

ENVIRONMENTAL BARRIERS FACED BY PEOPLE WITH VISION IMPAIRMENT AND BLINDNESS IN THEIR EVERYDAY LIFE

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ABSTRACT

OBJECTIVE: purpose of this study was to evaluate the environmental barriers faced by people with vision impairment and blindness in their everyday and to increase the awareness to enhance the quality of life among the people of Pakistan by addressing these barriers.

METHOD: This descriptive cross-sectional study was done using self-designed questionnaire for evaluating the environmental challenges that people with visual impairment and blindness face in their everyday life at College of Ophthalmology and Allied Vision Sciences, Mayo Hospital, Lahore. Different types of barriers were assessed such as physical, social, attitude, educational, etc. It included 88 people with severe visual impairment and blindness via non probability convenient sampling. After descriptive analysis, Pearson chi-square was used to test the significance of the results.

RESULTS: Among 88 participants enrolled in this study, physical barriers were assessed and majority of the visually impaired (45.4%) and blind (90.9%) feel lack of confidence in being physically active and 86.3% have fear of being injured due to blindness. Among 52.3% who are getting education, only 18.1% study in special school. Most of the people with blindness usually depend on others (77.2%). Among them, 88.6% need someone to walk around and 77.2% depend on others in doing daily-life activities. 56.8% face negative attitude of other people and 55.7% feel lack of confidence. 50% have difficulty in access to public transport. The results are statistically significant ($p \leq 0.01$).

CONCLUSION: People with visual impairment and blindness usually face many physical barriers (restricted in visiting friends or family, fear of being injured), orientation and mobility barriers (difficulty in crossing roads without cane, unable to do daily life activities independently), attitude barriers (face negative attitude of others, feel themselves burdened), vocational barriers (lack of adaptive equipment at workplace, lack of trust on skills and colleagues), sports barriers (lack of opportunities to participate in games) and face great difficulty in access to hospitals, public transport and educational institutions. The people with blindness usually suffer more due to environmental barriers.

KEYWORDS: Visual impairment, blindness, environmental challenges, attitude barriers, adaptive devices and technology.

INTRODUCTION

Our sense of sight helps us in most of the information that we obtained from our combined five senses.¹ We depend on vision in many of the movements and tasks we perform in our daily life.² Good visual acuity ensures active participation of an individual in a society.³

Vision impairment is defined as the decrease in ability to see to a certain degree that causes problems not fixable by usual means. According to the findings of General Burden of Disease (1990-2025), 21.78 million were affected from visual impairment and blindness out of 207.7 million populations in Pakistan in 2017.⁴ The age-standardized prevalence was 15.38%.⁵ This reveals that

visual impairment is one of the major health concern not only in Pakistan but also in the whole world.⁶ Vision impairment has a great impact on the quality of life of the person.⁷

Vision impairment significantly influences the daily activities of patient and also affects the quality of life. Impact of environment plays a great role in turning visual impairment into visual disability.⁸ The person with disability is unable to actively participate in social, recreational and vocational activities.⁹ Narrow doors and stairs are considered to be the barriers for a person who uses wheel-chair.

Environmental barriers are the factors that lead impairment into disability.¹⁰ One of the significant environmental barrier for the person with visual impairment or blindness is that majority of the other people have lack of knowledge and understanding about sight loss.¹¹ Although people with visual impairment and blindness have to face many practical challenges such as using public transport, finding a suitable job, crossing streets.¹² Children face great difficulty in attending school. The lack of awareness, wrong assumptions and out-dated stereotypes make their life more hard.¹³

Lack of awareness and poor attitude of societies towards the people with visual impairment and blindness is considered as a bigger barrier than the practical challenges they face in their everyday life. Environmental barriers to outdoor mobility such as weather conditions, road conditions and traffic results in the restriction of person in the house, lack of social interaction and loneliness.¹⁴ According to different studies, the significant barriers are lack of motivation, security, proper training about physical activities.

