CURRENT STATE OF LOW VISION REHABILITATION SERVICES AMONG BLIND SCHOOLS. A REVIEW

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Abstract

Background: Blind schools need poor vision services Goal: To comprehend the fundamental requirements for low vision aids among visually challenged schoolchildren. Method: The keywords were searched for in the internet databases of Pub Med, Google Scholar, Science Direct, and Medline. A total of 60 papers were discovered via systematic searching, and once complete texts were reviewed, 30 of those articles met the requirements for inclusion. Review criteria included participant characteristics, such as gender and age, prevalence rates, reasons why visually impaired and blind people don't attend school, and obstacles they confront. On the basis of geography, ethnicity, and the year of publication, the research were compared. Results: After reading all 30 stories, it became clear that there are more and more visually challenged kids throughout the globe each year. As earlier published study papers have shown, visually impaired students face a variety of challenges, making low vision rehabilitation all the more essential to enhancing their quality of life. Globally, the prevalence of vision impairment is increasing yearly. Children who are visually impaired must face several obstacles, which decreases their quality of life. The review article's findings suggest that low vision therapy is necessary for visually challenged schoolchildren.

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INTRODUCTION

Visual impairment is a major problem on a global scale. According to the categorization of disorders 11, visual impairment is further separated into two categories: distance and near visual impairment (2008). Distance visual impairment is further divided into four categories: mild visual impairment, moderate visual impairment, severe visual impairment, and blindness, defined as better eye visual acuity of less than 3/60.

Mild visual impairment is defined as better eye visual acuity of less than 6/12, moderate visual impairment, better eye visual acuity of less than 6/18, and severe visual impairment, better eye visual acuity of less than 6/60. When near visual acuity is less than N6 after complete correction, there is a near visual impairment[1].285 million people worldwide are estimated by the WHO to have visual impairments, 246 million to have impaired vision, and 39 million to be blind[1].In order to enhance function and minimise their handicap, the 18.9 million children and adolescents with visual impairments (1.4 million of whom are permanently blind) require access to rehabilitation therapies.

The leading causes of blindness include uncorrected refractive error (19%), cataract (62.6%), glaucoma (5.8%), corneal disorders (0.9%), and other factors (11%) Even though the number of persons with impaired vision and other visual impairments is growing everyday, developing countries like India still have a low adoption. The prevalence of blindness was determined to be 1.99%, and severe visual impairment to be 1.96%, according to the National Blindness and Visual Impairment Survey. Visual impairment that is moderate 9.81% MSVI 11.77%, VI 13.76%, and EVI 12.92%. Functional poor vision prevalence was 1.03%, while blindness 3/60 was 1.75%.

The age group 80 and older had the highest frequency of blindness, which was followed by the remainder and was also more common among illiterates than among educated people.

A person with poor vision is one who has vision impairment despite receiving therapy and/or standard refractive correction, has a visual field or visual acuity of less than 10 degrees away from the point of fixation, yet utilises or may be able to use vision for task planning. A person with limited vision finds it more difficult to execute tasks that require vision, which may reduce their quality of life, increase their reliance on others, and increase their risk of developing depressive symptoms.

[2]The major reasons of impaired vision are age-related macular degeneration, diabetic retinopathy, glaucoma, retinitis pigmentosa, and adult-onset foveo macular vitelli form dystrophy. Even more studies have been done on the use of low vision services in India and other countries.

However, a variety of issues, including as accessibility, cost, and availability, might act as roadblocks to the services. [1]People with disabilities should not be excluded from the basic general education system due to their disability, and they should even get assistance inside the same system to improve their effectiveness and education, in accordance with core human rights standards.

