▪ Vol. VIII, No. I (Winter 2023) ▪ p- ISSN: 2708-2091 ▪ e-ISSN: 2708-3586 ▪ L-ISSN: 2708-2091
▪ Citation: Khalid, A., Ahmad, F., & Anis, F. (2023). Challenges in Accessibility: Exam Preparation for Students with Low Vision in Pakistan. *Global Sociological Review, VIII* (I), 350-358. https://doi.org/10.31703/gsr.2023(VIII-I).35

Challenges in Accessibility: Exam Preparation for Students with Low Vision in Pakistan

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Pages: 350 – 358 **DOI:** 10.31703/gsr.2023(VIII-I).35 **URL:** http://dx.doi.org/10.31703/gsr.2023(VIII-I).35

Abstract: *Students with low vision in Pakistan face barriers to accessing accommodations and preparing for exams due to inaccessible learning materials, lack of supportive services, and inadequate school infrastructure. Interviews with 15 students in Lahore revealed inaccessibility to large print books, assistive tech, and other accommodations inhibited learning and exam prep. Students also noted a lack of services like accessible transportation and signage, and teaching methods that fail to accommodate low vision. Moreover, negative attitudes and policies created barriers. The inaccessible environment made exam preparation difficult compared to sighted peers. Significant gaps exist in meeting the needs of students with low vision in Pakistan. Recommendations aim to improve accessibility and inclusion for exam preparation.*

Key Words: Low Vision, Visual Impairment, Exam Accommodations, Accessibility, Pakistan

Introduction

Receiving a quality education is essential for all students to reach their full potential (Shields & Mohan, 2008). However, students with disabilities frequently encounter barriers that impede their learning and academic performance (Iqbal & Muhammad, 2020). One such group is students with low vision, who have some functional vision but difficulty in clearly seeing standard print materials without accommodations (Anne L. Corn & Bell, 2003). Students with low vision require interventions like large print text, assistive technologies, and other supports to access the curriculum and demonstrate their knowledge and abilities (Khalid, Muhammad, & Masood, 2021).

In inclusive educational settings, exams are a major way by which students are evaluated, and academic progress is measured (Iqbal & Muhammad, 2020; Khalid, 2020; Tahira, Muhammad, & Masood, 2020). Thus, having proper accommodations for exam taking is imperative for students with low vision to show what they have learned (Khalid, 2020). However, significant gaps remain in many countries regarding the provision of accessible exam materials and processes for students with disabilities (Shah et al., 2008). Developing countries in particular face challenges in implementing inclusive assessment policies and practices.

Pakistan is an example of a country that has made strides towards educational inclusion but still has major shortcomings in supporting students with disabilities (Graham, 2020; Gul, 2020). Studies have found an overall lack of accessibility, resources, and accommodations for disabled students in Pakistan's education system (Amjad & Muhammad, 2019; Iqbal & Muhammad, 2020; Mberimana, 2018). But very little research has focused specifically on the experiences of students with low vision in preparing for exams (Khalid, Fazil, Amanat, Rasool, Nawaz, & Iqbal, 2023). Developing an in-depth understanding of the barriers these students face can inform efforts to improve accessibility and equity in assessment (Khalid, Muhammad, & Masood, 2021).

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This paper will help fill this knowledge gap by exploring the exam preparation challenges faced by students with low vision in Pakistan. A qualitative case study was conducted to identify accessibility issues and other obstacles these students encounter. Semi-structured interviews examined students' perspectives on the lack of accommodations, school infrastructure barriers, and other impediments to performing well on exams. Findings provided insight into creating more inclusive environments that enable students with low vision to fully engage in the exam process.

Background and Literature Review

Low Vision in Education

The World Health Organization (2018) estimates that globally over 1.3 billion people live with some form of vision impairment. Low vision is defined as an impairment of visual functioning that cannot be corrected by standard eyeglasses, contact lenses, medication or surgery and interferes with everyday functioning (Bittner, Yoshinaga, Rittiphairoj, & Li, 2020; Anne Lesley Corn & Erin, 2010). Individuals with low vision have decreased visual acuity between 20/70 and 20/400 and require accommodations to engage in daily life activities.