Different visual defects, severe visual impairment and blindness lead to many social, economic and health related problems for visually impaired specifically in many developing countries.¹⁵ People with low vision and blindness face great difficulty in having access to public transport.¹⁶ They usually rely on physical landmarks that help to locate bus stop location.

Lack of access to transport and buildings are considered as the barriers for the person with impairment and disability. Lack of support, motivation and assistance results in lack of self-confidence and creates severe barriers to participations of a person with impairment and disability in a society. Stereotype and negative attitude of people towards person with visual impairment and blindness is considered as the main hindrance to participation of person with VI in a community.¹⁷

Person with visual impairment and blindness is likely to result in loss of independence, increase social isolation, high level of depression and lack of self-confidence due to the above mentioned environmental barriers. In Pakistan, because of high prevalence of visual impairment and blindness and lack of education and awareness people with sight loss have to face barriers in

their everyday life.¹⁸ We should be more determined to create a world free of barriers for people with sight loss, where we can live the lives we want to lead and removing these barriers depends on blind and partially sighted people who have the confidence, practical and emotional support and opportunities to thrive.

This study will explore the environmental challenges faced by people with visual impairment and blindness in their everyday life, visiting Mayo Hospital, Lahore.

MATERIAL AND METHOD

It was descriptive cross sectional study, 88 was the sample size of people with VI and blindness who visit eye OPD, Mayo Hospital. Self-designed questionnaire was used for evaluating the challenges faced visually impaired people at College of Ophthalmology and Allied Visio Sciences. Desired sample was selected via non-probability convenient sampling. People with visual impairment and blindness aged between 7-45 years were included in this study but the patients with already diagnosed psychiatric disease were excluded. Different categories of environmental barriers for visually impaired people were assessed. Use of low vision aids, orientation and mobility training and quality of life were dependent variables. Age, gender, occupation and economic status were independent variables. Different categories of environmental barriers that people with visual impairment and blindness face in their daily life were assessed separately. Pearson chi-square was used to determine the significance of results by SPSS-25.

RESULTS

The present study included 44 people with visual impairment and 44 people with blindness whose ages ranged from 7 to 45 years with the mean age of 21.0 ± 6.39 years. 45 males and 43 females were included in this study. Only 7.95% were employed. Majority of the visually impaired and blind have no disease of systemic history (62.5%). Majority of the people with visual impairment and blindness have the history of amblyopia (22.7%) and 14.8% of the people were suffering from severe visual impairment and blindness within the duration of 3 years. Most of the visually impaired people have a small circle of friends (83%), feel restricted in visiting friends or families (47.7%), feel lack of confidence to be physical active (80.7%) and have fear of being injured due to VI (84.1%) [Table 1] People with visual impairment and blindness face many

educational barriers along with assistance barriers. Only 18.2% of the visually impaired study in special school and the results are statistically significant ($p \leq 0.05$). Out of those who study in special school, 23.9% face difficulty in understanding teachers and majority has no qualified trained teacher (77.3%) and don't use Braille system (76.1%). The results were statistically significant ($p \leq 0.01$). Most frequently it is observed that majority of them need someone to walk around (84.1%) and depend on others for daily life activities (55.7%) and feel themselves burdened on others (55.3%). [Table 2] Orientation and mobility, attitude and sports barriers that visually impaired people and people with blindness face in their everyday life were also assessed and almost all the results are statically significant ($p \leq 0.05$). Almost 50.1% face difficulty in access to public transport and 1.1% of visually impaired don't use public transport. Majority of them face great difficulty in crossing roads without cane (40.9%). Majority of them face negative attitude of other people in a society (56.8%) and have lack of self-confidence (55.7%) ($p \leq 0.01$). Only 39.8% of them like to play games. Out of them, only 17.0% got opportunity to participate in the games and 47.7% have limited training. ($p=0.00$). Different vocational, daily life activities barriers and other physical barriers that people with visual impairment and blindness face in their everyday life were evaluated. Our results show that only 22.7% of them are employed. Out of them, majority has the fear of failure (59.1%), have lack of trust on their skills and colleagues (51.1%) and only 11.4% have access to adaptive equipment at their workplace. Majority of them need more training to improve their skills (46.6%) and get frustrated at not being able to do certain tasks (69.3%). Out of 88 visually impaired people, only 23.9% are able to do daily life activities independently and 46.6% require aids every time to do their tasks. ($p \leq 0.01$) [Table 3].

