

Intersections of Visual Impairment and Mental Health: Exploring Factors, Onset, and Implications

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Abstract: The results of 37 studies comparing the psychological health of people with visual impairments to unimpaired control groups or populations are included in this overview of the literature. Individuals with visual impairments typically show a marked reduction in psychological well-being related to their vision. The decrease in metrics unrelated to eyesight, however, was not very significant. Additionally, because of the difficulties and restrictions related to their condition, people with visual impairment also frequently have worse psychological health and are more vulnerable to mental diseases including anxiety and depression. This review emphasizes the importance of acknowledging and addressing the psychological well-being of visually impaired individuals, providing valuable insights for future research, interventions, and support systems aimed at improving their overall mental health and well-being.

Keywords: visual impairment, depression, anxiety, quality of life, psychological health

1. Introduction

Visual impairment is a significant medical condition characterized by a severe reduction in vision that cannot be corrected to a normal level using standard glasses or contact lenses. [1] It encompasses a broad spectrum of visual disabilities, including partial or total blindness, low vision, and varying degrees of visual impairments. The global prevalence of visual impairment is alarmingly high, with the World Health Organization (WHO) estimating that at least 2.2 billion people are affected by this condition. Shockingly, nearly half of these cases could have been prevented or effectively treated. [2] Visual impairments have wide-ranging effects beyond the economic costs they impose. In addition to having a large financial cost, blindness and vision loss have a major negative influence on social relationships, quality of life, and educational opportunities. Furthermore, individuals with visual impairments are at a higher risk of experiencing mental illnesses, including depression and anxiety. Unfortunately, people often fail to recognize the psychological well-being of vision loss, with the focus primarily on the physical disability. The purpose of this review is to investigate the frequency and factors that contribute to visual impairment, as well as the psychological disorders that are frequently observed among individuals with this condition. By shedding light on these important aspects, we can foster a better understanding of the holistic challenges faced by individuals with visual impairments and inform strategies for their comprehensive care and support.

2. Risk factors related to visual impairment

Numerous non-physical variables influence the prevalence of vision impairment. Insufficient resource allocation raises the rate of visual impairment in low-income nations, both in absolute terms (total health expenditure per capita) and relative terms (total health expenditure/GDP) [3]. Poor educational attainment is also linked to visual problems. A study in Canada found that a majority of individuals with uncorrected vision problems or blindness had secondary school education or less [4]. This can be attributed to the challenges visually impaired individuals face in accessing specialized educational support. Schools require trained educators who understand their unique needs and can provide necessary learning opportunities. Specialized instruction, such as orientation and mobility training, is essential for visually impaired individuals to develop skills for independent living. However, accessing appropriate equipment, such as braille materials and accommodations, remains a significant obstacle in most schools.

Social class is another factor influencing the risk of visual impairment. In Britain, higher social class grades were associated with lower rates of poor vision. Additionally, social class has been found to be a contributing factor in the risk of visual impairment. In the British context, social class is classified on a scale from I to V. Each increase in social class grade is associated with a 28% increased risk of experiencing poor vision. The prevalence of visual impairment is 1.9% among individuals in social class I (professional) and 5% among those in social class V (unskilled manual workers) [5]. Limited healthcare access and exposure to unsafe working conditions among lower social classes can further contribute to the worsening of visual impairment.

Gender has also been identified as a factor related to the risk of vision loss. Multiple studies have shown a higher prevalence of visual impairment among women compared to men, even after controlling for other variables such as age [6][7][8][9]. The odds of visual impairment after adjustment for age were 28.3% greater for females than for males, and this predominance was observed in each racial/ethnic group. [10] One potential reason for this correlation is the disparity in life expectancy between men and women. As women generally live longer than men, they may experience a higher incidence of eye diseases that are more common in older age. Consequently, women may bear a greater burden of visual impairment and blindness [7].

Certain demographic factors have been associated with an increased risk of vision impairment. A study examining visual impairment in different ethnic groups found that Chinese individuals had a significantly higher likelihood of visual impairment compared to Hispanic, Black, and White individuals, even after adjusting for age and sex [10]. In the American urban population, the rate of blindness was found to be twice as high in Blacks compared to Whites [11]. Studies conducted in the US, however, have shown conflicting findings about the substantial disparities in visual impairment between ethnic or racial minorities and Caucasian populations, especially when socioeconomic factors were not regularly taken into account [7].

