Research Article
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The disability act of Ghana: building accessibility of visually impaired persons in two districts in the Ashanti region of Ghana

Abstract

In compliance with the Ghana Disability Act 2006, Act 715, Section 6, this study investigated building accessibility among visually impaired persons. The study was a descriptive cross sectional survey, which involved thirty-one visually impaired persons and nine social workers. The study participants were recruited from two districts, namely Kumasi Metropolitan Assembly and Ejisu-Juaben Municipal Assembly, both in the Ashanti Region of Ghana. Thirteen (13) males and eighteen (18) females representing 41.9% and 58.1% respectively of the visually impaired sampled population participated in this study. The mean age of the visually impaired respondents was 45.3±12.5 years. Data obtained was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. The results obtained indicated that, 100% of the visually impaired persons relied on both white cane and sighted guides as their mode of accessing buildings. More than half of the sampled population (52.5%) was ignorant of the Disability Act. For those who were aware of the Disability Act, 87.5% of the sampled population claimed that the laws were not being adhered to. The study also revealed that, building modification measures were inadequate and most buildings in the two districts surveyed were not friendly to the visually impaired persons. It was, therefore, recommended that the two districts must improve their building infrastructure to render them ergonomically safe and accessible to visually impaired persons. Indigenous materials such as bamboos, wood, bottle bottoms, and vehicle tires could be considered as some of the materials, which could be used in the modification of building infrastructure to make them accessible to the visually impaired persons.

Keywords: disability, visual impairment, building accessibility, Ghana disability act

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Introduction

The International Classification of Functioning Disability and Health defines disability as an umbrella term for impairments, activity limitations and participation restrictions and it approximates that over a billion people are living with one form of disability or the other. The UN Convention on the Rights of Persons with Disabilities Article 25 reinforces the right of persons with disabilities to attain the highest standard of health care, without discrimination.[1,2] Visual impairment is defined as a functional limitation of the visual system that can manifest as reduced visual acuity or contrast sensitivity, visual field loss, photophobia, diplopia, visual distortion, visual perceptual difficulties, or any combination of the above.[3] A visual impairment can cause disability by significantly interfering with one's ability to function independently to perform activities of daily living.[4] Visual impairment includes low vision as well as blindness. According to the World Health Organization, 314 million people are visually impaired worldwide. Out of this number, 45 million are blind.[5,6] About 90% of the world's visually impaired live in developing countries of which Ghana is a part.[7] The nature of visual loss varies considerably between individuals.[8] The overall picture is a complex one, but generally the result of different eye conditions will lead to the following types of impairment: a limited field of vision-being unable to see to the sides or up and down; some loss of central vision limiting the ability to see fine detail; acute shortsightedness-seeing the world as a continuous blur; uncontrollable oscillations of the eyeball-leading to an inability to see objects clearly; and night blindness-a sensitivity to light and a tendency to be dazzled by glare. It is well known and documented that persons with vision loss have greater risk of acquiring functional difficulties that, in part, may reflect age-related losses in the musculoskeletal system.[9]

Physical barriers shape disability.[10] For instance, medicine labels that is too small for people with visual impairment to read, or stairs to the hospital entrance that prevents people using wheelchairs from going in. Social barriers including negative attitudes, cultural messages and discrimination in employment also shape disability.[11,12] Travel in the environment involves the skills of orientation and mobility. Orientation is the ability to recognize the environment and establish position in relation to the environment, whereas mobility is the physical ability to move in an orderly, efficient, and safe manner through the environment. To maintain travel independence, it is essential for a visually impaired adult to learn new orientation and mobility skills to compensate for reduced visual information.[13,14] Accessibility is an important characteristic of the geography of space,[15] whether it involves a small area (elements within a building) or a large region (elements within a metropolitan area). It is frequently

included as a goal in transportation planning, land use planning, and building design. The reason for this is that most will argue that accessibility is something to value and improve in an urban setting. Beyond acknowledging the importance of accessibility as a goal in planning, it has seldom been translated into performance measures by which policies are evaluated.[15] Architectural and environmental barriers have gained increasing attention in recent years as part of efforts to improve the accessibility of the environment for mobility-impaired people of all ages.[16] The issue of equity is of significant concern in many of these situations because a choice must be made about the cost that people, businesses, and governments must bear to eliminate barriers and improve access.[17] Vision is by far the supreme sensory modality that benefits way finding and navigation.[18] In its absence, auditory cues can be used to inform those without vision about the environment.[19]