Table -1: Majority of the visually impaired face physical and social barriers and the results are significant ($p < 0.01$).

Physical/Social Barriers	Responses	VI	Blindness	p-value
Friends Circle	Yes	38(86.3%)	3(6.8%)	<0.01
	No	6(13.6%)	41(93.1%)	
Restriction in visiting friends and family	Yes	15(34.0%)	27(61.3%)	<0.01
	No	15(34.0%)	10(22.7%)	
	Sometimes	14(31.8%)	7(15.9%)	
Lack of confidence to be physically active	Yes	20(45.4%)	40(90.9%)	<0.01
	No	16(36.3%)	2(4.5%)	
	Sometimes	8(18.1%)	2(4.5%)	
Fear of being injured	Yes	6(13.6%)	38(86.3%)	<0.01
	No	37(84.0%)	4(9.0%)	
	Sometimes	7(15.9%)	2(4.5%)	

Table -2:

Educational/Assistance Barriers	Responses	VI	Blindness	p-value
Study in special school	Yes	1(2.2%)	8(18.1%)	<0.01
	No	43(97.7%)	36(81.8%)	
Difficulty in understanding teacher	Yes	5(11.3%)	31(70.4%)	<0.01
	No	36(81.8%)	10(22.7%)	
	Sometimes	3(6.8%)	3(6.8%)	
Qualified Trained Teachers	Yes	2(5.9%)	3(6.8%)	<0.01
	No	12(27.2%)	35(79.5%)	
	Sometimes	3(6.8%)	6(13.6%)	
Use of Braille	Yes	2(4.5%)	10(22.7%)	<0.01
	No	26(59.0%)	27(61.3%)	
	N/A	16(36.3%)	7(15.9%)	
Need Someone To Walk around	Yes	1(2.2%)	39(88.6%)	<0.01
	No	38(86.3%)	1(2.2%)	
	Sometimes	5(11.3%)	4(9.0%)	
Depends On Others For Daily Life Activities	Yes	1(2.2%)	34(77.2%)	<0.01
	No	35(79.5%)	4(9.0%)	
	Sometimes	8(18.1%)	6(13.6%)	
Feel Burden	Yes	13(29.5%)	35(79.5%)	<0.01
	No	29(65.9%)	3(6.8%)	
	Sometimes	2(4.5%)	6(1.3%)	

Table 2 shows that most of the visually impaired people face a lot of educational and assistance barriers ($p < 0.01$).

Table-3: Majority of the participants face vocational / physical barriers daily. (N=88).

Vocational/Physical Barriers	Responses	VI	Blindness	p-value
Employed	Yes	7(15.9%)	2(4.5%)	<0.01
	No	35(79.5%)	39(88.6%)	
	N/A	2(4.5%)	3(6.8%)	
Fear of failure	Yes	23(52.2%)	32(72.7%)	<0.01
	No	9(20.4%)	2(4.5%)	
	Sometimes	12(27.2%)	10(22.2%)	
Lack of trust on skills	Yes	22(50%)	29(59.0%)	<0.01
	No	15(34.0%)	5(11.3%)	
	Sometimes	7(15.9%)	10(22.7%)	
Access to adaptive equipment	Yes	4(9.0%)	16(36.5%)	<0.01
	No	30(68.1%)	3(6.8%)	
	Sometimes	2(4.5%)	10(22.2%)	
	N/A	8(18.8%)	15(34.0%)	
Need training to improve skills	Yes	28(63.6%)	35(79.5%)	<0.01
	No	10(22.7%)	1(2.2%)	
	N/A	6(13.6%)	8(18.8%)	
Frustrated at not being able to do certain tasks	Yes	13(29.5%)	40(90.9%)	<0.01
	No	22(50%)	2(4.5%)	
	N/A	9(20.4%)	2(4.5%)	
Able to do life activities independently	Yes	34(77.2%)	4(9.0%)	<0.01
	No	34(77.2%)	30(68.1%)	
	Sometimes	6(13.6%)	10(22.7%)	
Require aids to do tasks independently	Yes	7(15.9%)	29(65.9%)	<0.01
	No	27(61.3%)	2(4.5%)	
	Sometimes	10(22.2%)	13(29.5%)	