Visual impairment is closely associated with age, and the rates of blindness tend to increase significantly in later stages of life, particularly after the age of 60. A study revealed a substantial rise in rates of blindness and visual impairment with advancing age among both white and black individuals [11]. Age-related macular degeneration (AMD) is the primary cause of blindness among Europeans, contributing to over 60% of all cases of blindness in Australia [12][13]. People 75 years of age and older saw a significant increase in the prevalence of blindness and visual impairment, with AMD being especially common in this age range [14]. AMD specifically targets the macula, which is a small, central area of the retina that is responsible for providing clear and sharp vision in the center of the visual field. Deterioration of the macula can have a detrimental impact on vision. Among the elderly population, eye diseases can also be a leading cause of blindness. For instance, ischemic

optic neuropathy can result in blindness by damaging the optic nerve, which transmits visual information from the eye to the brain [15].

3. Visual Impairment and Depression

The most prevalent type of mood disorder is depressive disorder, which is characterized by “persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities” [16]. Extensive literature suggests that visually impaired people are at a higher risk for mental health problems. Vision disability prevents people from normal social activities, so people with this illness often have low self-esteem. They have fewer opportunities to socialize with others and make friends, consequently, they will encounter social isolation. The disability and social sideline have a significant effect on their mental health, especially on depression. In particular, several studies show a correlation between vision impairment and depression. Although visual impairment is not fatal, daily or social activities and the quality of life can be influenced by it. There was a gradient of lower HRQOL (Health-related quality of life) scores with increasing severity of VI for Driving Difficulties, Distance Vision, Near Vision, Vision-Related Dependency, Vision-Related Social Function, and NEI VFQ-25 (National Eye Institute Visual Function Questionnaire) composite scales [17]. Numerous studies have consistently demonstrated that visually impaired children and adolescents experience greater emotional difficulties compared to their peers with normal vision. In a study conducted by Koenes and Karshmer, it was found that the prevalence of depression is higher among blind teenagers compared to sighted teenagers. In addition, compared to their sighted peers, blind children showed higher levels of depression. The Beck Depression Inventory (BDI) was used in the study to quantify depression; the visually impaired group's mean BDI score was 13.652, whereas the sighted group's mean score was 7.103. Higher BDI scores indicate a greater severity of depression [18]. Konarska also shows that youths in the blind score higher on helplessness and depression than nondisabled group. Compared to the nonimpaired group, the visually disabled group was more likely to develop depression due to the sense of their sense of inefficiency at work or home [19]. Studies with a majority of patients 65 years of age or older reveal that depression affects approximately 25% of people with visual impairment. Depression was shown to be more prevalent in clinical services than in rehabilitation services, which may have been caused by patients' initial shock at having an irreversible disability [20]. Among adult members of the Norwegian Association of the Blind and Partially Sighted (18 years of age and older), the prevalence of serious depression ranged from 4.2% to 15.6% depending on the age category. Among women, the prevalence ranged from 5.6% to 17.8%, while among men, it varied from 2.4% to 12.9%. The study also found that the prevalence of other forms of depression ranged from 4.0% to 6.2%, with slightly higher rates among women (ranging from 3.8% to 5.6%) compared to men (ranging from 3.5% to 7.1%). Overall, the prevalence of any form of depression ranged from 10.3% to 19.9%, with higher rates among women (ranging from 11.1% to 22.8%) compared to men (ranging from 9.4% to 16.5%) [21]. A study focusing on adults with low vision or blindness (visual acuity worse than 20/60) found that these individuals were 2.82 times more likely to experience depressive symptoms compared to participants with normal or near-normal vision. The prevalence of depressive symptoms was reported as 45.2% among those with low vision or blindness, while it was 16.6% among participants with normal or near-normal vision [22]. In addition, data from a community-based study of 70-75 years of age from Italy indicates that subjects with visual impairment were 2.11 times more likely to have depression than those non-impaired peers after adjusting for other variables [23]. A survey that employed the Hospital Anxiety and Depression Scale (HADS) together with three other self-rated instruments revealed that the overall rate of severe depression was 3.9% (13/336) and the prevalence rate for definite clinical depression was 17.9% (60/336) [24]. In a national survey of US adults, the estimated prevalence of depression was higher among visually impaired adults aged ≥ 20 years (visual acuity $< 20/40$ in the better eye) than among