The Persons with Disability Act 715 passed by the Ghanaian Parliament in 2006 compels the social worker to start making provisions to accommodate the needs of disabled persons.[20] In fact, the modification of the environment without necessarily changing the physical space is an absolute necessity now, because most of the facilities and structures in the nation predate Disability Act 715. The Ghana Disability Act mandates that all people be entitled to equal access to public transit and buildings. Curb cuts for wheelchair users, ramps, and bus lifts have removed many of the structural barriers to equal access. The use of auditory signs can remove the functional barriers that the blind and vision impaired encounter because they cannot read signs or pick up visual environmental cues.[21] Canes and dog guides are used to avoid obstacles and dangerous places, but orientation to the environment and spatial understanding usually means asking people for help and information. Tactile ground service indicators provide the visually impaired persons with visual and sensory information. The two types of tactile ground service indicators are warning indicators and directional indicators. The visual contrast between the walking surface and surrounding environment are critical for vision impaired people who are using their limited residual vision for orientation, distinguishing the limits of the footpath, recognizing hazards and gathering information. Contrast is especially important in the provision of tactile ground service indicators to warn users of hazards.[22] Preliminary research by the researcher had shown that most of the buildings in Ashanti Region of Ghana lack adequate markings, signs and other relevant modification that aid in the accessibility of the disabled persons especially the visually impaired. It was also observed that, both old and new buildings and other facilities in the Ashanti Region of Ghana were not disability friendly. This clearly shows that the Disability Act is therefore being violated and calls for immediate attention. The purpose of this study was to examine, in the light of the Ghana Disability Act, building accessibility of visually impaired persons in two districts in the Ashanti region of Ghana.

Methodology

Study area and participants

This descriptive cross sectional study was conducted at Ejisu Juabeng Municipal Assembly and Kumasi Metropolitan Assembly, in the Ashanti Region of Ghana. The participants included visually impaired persons as well as social workers, who are responsible for enforcing the Disability Act of Ghana.

Sampling

Purposive sampling was employed in selecting 40 participants comprising 31 visually impaired persons and 9 social workers from the two districts.

Data collection procedures

Standard questionnaires were administered to elicit information from participants. Verbal, unstructured interviews were also conducted and observational visits were made to confirm answers given by the various respondents.

Ethical consideration

Acceptance and clearance was sought from the management or administrative heads of the district assemblies involved in the study. All participants were guaranteed of anonymity and confidentiality of the information obtained. The study protocols conformed to the principles of the Declaration of Helsinki.

Data analysis

The Statistical Package for Social Sciences (SPSS) software, version 20.0 was used to analyze the results from the survey. Descriptive statistics was mainly computed.

Results

Demographics of participants

Forty (40) individuals comprising thirty one (31) visually impaired persons and nine (9) social workers were involved in the study which was sited in two districts: Ejisu-Juabeng Municipal Assembly and Kumasi Metropolitan Assembly, both in the Ashanti region of Ghana. Thirteen (13) males and eighteen (18) females representing 41.9% and 58.1% respectively of the visually impaired sampled population participated in this study. The mean age of the visually impaired respondents was 45.3±12.5 years. The participants' demographics have been presented in Tables 1&2.

Table 1 Demographics of participants

Age range	Visually impaired persons	
	Number	%
Below 20	1	3.3
21-39	9	29
40-69	16	51.6
70 and above	5	16.1
Total	31	100

Table 2 Gender distribution of visually impaired respondents

	Visually impaired respondents	
Gender	Number	%
Male	13	41.9
Female	18	58.1
Total	31	100

Employment status of visually impaired respondents

Out of the 31 visually impaired respondents, 15 (48.4%) indicated that they were unemployed, 15 (48.4%) were employed in other professions whiles one (3.2%) was a student. Out of the fifteen employed visually impaired persons, nine (29.0%) were teachers, three of them (9.7%) were traders, one respondent (3.2%) was a clerk and two of them (6.5%) were farmers. Table 3 shows the occupational distribution of the visually impaired respondents.

Table 3 Occupation of visually impaired respondents

Occupation	Visually impaired respondents	
	Number	%
Teaching	9	60
Trading	3	20
Clerkship	1	6.7
Farming	2	13.3
Total	15	100

Occupation of participating social workers

Of the nine (9) social workers who were recruited to take part in this study, three (3) of them were building technologists, another three (3) were teachers, two (2) participants were social welfare personnel while one (1) participant was a development practitioner. The occupation distribution of the social workers can be seen in Table 4.

Table 4 Occupation of participating social workers

Occupation	Social workers	
	Number	%
Building Technologist	3	33.3
Development practitioner	1	11.1
Teaching	3	33.3
Social welfare	2	22.2
Total	9	100

Participant's awareness of the Ghana disability act

Participants were asked whether or not they were aware of the Disability Act of Ghana. The various responses given have been outlined in Table 5.

