39(65%) were from nuclear family. Both partial and complete visual impairments were equal 30(50% each) in the samples. Visual impairment duration was more in more than 5 years 42(70%). Majority of the samples did not have a family history of blindness 56(93.33%). Majority of the children had both eyes affected 58(96.66%).

### Effect of visual impairment on the quality of life among blind children

This was fulfilled by assessing the quality of life of the samples using the **Low Vision Quality of Life** tool through interview technique among the blind children aged from 3 years to 15 years. Each sample cost about maximum of 15 minutes to apply the tool. It was found out of 60 blind children, 22 (36.66%) had a good quality of life while 38(63.33%) had a bad quality of life, shown by (**Fig:1**). There is a significant effect of visual impairment on the quality of life which is supported by Kehinde A, Tunji SO, Modupe MA, and Samuel AO. (2014)<sup>7</sup> where Quality of life was found to be related to the degree of visual impairment, ie, blind patients reported poor quality of life (41.4%) and Rasmeeth KC and Ahalya S. (2010)<sup>8</sup> Quality of Life showed that children with visual impairment had significantly lower scores than the comparison group ( $p < 0.001$ ), resulting in a 35.6% reduction in total quality of life score.

Low Vision Quality of life (LVQOL) domainwise classified into 4 aspects, ie; distance vision, mobility and lighting, adjustment, reading and fine work and activities of daily living. The present study showed that in distance vision, mobility and lighting, domain of the Low Vision Quality of Life, the grading for none 21(2.92%), moderate 32(45%) and for great 183(25.42%). In adjustment domain the grading of none 172(71.66%), for moderate 59(24.58%) and great 9(3.75%). In reading and fine work, the grading for none 9(1%), moderate 114(38%) and great 65(21.66%). In activities of daily living, none 41(17.08%), moderate was 105(43.75%) and great 45(18.75%) (**Fig:2**).

## FIGURES AND TABLES



**Fig1: Schematic bar diagram representing quality of life and percentage distribution**

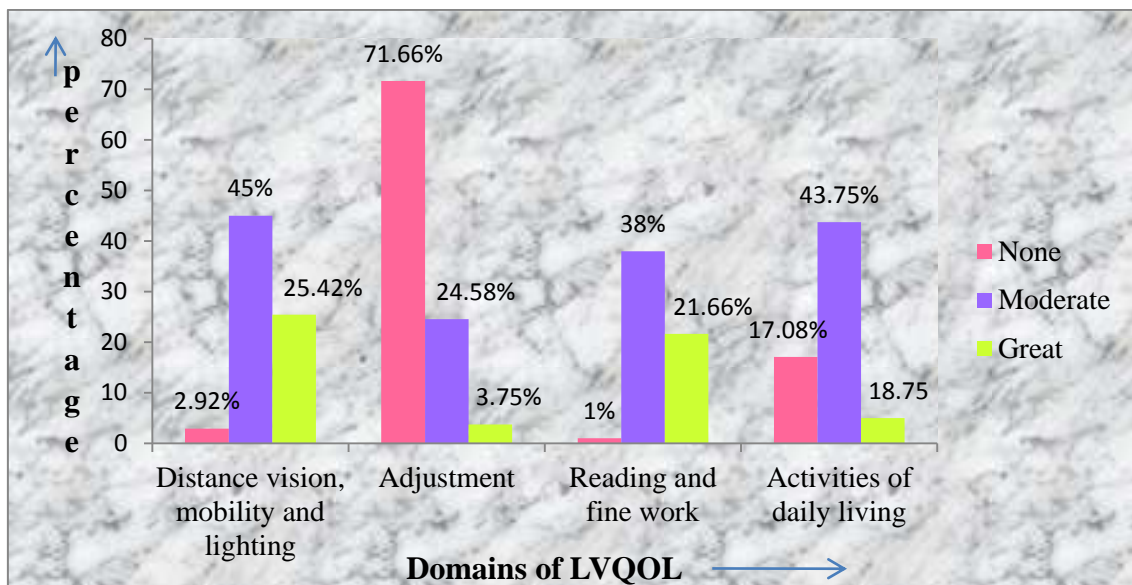


Fig 2: Schematic bar diagram representing the classification of none, moderate and great of each domain of LVQOL

Table 1: Frequency and percentage distribution of demographic variables

n=60

Sample characteristics	Frequency (F)	Percentage (%)
<b>Age in years</b>		
a. 3-6	7	11.66
b. 7-10	19	31.66
c. 11-15	34	56.66
<b>Gender</b>		
a. Male	34	56.66
b. Female	26	43.33
<b>Religion</b>		
a. Hindu	32	53.33
b. Muslim	16	26.66
c. Christian	12	20
d. Others	0	0
<b>Education status of the child</b>		
a. No education	0	0
b. Elementary	13	21.66
c. Primary	33	55
d. High school	14	23.33
<b>Type of family</b>		
a. Nuclear	39	65
b. Joint	21	35
c. Extended	0	0
<b>Type of visual impairment</b>		
a. Partial	30	50
b. Complete	30	50
<b>Visual impairment duration in years</b>		
a. Less than 5 years	18	30
b. More than 5 years	42	70
<b>Has any other disease</b>		
a. Yes	10	16.66
b. No	50	83.33
<b>Family history of blindness</b>		
a. Yes	4	6.66
b. No	56	93.33
<b>1. Eyes affected</b>		
a. Left eye	1	1.66
b. Right eye	1	3.33
c. Both eyes	58	96.66

**CONCLUSION**

An estimated 19 million children are vision impaired. Of these 12 million children have vision impairment due to refractive error. Around 1.4 million have irreversible blindness, requiring access to vision rehabilitation services to optimize functioning and reduce disability. This study was conducted to assess the effect of visual impairment on quality of life among blind children in selected blind schools in Guwahati, Assam. The finding of the study has shown that majority of the children had poor quality of life and there was significant associations between the demographic variables-age, type of visual impairment and other diseases with the Low Vision Quality of Life tool. Therefore identifying the contributing or related factors leading to visual impairment and campaigns to educate about vision function importance and awareness can bring about a multitude of change in setting a good life for the visually impaired. Furthermore similar study can be replicated with a larger sample.

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