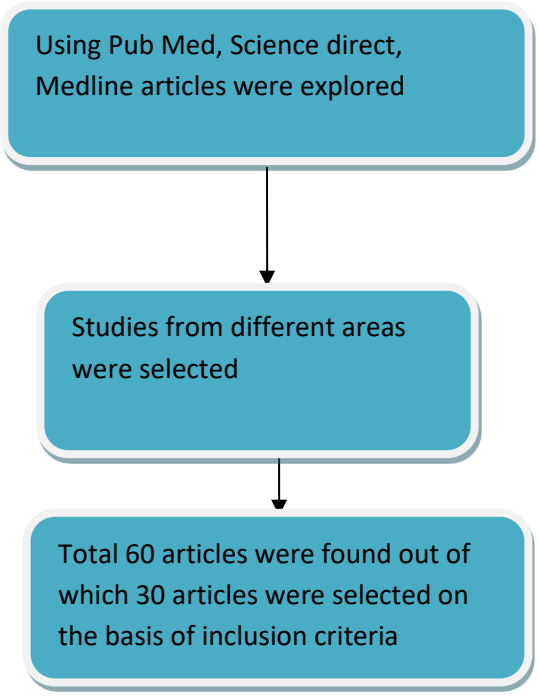
It is a novel notion to think about assistive technology. Enhancing the functional skills of persons with impairments, especially those who are visually impaired, is the primary goal of AT development and design. In 2011, the WHO produced the World Disability Report, which raised awareness of assistive technology. [2]

METHODS

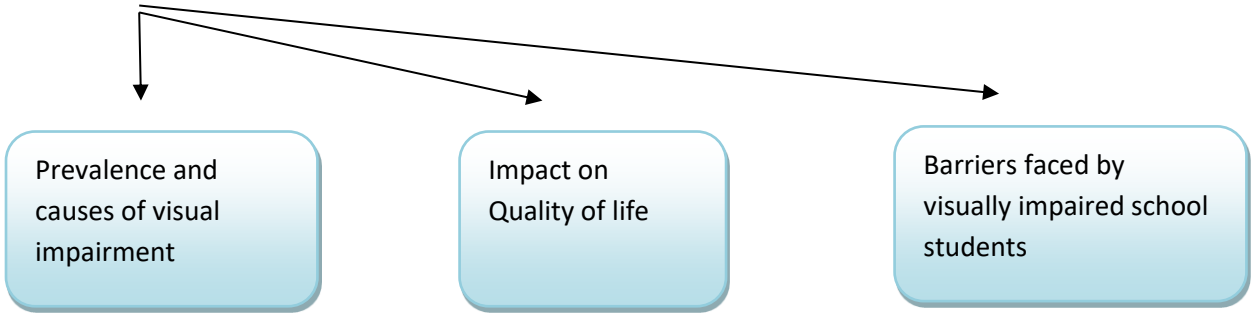
The keywords were looked for in the internet databases of Pub Med, Science Direct, and Medline are some of the resources available.. The search was limited to primary research that was written in English and published in scholarly publications.

In this review, summaries of each article that met the outlined criteria were chosen from those with full texts available, and they were then compared to other studies. Review criteria included participant characteristics, such as gender and age, prevalence rates, reasons why visually impaired and blind people don't attend school, and obstacles they face.

On the basis of geography, ethnicity, and the year of publication, the research were compared. A total of 60 articles were discovered through systematic searching, and after full texts were reviewed, 30 of those articles met the criteria for inclusion.



REVIEW OF LITERATURE



PREVALENCE AND CAUSES OF VISUAL IMPAIRMENT BASED

A research was conducted in 2022, according to T Muhammad et al. 59.1% of respondents in the 2011 research "Building a Knowledge Base on Population Ageing in India," which included 9541 seniors as participants, reported vision impairment, according to the findings. 60 percent of the people had cognitive impairment. People with cognitive impairments had an 11% higher likelihood of having visual impairment. Low activities of daily life, poor psychological health, chronic diseases, and low self-rated health were risk factors for cognitive impairment.In 2021 According to Michael A, Kwarteng et al. conducted a cross-sectional research on 268 participants to ascertain the frequency and causes of low vision and blindness among pupils at Ghana's Akropong School for the Blind. During eye exams, the Tumbling distance Log Mar chart was used to test visual acuity at presenting distance. An ophthalmoscope and slit light were used to examine the anterior and posterior section. 76.1% were found to be blind, while 23.9% had impaired eyesight. Glaucoma (39.1%) was the main contributor to reduced vision, followed by pseudophakia (21.9%) and retinopathy (18.8%).According to a research conducted in 2020 by Praveena Tandon et al. on the prevalence of visual impairment and related quality of life among older individuals in an urbanised hamlet in Delhi. This research was conducted in East Delhi from May to December of this year. 224 people were selected using simple randomization. A pre-tested, semi-structured tool was used to collect socio-demographic data. Indian Vision Function Questionnaire-33 was used to assess the quality of life related to vision, and Snellen's chart was utilised to measure visual acuity (IND-VFQ-33). It was found that 20.1% of the individuals had VI. The average total visual function score for the blind subjects was 108.40 (5.10). Those with VI scored more on average and on a median basis than participants without VI. One in five elderly persons have been found to have visual impairment.In 2018, Sumit Malhotra conducted a cross-sectional research on the prevalence and causes of vision impairment among persons aged 15 to 49 in a rural