adults with normal visual acuity (10.7% vs. 6.8%) [25]. Contrary to the majority of studies, some research challenges the notion that there is a significant difference in depression based on visual impairment. One study suggests that the frequency of distress and depression symptoms is nearly equal between visually impaired individuals and those with normal sight. Similar to this, a different study shows that young people with visual impairments experience similar levels of anxiety and despair as children without visual impairments. These findings indicate that there may be conflicting evidence regarding the relationship between visual impairment and depression, and further research is needed to better understand this complex issue [26]. Beaty discovered that there were no significant disparities in psychosocial adjustment between visually impaired and sighted college students [27]. Similarly, Pierce and Wardle indicated that there were no discernible distinctions in the self-esteem levels of blind children compared to sighted children [28]. It is worth noting that higher rates of depressive symptoms have been observed across various age groups. In one study, older adolescents showed more emotional problems due to puberty and increasing stressors [26]. Adults with visual impairment tend to experience a significant decline in physical well-being, which can be attributed to various psychological problems. This decline may be influenced by challenges faced in the labor market, as well as difficulties in accomplishing age-related tasks such as establishing a family. The effects of visual impairment on one's physical and mental health emphasize the necessity of providing suitable resources and assistance to address the particular difficulties that impaired people encounter in a variety of spheres of their existence [29].

In addition, studies have shown gender differences in the prevalence of depression among individuals with visual impairment. Boys with visual impairment showed lower levels of depression symptoms, less emotional discomfort, and stronger self-esteem than girls, according to a study by Huurre and Aro. Girls with visual impairment often exhibit lower self-esteem, poorer school performance, and fewer social skills compared to their peers without visual impairment [30]. Another study conducted by Garaigordobil and Bernarás in 2009 found that girls with severe visual loss had significantly higher scores on measures of overall psychological symptoms, including depression, anxiety, hostility, and obsessive-compulsive behaviors, in comparison to their sighted peers. In a similar vein, research by Pinquart and Pfeiffer showed that visually handicapped female teenagers were more likely than their male peers to experience psychological issues [31]. Hurre et al. also discovered that girls with visual impairment faced a higher risk of depression compared to girls with normal vision [26].

4. Anxiety

While fewer studies have specifically examined the correlation between anxiety and visual impairment, there is some evidence indicating its prevalence. According to Penninx et al., anxiety disorders are characterized by "excessive fear and anxiety or avoidance of perceived threats that are persistent and impairing." [32] Unlike fear which is often focused on present threats, anxiety is typically more future-oriented tension. Anxiety is also a leading mental illness in visually impaired groups. A study indicates that individuals with visual impairment experience higher levels of anxiety compared to those without visual impairment. Furthermore, it is estimated that approximately one-third of visually impaired individuals face depression and/or anxiety, whereas the prevalence of diagnosed anxiety disorders in the general population is around 4-6%. The study's data reveals that 15.6% of individuals with visual impairment exhibited symptoms of anxiety, whereas the percentage was 10.7% among individuals without disabilities [33]. A survey conducted in a blind school using the Depression, Anxiety, and Stress Scale (DASS-21) revealed that visually impaired adolescents scored significantly higher than their sighted peers, and a high score means a high level of depression, anxiety, and stress. The mean score of anxiety among adolescents with visual impairment was 15.06 ± 2.87 , whereas the mean score for sighted adolescents was 6.20 ± 5.52 . Caution should be

exercised when interpreting these findings due to the study's limited scope. The study's findings should be interpreted with caution as the participants were solely drawn from one school, which may limit the generalizability of the results to the wider population of visually impaired adolescents. To establish a more comprehensive understanding of the link between visual impairment and anxiety in this age group, further research with larger and more diverse samples is required [34]. According to Stelter [35], people with vision disabilities may suffer from various perspectives including physical, emotional, social, and spiritual suffering, which is so-called total suffering. Blind individuals may face physical challenges and limitations related to their visual impairment. They might encounter difficulties in navigating their environment, performing daily tasks, or participating in certain activities. They may also experience physical discomfort that related to their vision loss like headache or strain in nerves near their eyes. The loss of vision can lead to frustration and grief, which lead to emotional suffering. Blind individuals may even experience a sense of loss and social isolation due to their inconvenience in daily activities, such as being dependent on others, limited access to information, and reduced mobility. Spiritual suffering refers to the existential or soul-level distress that individuals may experience. Individuals may grapple with questions of purpose, identity, and the meaning of their life with disabled conditions. They may also face spiritual challenges related to their faith, beliefs, or the search for inner peace and connection. According to the results obtained from the Trait Anxiety Inventory for Children, the mean trait anxiety score among adolescents with visual impairment was found to be 36.18 ± 6.11 . In comparison, the mean trait anxiety score among sighted adolescents was 33.33 ± 6.65 . These findings indicate that the anxiety scores of adolescents with visual impairment were significantly higher than those of sighted adolescents [36]. Visually impaired children with delayed motor and social skills due to inadequate early and comprehensive experiences may contribute to insufficient autonomy and socialization.