Table 5 Respondents' awareness of the disability act of Ghana

Awareness of Disability Act	Sampled population			
	Visually impaired number	Social workers Number	Total Number	%
Aware	17	2	19	47.5
Not aware	14	7	21	52.5
Total	31	9	40	100

Compliance with the Ghana disability act among participants

Out of the total sampled population, only 3 visually impaired and 2 social workers adhered to the Disability Act as shown in Table 6.

Modes of accessing buildings among the sampled visually impaired persons

In soliciting responses on the mode of accessing buildings among the sampled visually impaired persons, the following results were collated: 25 (80.6%) of them used white canes while 6 (19.4%) did not use white cane. Twenty-eight respondents (90.3%) reported sighted guides assisted them while 3 (9.7%) reported that sighted guides did not help them. None of the respondents used tactile ground indicators for navigation. All respondents reported they have used both sighted guides and white cane for mobility at some point in their life. How the visually impaired persons in this study accessed buildings have been provided in Table 7.

Existing measures to enhance accessibility of visually impaired persons to public buildings

Some public buildings within the two districts were selected and the availability or otherwise of handrails, ramps, tactile floors, audible indicators and lifts, which are vital modifications to aid the visually impaired access public buildings, was reported and has been depicted in Table 8.

Table 6 Respondents' adherence to the Ghana disability act

Adherence	Sample population			
	Visually impaired iumber	Social workers number	Total Number	%
Adhering	3	2	5	12.5
Not adhering	28	7	35	87.5
Total	31	9	40	100

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Table 7 Modes of accessing buildings among sampled visually impaired persons

Modes of accessing buildings	Usability				Total	
	Used		Not used			
	Number	%	Number	%	Number	%
White cane	25	80.6	6	19.4	31	100
Sighted guide	28	90.3	3	9.7	31	100
Tactile ground indicators	0	0	31	100	31	100
White cane/Sighted guide	31	100	0	0	31	100

Table 8 Accessibility measures available in selected public buildings in the two districts

Public building	Accessibility measures				
	Handrails	Ramps	Tactile floors	Audible Indicators	Lifts
KNUST Main Administration	A	A	NA	NA	A
Ejisu-Juaben Municipal Administration building	NA	A	NA	NA	NA
Komfo Anokye Teaching Hospital Eye Unit	A	A	NA	NA	NA
Ghana Commercial Bank, Adum branch	A	A	NA	NA	NA
KNUST Science Classrooms Block	A	NA	NA	NA	NA

Where:

A: Available and

NA: Not Available

Social workers' knowledge on the use of indigenous materials for building modifications

Three (33.3%) of the 9 social workers interviewed responded that they were not aware that there were indigenous materials that could be used to modify buildings to make them accessible to visually impaired persons. Six (66.7%) reported as shown in Table 9 below that they were aware that indigenous materials could be used for building modifications to suit the needs of the visually impaired persons. This knowledgeable category of social workers mentioned bamboo and wood planks as some indigenous materials that can be used for building modification to enhance accessibility of the visually impaired.

Table 9 Social workers' knowledge on the use of indigenous materials for building modifications

Awareness	Social workers	
	Number	%
Aware	6	66.7
Not aware	3	33.3
Total	9	100

Discussion

Demographics of participants

The survey showed that, 51.6% of the visually impaired sampled population was between 40 to 69 years whiles 29.0% were between the ages 21 and 39 years. 16.1% of the participants were 70 years and above while one person (3.3%) was below 20 years old. Time constraint did not allow the researcher to carry out investigations into this trend: visual disability and age of the sampled population. However, the National Age Structure shows that 18.8% of the visually impaired population is between the ages of between 15-24 years, 33.3% is between 25-54 years, 4.7% is between 55-64 years and 4.1% is above 65 years. The study further revealed that, 58.1% of the sampled population was females and 41.9% were males. According to the Ghana National Population Statistics, females form 51% of the population whiles males form 49%.[23]

Employment status of the visually impaired respondents

The results indicated that almost half (48.4%) of the visually impaired respondents were unemployed whiles 51.6% were employed in various sectors of the economy with teaching being the predominant occupation for the sampled visually impaired in the present study.

Occupation of social workers

About thirty-three percent (33.3%) of the social workers were building technologists and teachers, 22.2% were social welfare personnel and 11.1% were development practitioners. None of these professionals were operating in the private sector; they were all public servants and as such would rely on government subvention to execute their tasks within the districts.