region of North India. Using the probability sampling technique, 34 villages were chosen for the study. Cluster sampling was used to choose adults between the ages of 15 and 49. 5117 (94% of participants) completed all the steps. Blindness was found to be more common than visual impairment, with a frequency of 0.09% compared to 1.85%. Refractive errors that were left uncorrected were a substantial factor in this group's visual impairment. Age and educational attainment were shown to be related to the visual impairment in this research.A cross-sectional population-based research on the prevalence and causes of impaired vision and blindness in an older community in Nepal was conducted in 2018 by Raba Thapa et al. It comprised 2100 participants. 1860 people had full information in total. A thorough eye exam and visual acuity test were conducted. It was discovered that 984 and 36 subjects, respectively, had limited eyesight and blindness. Low vision and blindness were discovered in 426 and 30 subjects, respectively, after optimal correction. Cataracts (68.07%) and retinal disorders (28.64%) were the two most common causes of bilateral low vision, while retinal disorders (46.6%) and cataracts (43.3%) were the two most common causes of blindness.

BARRIERS BASED STUDIES

A research on perceived impediments to low vision rehabilitation services among Ethiopian eye care professionals was conducted by Sinbona Geleta Dendea in 2022. Over the course of two months, a cross-sectional descriptive survey of the country's active ophthalmologists was conducted (June 1 to July 30, 2020). The shortage of low vision equipment and their high cost (136, or 90.67%), lack of training (117, or 78%), ignorance (49, or 32.7%), lack of interest or desire (38, or 25.3%), and increased workload and manpower (34, or 22.67%) are the most challenges to delivering low vision care for patients. The belief that a major barrier to providing low vision rehabilitation is a lack of interest or motivation was shown to be much more prevalent in individuals who were acquainted with low vision treatments compared to those who were not.

A research on awareness, understanding, and Mantasha Dilkash et al. did a study in 2021 on the barriers to low vision services among eye care providers in Maharashtra. A cross-sectional survey was recently conducted. employing a uniform survey administered by a Maharashtrian network of eye care professionals The two most common causes of visual impairment were found to be glaucoma (11.1%) and retinal diseases (76.1%) in this investigation. The most effective spectacle correction, rehabilitation, and referral to other hospitals/specialized centres were deemed critical by 31.7%, 4.7%, and 23.8% of practitioners, respectively.. The instrument that was used the most often was the magnifying lens.

In 2021, Ali M. Alsaqr conducted research on poor vision barriers among optometrists in Saudi Arabia. To collect data, working optometrists self-administered an online structured survey. Responses were gathered in order to better understand the number and distribution of low vision service providers, as well as the level of awareness and hurdles to the implementation of low vision services. From Saudi Arabia's five regions, 154 practising optometrists were chosen. They were graduate and doctoral students majoring in philosophy. 30%, or 44 people, offered aid for bad vision. The most often reported constraints were a lack of training (87%), ignorance about low vision services (76%), a lack of generally accessible low vision equipment (70%), a lack of desire (65%), and the time-consuming nature of the operation.

IMPACT ON QUALITY OF LIFE BASED

Research on the quality of life for children with poor vision after using low vision aids was conducted in 2019 by V Kavitha et al. The LVP-FQ LV Parsad Functional Vision Questionnaire was used in this research to evaluate quality of life and to monitor best corrected visual acuity three months following the distribution of low vision devices. According to their demands, 30 kids were evaluated and given low vision aids for distance and up close. Before and after three months from the installation day, the QOL and BCVA were evaluated. After using LVA for 3 months, it was observed that there had been a substantial improvement in vision-related QOL (P0.001).