There is limited research on the impact of low vision specifically on educational experiences and outcomes. However, evidence indicates that visual impairments can negatively impact students' academic performance, literacy, concept development, and educational attainment. Students with low vision may face difficulties accessing learning materials in standard print, fully participating in classroom activities, and demonstrating knowledge on visual-heavy assessments.

To enable students with low vision to reach their academic potential, accommodations and modifications to content, materials, and activities are essential. Recommended interventions include preferential seating, large print, braille materials, extended time, audio recordings of textbooks, screen magnification software, tactile graphics, and other assistive technologies (Anne L. Corn & Bell, 2003). With proper support in place, students with low vision can actively engage in learning and be assessed equitably.

Barriers to Inclusive Education in Pakistan

In recent decades Pakistan has taken steps to promote inclusion and provide accommodations for students with disabilities. The National Policy for Persons with Disabilities passed in 2002 prohibits discrimination and mandates free primary and secondary education for children with disabilities (Government of Pakistan, 2006). The Right to Free and Compulsory Education Act passed in 2012 further upholds inclusive education rights, requiring schools to provide disabled-friendly environments, teaching aides, and learning materials in accessible formats.

However, major gaps remain in policy implementation and the availability of inclusive education accommodations. Structural barriers include inaccessible facilities, large class sizes, limited teacher training in accommodating needs, and a lack of early identification and intervention services (Ullah, Ajmal, Ullah, & Ali, 2019). Negative societal attitudes towards disability also impede inclusion. Many schools remain inadequately equipped, underfunded, and struggle to meet the requirements outlined in national policies.

These systemic barriers contribute to shockingly low enrolment and literacy rates for children with disabilities in Pakistan. Estimates suggest only 2-3% of disabled children access education and just 10% of people with disabilities over age 10 are literate. Students with LV in particular lack accommodations like braille materials, large print textbooks, audio recordings, and assistive devices that enable learning. Ensuring truly inclusive, accessible education remains an immense challenge.

The Gap in Research on Exam Accommodations

While progress has occurred, Pakistan's education system still does not adequately facilitate inclusion and accommodate diverse learning needs. However, very minimal research has specifically examined the experience of students with LV navigating exams and assessments. Only two studies were identified that explored accommodations for blind and low-vision students taking exams in Pakistan (Khan & Jay, 2008; Shah et al., 2008). Both found extremely limited accommodations offered, but neither examined students' own perspectives and the barriers they face during exams.

Understanding these lived experiences is vital to identifying challenges and improving policy and practice related to accessible test administration. As Lindsay et al. (2018) emphasized, "input of students

with disabilities is central to developing more equitable assessment and effective accommodations" (p. 203). Giving voice to students provides crucial insights that can enhance inclusion. This study aimed to help address this critical gap by exploring in depth the exam preparation and accommodation experiences of secondary school students with LV in Pakistan. Uncovering the barriers and facilitators they encounter can inform efforts to make assessments truly inclusive and accessible.

Theoretical Framework

This study is guided by a framework of inclusive education and informed by social model and critical disability theory perspectives (Graham, 2020). Inclusive education upholds that all students have the right to equitable, quality education that meets their diverse needs (Kamenopoulou, 2018a). It requires identifying and removing barriers in schools that exclude and marginalize (Ainscow et al., 2012). From inclusive values, education systems must be designed to accommodate each learner, regardless of disability or other differences (Aslam, Muhammad, & Nasir, 2022; Rajpoot, Muhammad, & Anis, 2021).

