



RESEARCH PAPER

Challenges encountered by Students With Visual Impairment in Accessing Orientation and Mobility Training

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ABSTRACT

This study focused on comparing challenges in orientation and mobility encountered by students with visual impairment in accessing training on the basis of gender, age, Onset of disability, educational level and type of visual impairment. Orientation and mobility training helps visually impaired individuals to explore their environment easily. But encountered challenges in comprehensive orientation and mobility training reduce independence and social inclusion of visually impaired students. By understanding the challenges faced by visually impaired students new and better policies can be developed and more better training sessions regarding trainings can be arranged for visually impaired students. Data was collected from 104 students with visual impairment from Lahore, Pakistan through questionnaire approach. And the self developed questionnaire consists of 20 items. Statistical analysis was conducted through Statistical Package for Social Sciences (SPSS) including t test and ANOVA and the results showed significant differences in orientation and mobility challenges faced by visually impaired students on the basis of gender, age, Onset of disability, Educational level and type of visual impairment. Findings of this study emphasize on the importance of orientation and mobility training programs to identify special needs of visually impaired students and maximize social inclusion and independence. Recommendations include providing qualified orientation and mobility professionals, training and independence to visually impaired students.

Keywords: Mobility, Orientation, Visual Impairment

Introduction

The sense of vision provides an opportunity to explore and observe the surroundings before newborns begin to move. Sighted children are able to notice the objects in their surroundings and people's motions. Babies with visual impairment did not have the opportunity to see their environment with their eyes. Therefore, visual impairment had many limitations. The visually impaired person's movement is affected by factors such as, the foster family structure, the fear of not being able to assure safety while moving and the inability to participate in physical activities. These elements have a major impact on the development of a student with visual impairment, resulting in problems with social, psychomotor development and cognitive, (Tuncer, 2004). The freedom of movement of the person with visual impairment is restricted due to problems in these developmental areas. One of the most significant issues is the inability to act independently in daily lives of people (Malik, Ahmad & Ismail, 2018).

Orientation refers to the process of employing the senses to establish one's position and relationship to other objects in the surroundings, whereas mobility has been defined as the readiness, capacity, and ability to move about in the environment. Training of orientation is the potential to comprehend the environment and construct a role relative to the

surroundings, mobility training is described as the capacity to behave within the environment in a way that is effective, and secure. (Zijlstra et al., 2009).

Mobility competencies included fundamental mobility skills like sighted guide, self-protection strategies and cane abilities. These competencies were further broken down into many techniques. The capacity of the person with visual impairment to figure out their role and orientation is important for wayfindings (Treuillet & Royer, 2010).

Signs, clues, measuring, symptoms/landmarks, indoor/outdoor numbering structures and compass guidelines are all included in orientation and mobility training. This education allows visual impairment individuals to explore solutions of the questions about who I am, what my aim is, and the way how I can attain it (Altunay & Arslantekin, 2015).

Visually impaired person can get help from orientation and mobility, by knowing where he or she is in space and where he or she wants to move (orientation) and how to follow this plan to move there (mobility). Orientation and mobility training services are among the related services provided to qualified students as part of their IEP. Persons with visual impairment receive O & M training in different formats to children and adults. For kids with congenital blindness, who often experience delays in development, O&M works with such children and their parents to assist in the development of the physiological, cognitive and sensory skills that are required to understand, move around, and interact with the surroundings. The aim of the O & M training is to enhance problem-solving, development of functional mobility and self-management through setting goals. For participating in social and physical sports, traveling abilities are crucial.

According to Shimuzi (2009), Human beings with visual impairment want freedom of movement to fulfill their social tasks consisting of purchasing, running and socializing, (Altunay & Arslantekin, 2015 Cmar, 2015)

During Orientation and mobility (O&M) training visually impaired students faced many challenges in acquiring social, searching, and self-protection skills and techniques for independent and safe travel in educational institutions. Students with visual impairment find barriers to gain functional mobility and independent living skills by integrating the O&M learning in daily living activities (ADLs) which are performed in the home, in outdoor settings and at school. The capacity of the person with visual impairment to figure out their orientation and role is important for way findings (Treuillet & Royer, 2010).