Yotam Rosner and colleagues conducted research on the impact of using In 2018, the impact of computer-based assistive technologies on the functionality and quality of life of people who are blind or have low vision was studied. In this study, 96 people were chosen at random to complete a questionnaire about their quality of life and the impact of computer-based assistive technologies on their everyday lives. And it was revealed that they were really pleased with them, demonstrating that the devices had increased their level of living.Research on the effect of low vision services on the standard of low vision patients in Ghana was conducted in 2016 by Godwin O et al. In this investigation, the influence of the therapeutic intervention was observed from the viewpoint of the patients. Instruments for measuring quality of

life have been developed. The 25-item National Eye Institute Visual Function Questionnaire (NEI VFQ) was used to gauge how 22 patients' quality of life has been affected by low vision aids. In 8 out of 10 patients, there was a substantial improvement in visual acuity and NEI VFQ scores before and after the intervention.

Ingrid U. Scott et al. conducted a 1999 study on the impact of poor vision care on patients' quality of life. In this research, 156 individuals who had visited a low vision clinic were given the NEI FQ questionnaire 1 week before and 3 months after their appointment. After receiving low vision services, it was shown that poor vision patients' quality of life had significantly improved.

RESULTS

Studies related to prevalence and causes of visual impairment were identified various regions from India as well as globally. In India these studies were taken from North India and different parts of Delhi since 2018 to 2022 data was taken. . Prevalence of Blindness in North India was 0.09% while prevalence of visual impairment was 1.85% the most common cause of impaired vision were Corneal Opacity, Glaucoma, Cataract, Retinopathy and Studies related to barriers faced by visually impaired school students were taken globally. These regions include United States, Middle East, India these studies were taken from 2021-2022.Lack of training, Lack of knowledge, Lack of awareness and non availability of devices, Lack of interest and motivation, increased workload and manpower were the main obstacles seen in visually impaired patients for low vision rehabilitation n various studies. Some of the other hurdles that were observed were poor physical health (67%), poor mental health (76%). The perception of lack of awareness and knowledge was significantly seen higher in many studies. It