The social model and critical disability theory provide lenses to understand how ableist societal structures and attitudes obstruct inclusion (Kamenopoulou, 2018b). The social model posits that people are disabled not by bodily impairments, but by inaccessible physical and social environments that create disadvantages (Anastasiou & Kauffman, 2013). Critical disability theory extends this view through its focus on disability as a social construction and form of oppression perpetuated through cultural norms and systemic barriers (Armstrong, Armstrong, & Spandagou, 2010; Hosking, 2008). From these perspectives, inequity experienced by disabled students stems from a lack of accessibility and exclusionary societal views, not individual deficits. The onus is thus on schools and society to dismantle barriers to inclusion (Dovigo, 2017; Tomlinson & Imbeau, 2010).

This theoretical grounding informed the research design. Semi-structured interviews allowed centring students' voices to understand how societal and systemic barriers manifest in their exam experiences (Dovigo, 2017; Downing, 2010; Graham, 2020). Questions prompted reflection on the accessibility of materials, attitudes encountered, school policy and infrastructure, and other impediments constructed by the environment rather than students' vision impairment itself (Dovigo, 2017; Downing, 2010; Graham, 2020). Capturing these experiences provides insight into transforming assessment and education to be more equitable and inclusive for students with LV.

Methods

A hermeneutic phenomenological design was used for this study to understand the lived experiences of students with LV in preparing for exams (Vagle, 2018; Van Manen, 1990). Phenomenology seeks to understand the fundamental nature of a phenomenon by examining the first-hand experiences and perspectives of those who have encountered it (Anjum, Muhammad, & Rauf, 2021; Neubauer, Witkop, & Varpio, 2019; Van Manen, 2023). Hermeneutic phenomenology focuses on interpreting the meanings embedded in human experiences (Kafle, 2013; Marshall, Rossman, & Blanco, 2022). This approach was fitting to gain insights into the challenges students faced in accessing exam accommodations.

Participants

Fifteen students with LV (8 females and 7 males) enrolled in grades 8-12 at schools or colleges in Lahore, Pakistan participated in the study. Purposive criterion sampling (Silverman, 2018) was used to recruit participants who: 1) had low vision, 2) were willing to participate, 3) were 15-25 years old, 4) had visual acuity between 20/40-20/400, 5) could see large objects, and 6) had potential to use low vision devices. This sampling ensured participants could provide in-depth perspectives about navigating education with low vision (Campbell et al., 2020).

Data Collection

Data was collected through semi-structured interviews lasting 30-45 minutes (Edwards & Holland, 2023). The interviews involved open-ended questions about participants' experiences preparing for exams (Small & Calarco, 2022). Questions covered challenges faced, accessibility of learning materials, classroom accommodations, attitudes of others, and recommendations for improvement. Follow-up probes were used to elicit deeper reflections (Brinkmann & Kvale, 2018; Flick, 2021). Interviews

were audio recorded and transcribed verbatim (Brinkmann & Kvale, 2015). Field notes were also taken during the interviews (Brinkmann, 2013).

Data Analysis

Data was analysed using thematic analysis techniques (Flick, 2021; King, Brooks, & Tabari, 2017). Transcripts were read multiple times to gain immersion and get a sense of the whole (Edwards & Holland, 2023). Next, significant statements related to the exam experience were extracted. Statements were analysed using open coding to identify categorical themes (Saldaña, 2021). Themes were refined and connections between themes were interpreted to understand the essence of participants' experiences. The analysis aimed to develop a rich description of the exam preparation phenomenon (Newby, 2014).

Trustworthiness

Credibility was established through member checking of interview transcripts and peer examination of the data analysis (Mills & Jordan, 2022). The researcher also maintained a reflexive journal during the study to examine personal biases (Creswell & Creswell, 2022). A rich description of participants' experiences is provided to allow readers to evaluate transferability (Silverman, 2018). All study processes were thoroughly documented to create a clear audit trail (Tracy, 2020). These strategies ensured the rigour of the hermeneutic phenomenological approach (Merriam & Grenier, 2019).