Literature Review

Movement was a building block for learning. As a child explores his/ her world and has physical contact with it, learning takes place. Persons with visual impairment faced many challenges to move freely in the environment they need encouragement to explore their surroundings. To them, the world may be a startling and unpredictable place, or it may not be very motivating. Orientation was the ability to find one's way about in geographical space, whether familiar or unfamiliar but includes as well orientation of the persons with regard to immediate space (Leornard, 2000).

Orientation is the ability to define position and direction for movement based on the use of all available senses. It is all about perception and knowing the world around you. It is the competency in developing awareness of the surrounding. Orientation is the process of using the remaining senses to enable a person with blindness determine his/her focal point, and the spatial relationship between his/her own location and the location of important things in his/her environment.(Hill &Blasch 2000).

Mobility is the ability to move safely, efficiently and effectively from one place to another, such as being able to walk without tripping or falling, cross streets, and use public

transportation. Students with visual impairment faced challenges to acquire these skills they were unable to gain training through a well-structured activities plan by the orientation and mobility specialist to help develop or re-learn the skills and concepts you need to travel safely and independently within your home and in the community (Fazzi&Petersmeyer, 2001).

Orientation and mobility stand for goal oriented and purposeful movement, knowing where you were, where you came from, and where you were going to but students lack these skills due to insufficient training of O&M. Orientation and mobility are processes of using the senses to establish one's position in relationship to all other significant objects in the environment. Orientation and mobility were professions specific to blindness and low vision that teach safe, efficient, and effective travel skills to people of all ages.). Adequate O&M skills improve the self-esteem and sense of independence of the visually impaired by enabling them to perform many skills such as going to classroom on their own without falling (Chen, 2012).

Disability and Health (ICF) states that orientation and mobility participation involved: Domestic life, which comprises light household activities (e.g. doing the dishes, dusting, ironing, and cooking), heavy household activities (e.g. window cleaning, vacuuming, and mopping), assisting others (i.e. informal assistance of others outside the individual's own home), and shopping (alone or with someone else). Interpersonal interactions and relationships which was defined as socializing, defined as meeting relatives, friends, or neighbors in person, including contact by telephone or e-mail. Major life areas which comprises paid work and voluntary work and the community, social and civic life which comprised involvement in clubs or associations in hobby activities going out to recreational places for entertainment (e.g. nature reserve, forest, public garden, recreation area;) cultural places (e.g. theatre, cinema, museum) and public places (e.g. café or restaurant; going on holidays, involvement in sports activities and in religious activities. (Alma 2012).

A key feature of orientation and mobility training is that it takes place in natural environments, both inside and outside the school context. Mobility specialists typically place students in a real-world context and give them practical and age- appropriate problems to solve. Student find orientation and mobility training more changing for them. Younger students may be not find their way to and around their school building, whereas older students may feel difficulty be taught to access community services, shop, arrange for and use public transportation, and find their way around their neighborhoods and business areas. Acquiring this kind of "fundamental and enabling life skill like the acquisition of academic and social skills, was of great importance to the social and economic independence of blind and visually impaired persons (Cameto & Nagle 2007).

IDEA (2004) considered Orientation and Mobility Training as the services provided to persons with visual impairment by certified personnel to enable those visually impaired to systematically attain orientation to and safe movement within their vicinity in home, school, and community. .VI students faced challenged to walking alone in different places, uncomfortable without white cane, not fully aware of hurdles and obstacles, lack of training in social skills, did not know the basic of orientation and mobility skills, did not get proper training in self-protection, search technique and lack of sighted guide or assistance. (William, Richard & Bruce, 2010).

Important factor affecting the use of O&M skills or training by visually impaired people is inappropriate environmental arrangements of education institution. the quality of life, fear of falls/accidents or decreasing walking speed as indicators of problem outcomes after O&M training. The tactile ground surface aims to help people become more independent, confident, and secure in indoor and outdoor environments. The VI Students had problems due to the material of the tactile ground surfaces, objects placed on them, and obstacles and hurdles in educational institution. Improper mounting of the tactile ground

surface can cause confusion and accidents for visually impaired people (Pembuain, Priyanto, & Suparma, 2020).

Some VI students used navigation to determine the location of the stops, but they also had problems with this. Riazi et al. (2016) determined that people have problems in navigation when they go to the target by themselves in the external environment.