Participants' awareness of the Ghana disability act

In assessing awareness about the disability law in the sampled population, 47.5% indicated that they were aware of the Disability Act whiles the remaining 52.5% indicated that they were not aware of such a law. It is very unfortunate that most of the visually impaired

persons, whom the law was enacted for, were totally ignorant of such legislation. In the United States of America, the Americans with Disabilities Act (ADA) is a federal civil rights law and binds all Americans, whether able or disable to adhere to it.[24,25] The Ghana Disability Act must be fashioned along this line through civic education so that all Ghanaian will be aware of it and consequently adhere to the law.

Participants' adherence to the Ghana disability act

This study revealed that 90.3% of the visually impaired respondents and 77.8% of the social workers reported that they were aware that the Disability Act was not being adhered to. Mr. Richard Cofie, a Ghanaian, who is an international architect, at the 50th Anniversary Celebration of Ghana Institute of Architects in Accra, stated that, a key provision in the Persons with Disability Act, 2006 (Act 715), which required public buildings to provide appropriate facilities to make them easily accessible to persons with disability was yet to be enforced, six years after the passage of the law. He also made reference too many government buildings including that of the Attorney-General's Department and Ministry of Justice, Parliament House and Judicial Service which are still lacking adequate facilities to enhance easy accessibility to the disabled. The districts surveyed in the current study gives credence to the submission made by Mr. Cofie that there was no adherence to the building code to make it easily accessible to the visually impaired persons.

Existing measures to enhance accessibility of visually impaired persons to public buildings

Observational visits were organized to vital public buildings in the two districts to assess whether basic but essential building modification measures were put in place to enhance accessibility of the visually impaired persons. From the survey, it was realized that the only modifications available in some of the buildings were handrails along staircases and ramps. Tactile ground surface indicators and audible aids were absent in any of the public buildings visited. In New Zealand, all public buildings were constructed to have the full complement of measures that allowed buildings to be accessible to the visually impaired persons and other disabled persons.[26]

Modes of accessing buildings among the sampled visually impaired persons

The visually impaired respondents were asked about the aids they used in accessing buildings in their districts. From the results obtained, it was realized that all of them used both sighted guides and white canes. All of the visually impaired persons used only two modes: white canes or sighted guides to access buildings. In New Zealand, in addition to the white canes and sighted guides, visually impaired persons frequently used guide dogs, tactile ground indicators and audible signals.[27]

Social workers' knowledge on the use of indigenous materials for building modifications

From the study, 66.7% of the social workers reported that they were unaware of any indigenous materials that could be used for building modification to enhance building accessibility to the visually impaired persons, while 33.3% claimed that they were aware and knew some indigenous materials that could be used for building modification. Furthermore, 77.8% of the social workers responded they were aware bamboo could be used to modify building infrastructure, while 22.2% reported that none of the numerous examples of indigenous materials provided in the questionnaire could be used to modify buildings to enhance building accessibility of the visually impaired persons. As reported by the New Zealand institution in charge of ensuring building accessibility, tactile ground surface indicators assist blind and vision-impaired people with their orientation and awareness of impending obstacles, hazards and changes in the direction of the continuous accessible path of travel.[28,29] Indigenous materials like bamboo, vehicle tires, tree stumps, bottles bottoms and many others can be used to modify buildings to help enhance the mobility of the visually impaired persons in our societies. Bottle bottoms for instance can be used to modify the floors of buildings as tactile ground surface indicators.

Conclusion

The study reported that majority of the participants in this survey showed lack of awareness of the Disability Act of Ghana. The study revealed that, building modification measures were inadequate and most buildings in the two districts surveyed were not friendly to the visually impaired persons. It is, therefore, recommended that the stakeholders in the two districts must see to the improvement of their building infrastructure to render them safe and accessible to visually impaired persons. This can be achieved by mass education on the Disability Act of Ghana by the National Commission on Civic Education. In addition, law enforcement agencies and all social workers who superintend building designs and constructions must be up and doing to ensure that all building are in conformity with the tenets of the Ghana Disability Act.

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Conflicts of interest

The authors declare that they have no financial relation regarding the conduct of this study and there is no conflict of interest with regards to the publication of this manuscript.