5. Other psychological problems

The visually impaired population faces an increased risk of suicide, as evidenced by research findings. A study focusing on individuals aged 50 and above found that severe visual impairment was significantly associated with suicidal ideation. Compared to people without visual impairment, those with severe visual impairment had a 9.50-fold higher risk of having suicidal thoughts. The risks of attempting suicide were shown to be higher for both moderate and severe visual impairment, with moderate impairment linked to 2.22 times higher odds and severe impairment linked to 11.5 times higher odds [37]. Additionally, a meta-analysis showed a strong correlation between suicidal ideation and visual impairment, with those with additional sensory impairment having a higher risk of suicidal ideation than those with visual impairment alone [38]. Suicide attempts among visually impaired individuals often stem from their struggles with existing mental disorders and the desire to end their suffering. Many emotional and psychological problems, including social isolation, anxiety, sadness, and hopelessness, can be exacerbated by visual impairment. These factors, combined with individual circumstances and experiences, increase vulnerability to suicidal thoughts and actions. Recognizing and addressing the mental health needs of individuals with severe visual impairment is crucial to prevent and intervene in cases of suicidal ideation. This involves providing psychological counseling, access to mental health services, social support networks, and promoting a sense of purpose and belonging within their communities.

Interestingly, hallucinations are relatively common in individuals with acquired vision loss. When the brain lacks visual input, it may generate images or sensations that are not based on external stimuli. Studies have shown that approximately 12.8% of visually impaired individuals report experiencing hallucinations, with 63% reporting complex hallucinations [39][40]. In contrast, none of the subjects in the control group experienced hallucinations. When compared to people with normal eyesight, the prevalence of hallucinations was noticeably higher in the visually handicapped. Specifically, visually

impaired individuals may experience a phenomenon called Charles Bonnet Syndrome (CBS), characterized by well-defined, organized, and clear images over which the individual has limited control [39]. The prevalence of CBS varies across studies, ranging from 7.2% to 15.8% [41][42]. According to reports, as much as 63% of people with significant visual impairment (visual acuity lower than 6/60 in the better eye) have CBS [39]. These findings demonstrate that acquired visual impairment can lead to the development of complex hallucinations.

6. Visual Impairment Onset

A study found a possible correlation between the severity of mental health problems and the commencement of visual loss [43]. The study measured vision-related quality of life (VR-QoL) using the National Eye Institute Visual Function Questionnaire (NEI VFQ-25), and it measured mental health using the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI).

While there were no significant differences in the NEI VFQ-25 scores between the group with acquired vision loss (ALV) and the group with congenital or lifelong vision loss (CLV), it is important to note that the scores were generally lower in the ALV group. However, significant differences were observed in the BDI and BAI scores. The ALV group had significantly higher scores on both measures compared to the CLV group. This implies that symptoms of anxiety and despair are more common in people who have suffered vision loss. Additionally, a higher proportion of patients in the ALV group (30%) presented a depressive state that required expert consultation, which was significantly higher than the CLV group. This indicates that individuals with acquired vision loss may be at a greater risk of developing severe mental illnesses like depression. The study suggests that patients with acquired vision loss often face psychological responses such as denial and depression during the initial stages of the condition. Adjusting to the significant life changes brought about by vision loss may take a considerable amount of time, potentially leading to the development of mental health issues.

7. Conclusion

Visual impairment has profound effects on individuals and society as a whole. People with visual impairments frequently encounter high rates of physical comorbidities, in addition to facing increased vulnerability to poor mental health outcomes. It is worth noting that a large portion of vision impairment, approximately 80%, is preventable through the use of current technology [44]. While some age-related conditions leading to blindness are currently irreversible, many impairments can be corrected or prevented by improving attention to eye health. Promoting eye health can potentially mitigate the risk of developing mental health issues. Nevertheless, it is vital to enhance mental health screening, expand access to effective treatments, and provide proper training for mental health professionals to enhance their understanding of the psychological consequences of visual impairment. These actions are crucial in ensuring comprehensive care and support for individuals with visual impairments.

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