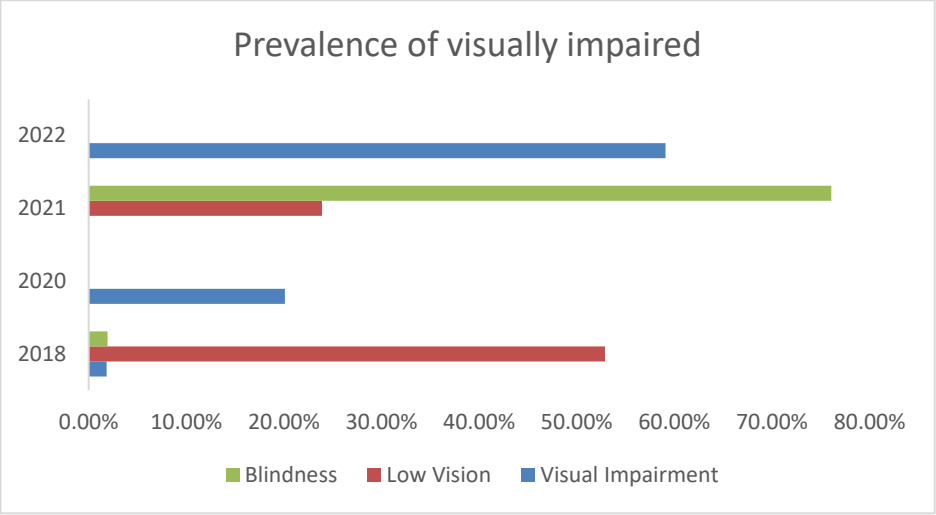


Figure1: Prevalence of visually impaired school students since 2018-2022

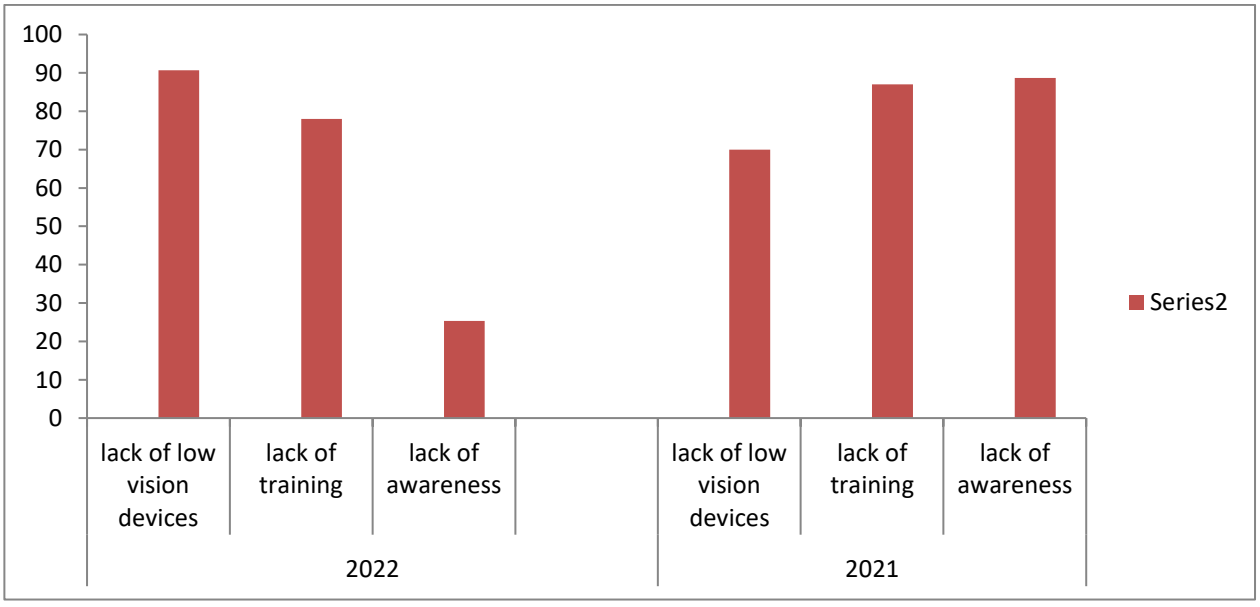


Figure2: Barriers faced by visually impaired school students since 2021-2022

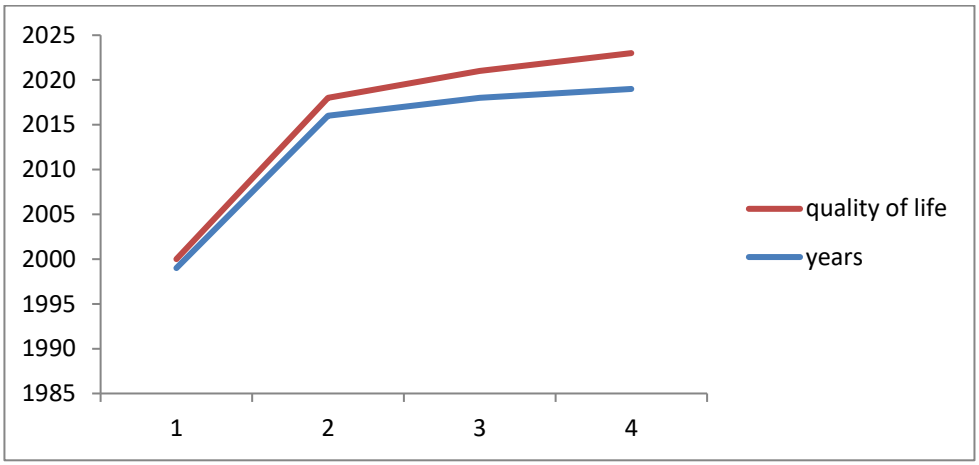


Figure3: Quality of life of visually impaired school students after the use of low vision devices

CONCLUSION

The present review article concludes that there is a need of low vision rehabilitation among visually impaired school student. Prevalence of visual impairment is rising every year globally. There are numerous challenges that visually challenged children must overcome, which lowers their quality of life, so need of low vision

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