References

1. Kayess R, French P. Out of darkness into light? Introducing the Convention on the Rights of Persons with Disabilities. *Human rights law review*. 2008;8(1):1–34.
2. Hendricks A. UN Convention on the Rights of Persons with Disabilities. *Eur J Health L*. 2007;14:273.
3. Horton JC. Harrison's principles of internal medicine. The McGraw-Hill Companies; 2005.
4. Carlson JE, Oster GV, Black SA, et al. Disability in older adults 2: Physical activity as prevention. *Behavioral Medicine*. 1999;24(4):157–168.
5. Foster A, Gilbert C, Johnson G. Changing patterns in global blindness: 1988-2008. *Community Eye Health*. 2008;21(67):37–39.
6. Organization WH. Global Initiative for the Elimination of Avoidable Blindness: action plan 2006–2011. 2007.
7. Patel I, Munoz B, Burke AG, et al. Impact of presbyopia on quality of life in a rural African setting. *Ophthalmology*. 2006;113(5):728–734.
8. Rubenstein LZ. Falls in older people: epidemiology, risk factors and strategies for prevention. *Age Ageing*. 2006;35(Suppl 2):ii37–ii41.

9. Blaylock SE, Vogtle LK. Falls-prevention interventions for persons who are blind or visually impaired. *Res Pract Vis Impairment Blindness*. 2011;4:83–91.

10. Schopp LH, Sanford TC, Hagglund KJ, et al. Removing service barriers for women with physical disabilities: promoting accessibility in the gynecologic care setting. *Journal of Midwifery & Women's Health*. 2002;47(2):74–79.

11. Schur L, Kruse D, Blasi J, et al. Is disability disabling in all workplaces? Workplace disparities and corporate culture. Industrial Relations: *A Journal of Economy and Society*. 2009;48(3):381–410.

12. Scotch RK. Models of disability and the Americans with Disabilities Act. *Berkeley J Emp & Lab L.* 2000;21:213.

13. Soong GP, Lovie-Kitchin JE, Brown B. Does mobility performance of visually impaired adults improve immediately after orientation and mobility training? *Optometry & Vision Science*. 2001;78(9):657–666.

14. Virgili G, Rubin G. Orientation and mobility training for adults with low vision. *Cochrane Database Syst Rev*. 2010;(5):CD003925.

15. Church RL, Marston JR. Measuring accessibility for people with a disability. *Geographical Analysis*. 2003;35(1):83–96.

16. Baker SM, Stephens DL, Hill RP. How can retailers enhance accessibility: giving consumers with visual impairments a voice in the marketplace. *Journal of Retailing and Consumer Services*. 2002;9(4):227–239.

17. Hanson K, Ranson MK, Oliveira-Cruz V, et al. Expanding access to priority health interventions: a framework for understanding the constraints to scaling-up. *Journal of International Development*. 2003;15(1):1–14.

18. Marston JR, Golledge RG. Towards an accessible city: Removing functional barriers for the blind and vision impaired: A case for auditory signs. University of California Transportation Center; 2000.

19. Klatzky RL, Marston JR, Giudice NA, et al. Cognitive load of navigating without vision when guided by virtual sound versus spatial language. *Journal of Experimental Psychology Applied*. 2006;12(4):223–232.

20. Ansah SK, Owusu K. State of public buildings in Ghana after the passage of the Persons with Disability Act (Act 715): The case of tertiary institutions. *Journal of Construction Project Management and Innovation*. 2012;2(2):448–463.

21. Giudice NA, Legge GE. Blind navigation and the role of technology. The Engineering Handbook of Smart Technology for Aging, Disability, and Independence; 2008. p. 479–500.

22. Wai Michael Siu K. Design standard for inclusion: tactile ground surface indicators in China. *Facilities*. 2013;31(7/8):314–327.

23. Anarfi J, Kwankye S. Migration from and to Ghana: A background paper. University of Sussex: DRC on Migration, Globalisation and Poverty, UK; 2003.

24. Issacharoff S, Nelson J. Discrimination with a Difference: Can Employment Discrimination Law Accomodate the Americans with Disabilities Act? *NCL Rev*. 2000;79:307.

25. Switzer JV, Vaughn J. Disabled rights: American disability policy and the fight for equality. USA. Georgetown University Press; 2003.

26. Whiteneck G, Dijkers MP. Difficult to measure constructs: conceptual and methodological issues concerning participation and environmental factors. *Arch Phys Med Rehabil*. 2009;90(11):S22–S35.

27. Bentzen BL, Barlow JM, Tabor LS. Detectable warnings: Synthesis of US and international practice. US Access board Washington, DC, USA; 2000.

28. Humaira SA. Center for blind children Dhaka. BRAC University, Bangladesh; 2015.

29. Mann RW. Technology and Human Rehabilitation. Advances in Biomedical Engineering: Published Under the Auspices of the Biomedical Engineering Society 4: 209. 2014.

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