DISCUSSION

A study was conducted in 2004 to assess the environmental barriers faced by people with disability and without disability in a community.¹⁹ 97 persons were included in group 1 (50 with disability and 47 without disability). 497 persons with some disability were included in second group. After the analysis study revealed that sample 2 faced five main barriers in which physical barriers, attitudinal barriers, employment barriers, assistance barriers and policy barriers are included Previous study supports our results that

people with visual impairment and blindness have small circle of friends and have lack of confidence in being physically active ($p < 0.01$).

In 2009, cross-sectional study was performed to access the level of difficulty faced by people with visual impairment and blindness in doing daily life activities with or without the use of aids of daily living.²⁰ 24 persons were included in this study. The study was based on the questionnaire and the subjects established bilateral visual impairment rate of difficulty in completion of task was directly associated with the visual functions. 69% of them faced difficulty in doing task of daily living. Our study reveals that the 25 out of 88 (28.4%) are unable to do activities of daily living independently ($p < 0.01$) and 44 out of 88 (50.0%) have no access to the aids of daily living or adaptive equipment's ($p < 0.01$).

In 2018 across-sectional survey was conducted in Finland to explore the challenges in participation faced by young persons with visual impairment and blindness on the basis of interview.²¹ 14 persons were included with age 16 to 22 years. Out of 14, 6 were blind and all of them were students in school. The survey deduced that three main challenges are faced to access to public transport, 24.6% of problems were related to their domestic life and 23% were related to social life. Our study also reveals that 44 out of 88 (50%) faced great difficulty in having access to public transport. And 49 persons (55.7%) feel lack of confidence.

A cross-sectional survey was conducted in 2013 to estimate the barriers faced by people with visual impairment in participation of different sports.²² The study was conducted in Royal vision institute and 648 visually impaired persons were invited. 63% of them reported the participation in different types of sports. 34% of them reported the participation in cycling and 43% participated in walking. The study reported that the main barrier was dependence on others. Our study reports that 74 out of 88 (84%) need someone to walk around and 63 out of 88 (71.6%) never got an opportunity to participate in games and 31 out of 88 (35.2%) got no access to playground.

CONCLUSION

Majority of the people with visual impairment and blindness have to face many barriers in environment such as vocational barriers, difficulty in crossing roads,

face negative attitude of other people, depend on others in making decision, and have difficult access to hospitals, public transport and educational institutions. Different types of barriers that are evaluated in this study were physical barriers, attitudinal barriers, sports barriers, social barriers, assistance barriers, orientation and mobility barriers. These people have lack of opportunities to participate actively in different competitions and in society. The root cause of their great dependence on others is the lack of awareness about the use of adaptive devices and technology and limited training. These are the barriers that lead them to depression and make them self-isolated, marginalized and vulnerable.

RECOMMENDATION

People with visual impairment and blindness should be given awareness about the use of adaptive devices and technology to ensure their participation in the society. After the evaluation of all environmental barriers faced by people with visual impairment and blindness in their everyday life, address them and make the environment accessible and equitable for all. Special schools with qualified trained teachers must be there for the children in need. Participation of the visually impaired persons and people with blindness must be ensured by removing all the physical, social, vocational, educational, sports and attitude barriers.

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