Ethical Considerations

Institutional approval was obtained prior to conducting the study (Silverman, 2018). Informed written consent was provided by all participants (Creswell & Poth, 2018). Confidentiality was maintained by using pseudonyms and securely storing data (Cohen, Manion, & Morrison, 2018). Participants were informed they could end their participation at any time without consequence (Miles, Huberman, & Saldaña, 2020). All potential risks were minimized to ensure the welfare of participants (Creswell & Poth, 2018; Saleem, Muhammad, & Qureshi, 2023).

Findings

The analysis revealed three major themes related to challenges faced by students with LV in preparing for exams: 1) Inaccessibility of learning materials, 2) Lack of supportive services, and 3) Problems with school infrastructure and policies.

Inaccessibility of Learning Materials

Most of the participants described having extremely limited access to accommodate learning materials, which made studying and test preparation difficult. As Maryam, a 15-year-old female, explained: "Provisions of services in classrooms for exam preparation are not enough. There is a need to provide more support and facilities."

Likewise, a 17-year-old male student named Hassan shared: "I am not provided with assistive technology. In the absence of assistive technology, I would like to prepare my exam orally."

Without accessible versions of textbooks, worksheets, and other learning resources, many students struggled to prepare adequately for exams. They emphasized the critical need for materials in formats like braille, large print, and audio recordings to have equal access to content.

Lack of Supportive Services

In conjunction with lacking accommodated materials, most of the students also described a significant absence of support services to aid their learning and exam preparation process. For instance, 14-year-old Haifa stated: "Educational resources and support services must be made available to learners."

Services that participants identified as needing improvement included assessment of needs, assistive technology training, accessible transportation, adapted teaching methods, and modality accommodations for test taking. The shortage of these support services prevented them from displaying their full academic capabilities on exams.

Problems with School Infrastructure and Policies

Participants frequently discussed how inaccessible school buildings and inadequate policies hindered their participation and success. For example, 15-year-old Maryam shared: "I am not satisfied with the school environment. Schools should improve the physical environment."

Inadequate classroom lighting, distracting noise, lack of braille signage, and insufficient accommodations

policies were commonly cited barriers. Bullying and stigma surrounding disability also made school environments unsupportive. These infrastructure and policy issues compounded the challenges of exam preparation for students with LV.

Overall, the shortage of accommodated learning materials, supportive services, and accessible school infrastructure greatly obstructed students' ability to prepare for exams on equal footing with sighted peers. Targeted improvements in these areas are imperative for promoting more inclusive educational experiences.

Discussion

The findings from this hermeneutic phenomenological study provided valuable insights into the lived experiences of students with LV preparing for exams in Pakistan. Three major themes were constructed from the data analysis, including a lack of accessible learning materials, insufficient supportive services, and problems with school infrastructure and policies. Participants faced significant barriers in all these areas that hindered their ability to adequately prepare for and perform well in exams.

The challenges described by participants align with prior research on obstacles faced by students with other disabilities in educational settings. Studies from around the globe have found that inaccessible learning environments, negative attitudes, and lack of accommodations prevent students with disabilities from reaching their academic potential (Hill, 1996; Nichols & Quaye, 2009; Toutain, 2019). The current study confirmed and expanded upon these issues for the specific experience of students with LV attempting to prepare for exams.

Inaccessibility of Learning Materials

The profound lack of accommodated textbooks, notes, assignments, and other learning content was a predominant struggle discussed by participants. These findings corroborate literature demonstrating that lack of accessible materials is a primary barrier faced by students with print disabilities in school (Abrahamson, 2006). Without properly formatted materials, students with LV are denied equal access to the content needed to succeed in exams. As one participant in this study poignantly said, “How do you expect me to answer questions about topics I can barely study?” This inequity clearly violates basic principles of fairness and social justice in assessment.