'Orientation' and 'mobility (O&M) training' teaches a visually impaired person to move independently and confidently in the society by utilizing certain skills and fully making use of other senses along with the help of some equipment such as mobility practices and devices. These equipments are considered to be organized and planned teaching system which has been used for more than 50 years in helping blind people to settle comfortably and effectively in the society effectively (Wolwer et al., 2005).

The student face challenge getting orientation and mobility training and found it difficult to plan his/her route using tactile maps, following simple routes using landmark sequencing and reverse directions to return to point of origin. The student should be able to travel within the home, school, neighbourhood, town and city. In order to accomplish this, the student will need to be proficient at crossing a variety of streets. A student needs to develop travel routes such as home to school, quiet residential areas, small business areas, shopping areas, home to shopping areas and inside stores and businesses. He/She needs skills for using elevators and escalators, revolving doors, public transportation, travel in unknown areas and travel in adverse weather conditions. The use of public transport is critically important for the visually impaired to be independent and able to access various activities (Low et al., 2020).

It had been determined that people with visual impairments did not have most orientation and mobility training. (Vanderpuye et al. 2020) also determined that students in the visually impaired school experience difficulties using self-protection and walking with a sighted guide effectively. (Arslantekin et al., 2016) restricted movement of individuals may influence their development, understanding of concepts and quality of life considerably. It would also restrict their exposure to the environment and the knowledge of the world around them would be limited. Training in Orientation and Mobility would enable them to avail a variety of real experiences and enhance their understanding of the concepts, give them more confidence and all these would result into personal development.

Material and Methods

Research Design

A quantitative research design was selected in order to allow the researcher to focus on the challenges encountered by students with visual impairment in accessing orientation and mobility training. Gender, type of visual impairment, onset of disability, Age, Education were collected from participants. There were 20 questions that examined the challenges faced by students with visual impairment in getting orientation and mobility training to enhance their participation in society and move freely in the environment without any kind of hurdles.

Content Validity

This was checked by 3 field expert's whether the items were suitable for the survey or not. The questionnaire was made using appropriate language which could be easily understandable by the participants.

Reliability of Instrument

A self-developed questionnaire was used for data collection. The reliability of the instrument was checked by SPSS which was 0.841.

Instrument

Questionnaire was used as instrument of the study which consisted of five options of Likert's scale (strongly agree, agree, neutral, disagree and strongly disagree). The first part of questionnaire consists on demographic information (gender, age, onset of disability, Education level and type of visual impairment) and second part of questionnaire consisted of 20 items.

Population

Population of study was consisting on students from institutions of Lahore.

Sample and Sampling Technique

Convenient sampling technique was used. The sample used in this study was 104 students from different institutions. These students are selected conveniently from different institutions of Lahore.

Analysis of Data

Data was analyzed by SPSS, descriptive statistical method, such as Statistical Package for Social Sciences (SPSS).

Limitation

Standardized questionnaire was not available for this study. Time span, financial assets were the limitation of study.

Ethical Considerations

In conducting quantitative research on the challenges faced by students with visual impairments in orientation and mobility training, several key ethical considerations were addressed. Firstly, obtaining informed consent is crucial, ensuring participants and their guardians completely understand the research aims, procedures, and potential risks involved. Privacy and confidentiality measures are essential to safeguard participant data and employing secure storage techniques. Accessibility is paramount, requiring all research materials, questions, and communication to be accessible to participants with visual impairments, utilizing formats like braille, audio recordings, or large print as needed. Minimizing harm involves identifying and mitigating potential physical or psychological risks during data collection and analysis. Moreover, the research should strive to maximize benefits for participants and contribute positively to improving orientation and mobility training practices. Obtaining ethical approval from relevant review boards ensures that the research adheres to ethical standards, and respecting the diversity among participants includes acknowledging differences in cultural backgrounds, communication preferences, and individual needs throughout the research process.