Schools’ failure to provide accessible learning materials also violates national laws like the UN Convention on the Rights of Persons with Disabilities, which upholds rights to inclusive education. However, research in Pakistan shows a consistent lack of implementation and monitoring of such disability laws (Khalid et al., 2023; Singal, 2016). Stronger enforcement is greatly needed to ensure that schools adapt their instructional materials. Proactive efforts must also be made to promote awareness and capacity for inclusion among educators. Changing attitudes is key because negative societal views of disability often underlie accessibility issues (Esmail, Darry, Walter, & Knupp, 2010). Improved training and support for teachers can help foster positive perspectives on accommodating diverse learning needs.

Lack of Support Services

In conjunction with limited learning materials, participants emphasized the lack of accommodations and support services at their schools. From assessment of needs to assistive technology training to test-taking modifications, participants had little access to the accommodations that research shows are essential for the academic success of students with LV. For example, participants frequently cited the utility of screen readers for accessing material when large print or magnifiers were insufficient. However, only one participant reported having access to this beneficial technology. The shortage of accommodations like this significantly impedes students' learning and exam performance.

Expanding access to supportive accommodations requires addressing funding limitations that restrict schools’ purchasing of expensive assistive technologies. Greater budget allocations specifically for procuring accommodations resources are warranted. Accommodations must also be selected thoughtfully based on evidence and input from students with vision impairments. Moreover, teachers need training in how to effectively apply accommodations in the classroom and during exams. As shared by Anderson (2007), technology alone does not guarantee successful accommodation; skilled implementation is critical. Without knowledge of how best to leverage accommodations to mitigate disability and maximize

learning, schools will continue to struggle to meet students' needs.

Problems with Infrastructure and Policies

In describing their exam preparation experiences, it was clear that inaccessible school buildings and inadequate policies worsened the challenges students faced. Participants frequently shared how features of their school's physical environment like poor lighting, distracting noises, and lack of braille signage hindered their learning. Such obstacles in the learning environment align with literature demonstrating that inaccessible facilities marginalize students with disabilities (Christensen et al., 2011). Proactively designing facilities and spaces with accessibility in mind is imperative. Simple steps like installing braille and tactile signage, enhancing lighting and acoustics, and rearranging furniture to avoid obstacles can go a long way in creating a more inclusive physical environment for test-taking (Byrant et al., 2013).

Along with inaccessible infrastructure, participants cited detrimental school policies and attitudes surrounding disability. From lack of accommodations protocols to stigma and bullying, unsupportive policies made participants feel excluded. Research confirms that school climates can have a profound impact on the inclusion and achievement of students with disabilities (McMaster, 2013). Fostering positive school cultures requires establishing clear policies, procedures, and accountability mechanisms to ensure students' accommodation needs are met (Lalvani, 2013). Promoting awareness and acceptance of disability throughout the school community is also beneficial. As Leyser et al. (2011) discussed, educators' training, peer support programs, inclusive activities, and disability representation are examples of strategies schools can employ to nurture welcoming and understanding school cultures. Making policy and climate changes like these are imperative steps for schools to become more supportive and accessible.

Limitations

This study had several limitations to acknowledge. The small sample size of 15 students from one geographic region limits the generalizability of the findings (Creswell & Poth, 2018). A larger, more diverse sample could provide greater insight into the exam experience for students with LV. Participants were also recruited from schools in urban areas; students in rural Pakistan may face additional barriers not identified. All data came from student interviews; incorporating perspectives from teachers, parents, and school administrators could allow for a richer understanding. Future research that addresses these limitations could build upon the findings.

Conclusion

This study gave voice to the exam preparation experiences of students with LV in Pakistan. The challenges highlighted by participants - lack of accommodated learning materials, insufficient support services, and accessibility barriers in school infrastructure and policies - revealed major gaps that need to be addressed. Each theme has implications for how schools and educators can take action to better support students with LV during exam preparation and create more inclusive assessment environments. With improved accessibility and support, students with LV have immense potential to demonstrate their knowledge, skills, and capabilities for learning - if given the proper accommodations. These findings took an important step toward informing changes in policy and practice that uphold the fundamental right to education for all students, regardless of disability.

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