Results and Discussion

Descriptive analysis

Table 1
Demographic Analysis

Title	Description	Frequency	Percentage (%)
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Gender	Male	43	41.3%
	Female	61	58.7%
		104	100%
Age	Less than 20	39	37.5%
	More than 20	65	62.5%
		104	100%
Onset of disability	congenital	61	58.7%
	Acquired	43	41.3%
		104	100%
Education	Primary	14	13.5%
	Matric	15	14.4%
	Intermediate	17	16.3%
	Others	58	55.8%
		104	100%
Type of visual impairment	Low vision	56	58.7%
	blindness	48	41.3%
		104	100%

This demographic analysis table provides an overview of the participants' demographic characteristics, including gender, age, type of visual impairment, on set of disability and education level.

Table 2
T-test analysis on the basis of gender

Gender	N	Mean	SD	t	df	Sig.
Male	43	48.7442	14.89342	-.321	102	.014
Female	61	49.5574	10.93393			

Table 2 compares the mean scores between female participants and male participants regarding orientation and mobility challenges. significant

This table results shows a statistically significant difference as probability value = 0.014 so the gender influences the O & M challenges faced by visually impaired students.

Table 3
T-test analysis on the basis of type of visual impairment

Gender	N	Mean	SD	t	df	Sig.
Low vision	56	47.3929	14.7384	-1.60	102	.001
Blindness	48	51.3542	9.40685			

Table 3 compares the mean scores between low vision participants and blind participants regarding orientation and mobility challenges. significant

This table results shows a statistically significant difference as probability value = 0.001 so the Severity of visual impairment influences the O & M challenges.

Table 4
T-test analysis on the basis of onset of disability

Gender	N	Mean	SD	t	df	Sig.
Congenital	61	47.8033	12.22677	-1.36	102	.886
Acquired	43	51.2326	13.12910			

Table 4 compares the mean scores between congenital and Acquired visually impaired participants.

The table results indicate no statistically significant difference as probability value = 0.886 so the onset of disability may not affect challenges in orientation and mobility.

Table 5
Comparison of Means at the Base of education (One-Way ANOVA).

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1313.667	3	437.889	2.882	.040
Within Groups	15192.247	100	151.922		
Total	16505.913	103			

Table 5 compares the mean scores between different education levels of participants. This table results indicates a statistically significant difference as probability value = 0.040 so the different levels of education influences the O & M challenges.

Findings

There were 103 participants in the study, including 41.3% male participants and 58.7% female participants. On the basis of gender 58.7% female participants and 41.3% male participants who faced challenges in orientation and mobility. On the basis of type of visual impairment, the majority of participants were low vision (58.7%) and the remaining (41.3%) were blind, (58.7%) participants were congenital visually impaired and (41.3%) participants had acquired visual impairment. Majority of participants (55.8%) were from 'others' as education level, (16.3%) were from intermediate, (14.4%) followed by matric as education level and (13.5%) were from primary education level.

Discussion

The results of the survey will be discussed and linked to current research in the field of orientation and mobility training. There were 104 students who responded to the questionnaire, including those that teach within an early childhood special education schools, colleges and universities. In this study, the participants gave their thoughts and opinions through a survey about challenges of orientation and mobility training. The researcher developed the survey to gain a better understanding about challenges encountered by students with visual impairment in accessing orientation and mobility training and attempted to fill a gap in the research literature.

Conclusion

Orientation and mobility training is very important for students with visual impairment but student faced challenges in getting orientation and mobility training. The researcher find the challenges encountered by visual impaired students in accessing orientation and mobility training like students faced difficulty in moving without the help of white cane, orientation and mobility training is more challenging for them, most student not fully aware about the hurdles and obstacles and were afraid of walking alone in different places.

Majority of students did not get sufficient training in social skills, some students did not know the basic orientation and mobility training, unable to easily find the inside and outside route of the building, feel difficulty in self-protection, mostly hurt by falls and accidents, difficulty in search technique, difficulty in moving freely, use of sighted guide is challenging for them, did not socially interact with peers and they did not have proper orientation and mobility instructor in education institution.

Recommendations

The researcher drawn the following recommendations to reduce the challenges in getting orientation and mobility training:

- I. Orientation and mobility training should be provided to visual impaired to fully aware of hurdles and obstacles in the environment.

- II. Student should not feel afraid of travelling alone in different places.
- III. Sufficient orientation and mobility training should be provided to students to enhance their social skills.
- IV. Proper orientation and mobility training should be provided to students with visual impairment in school.
- V. Professional orientation and mobility training instructor should be provide to student to students in education.

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