

ACCESS BARRIERS ENCOUNTERED BY PERSONS WITH MOBILITY DISABILITIES IN ACCRA, GHANA

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Abstract

The environment is a critical factor for participation for everyone. The need for accessible transportation and built environment for persons with disabilities to enjoy their basic human rights and fundamental freedoms cannot be overemphasized. This study sought to understand the daily experiences of persons with mobility disabilities with physical and transportation barriers in Accra-Ghana. Photovoice methodology was used to enable participants to tell their stories about access barriers that they encountered daily. A total of 153 pictures remained, out of 431, after the final selection of pictures that best communicated participants' experiences with accessibility. These pictures were accompanied with 95 narratives corresponding to the content of the pictures as well as the messages that the participants sought to communicate. The pictures were taken from 11 different physical and transportation environments. Evidence from the study demonstrates the existence of barriers in the built environment and transportation, which impact negatively on the psychological and social lives of persons with mobility disabilities. The need for the removal of identified barriers to empower persons with disabilities for sustainable development cannot be overemphasized. The paper therefore, concludes with recommendations targeting the government, social workers, and disability activists about strategies to improve on access to participation for persons with mobility disabilities.

Key words: Accessibility, barriers, Ghana, persons with disabilities, transportation.

Introduction

Globally, persons with disabilities struggle with access barriers on daily basis and such struggles impact greatly on their participation in mainstream society (Aldred & Woodcock, 2008; Casner-Lotto & Sheard, 2009; Lubin, 2012; Soltani, Sham, Awang & Yaman, 2012). This situation necessitated the inclusion of an article (Article 9) on accessibility by United Nations in the Convention on the Rights of Persons with Disabilities (CRPD), the human rights framework which aims at ensuring that persons with disabilities fully enjoy their basic human rights and fundamental freedom. The United Nations entreats state parties to put in place measures to ensure that the physical environment, transportation, information and communication technologies and systems are all accessible to persons with disabilities. This study focuses on the accessibility of built environment and transportation in Accra, Ghana.

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Physical Barriers

Globally, persons with disabilities encounter diverse physical environmental accessibility challenges in their daily lives. Several forms of physical barriers exist in built environment such as schools, hospitals, workplaces, shops and shopping malls, churches, theatres, restaurants, cinema halls, washrooms and other facilities such as water fountains, telephone booths and counters. Physical barriers can further be classified under *Surroundings of Buildings* and *Entrances to Buildings*. Examples of these barriers are inaccessible ramps, staircases, and storey buildings without elevators.

Surroundings of Buildings

Barriers to surroundings of buildings include unavailable, narrow or uneven sidewalks (Thapar, Warner, Drainoni, Williams, Ditchfield, & Wierbicky, 2004; Vergunst, Swartz, Mji, MacLachlan, & Mannan, 2015) and broken sidewalks and/or sidewalks overgrown with weeds. In other studies, sidewalks were reported to have no curb cuts or ramps (Rapengo & Ravaud, 2017; Thapar et al., 2004), which sometimes force persons with disabilities onto the main streets, which risks their safety (Lubin, 2012). Further, studies cite narrow sidewalks (Rapengo & Ravaud, 2017).

Entrances to Buildings

A variety of barriers to entrances of buildings are reported in the literature. There is evidence of storey buildings with no elevators (Badu, Agyei-Baffour & Peprah, 2016; Stevens, 2007) or inactive elevators (Thapar et al., 2004). Likewise, some structures lack ramps (Banda-Chalwe & De Jonge, 2014; Stevens, 2007; Badu, Agyei-Baffour & Peprah, 2017) or have ramps that are too steep or narrow (Banda-Chalwe & De Jonge, 2014; Stevens, 2007; Badu, Naami, 2014, Vergunst et al.; 2015), or ramps with obstructions (Banda-Chalwe & De Jonge, 2013).

Other structures lack stairways or have stairways that have no handrails (Banda-Chalwe & De Jonge, 2014). Additionally, inaccessible door entrances, such as narrow doorways for wheelchair users are identified as physical access barriers for persons with disabilities (Badu, Agyei-Baffour & Peprah, 2017; Rimmer, Riley, Wang, Rauworth & Jurkowski, 2004) who might have already struggled through surroundings of environmental barriers to reach the entrance. Heavy doors also challenge entrance access (Stevens, 2007; Chiwnadire & Vincent, 2017).

Transportation Barriers

Transportation plays a vital role in everyone's day-to-day life and life-chances through providing access to workplaces, schools, and other places. The same is the case for persons with disabilities. Many persons with, and those without, disabilities travel by public transit system. However, accessible public transit service, which mostly exists in developed countries, is said to be inadequate (Bezyak, Sabella & Gattis, 2017; Wu, Gan, Cevallos, & Shen, 2011) but virtually non-existent in less developed-countries like Ghana (Naami, 2014, Tijm, Cornielje, & Edusei, 2011; Vergunst et al., 2015).

It is noteworthy that the availability of accessible transportation services do not necessarily mean access for individuals with disabilities. Research shows that, for persons with disabilities, several factors affect access to transportation. The first issue relates to how easily persons with disabilities can safely navigate the pedestrian environment. Inadequate sidewalks, poor conditions of sidewalks (narrow, steep and obstructed sidewalks), inaccessible bus stops and

stations (unavailability of sidewalks/curb cuts/ramps), issues with intersections, street crossing and lighting were reported as restricting movement of persons with disabilities in the United States (Bezyak, Sabella & Gattis, 2017; Church & Marston, 2003; Erin, 2011), India (Devi et al., 2013), Malaysia (Soltani et al., 2012) and Japan (Stevens, 2007).

Other transportation challenges reported in the literature relate to the absence of functioning transportation equipment such as: the absence of ramps (Sheer, Kroll, Neri & Beatty, 2003) or use of ramps that will not descend or retract (Rapengo & Ravaud, 2017); lack of safety facilities (Sheer, Kroll, Neri & Beatty, 2003); inaccessible information for scheduling reservations; lengthy waiting and travelling times (Bezyak et al., 2017; Church & Marston; Zambia-Banda-Chalwe & De Jonge, 2013); cost of services (Church & Marston, 2003; Zambia-Banda-Chalwe & De Jonge, 2013); and reliability of services (Bezyak et al., 2017; Lubin, 2012; Rapengo & Ravaud, 2017; Wu, Gan, Cevallos, & Shen, 2011). The outcome is that some persons with disabilities in both developed and developing countries are compelled to rely on private transportation such as door-to-door transportation and taxi services, which is more costly (Banda-Chalwe & De Jonge, 2013; Sheer, Kroll, Neri & Beatty, 2003).

Inaccessible built environment and transportation negatively impact on the full-effective participation of persons with disabilities in mainstream society (Hurd, Morrow, Kaufman & An, 2009). Persons with disabilities, as compared to those without disabilities, travel less often and rely mainly on private transportation (which is more costly) compared to their able-bodied counterparts (Banda-Chalwe & De Jonge, 2013; Penfold, Cleghorn, Creegan, Neil, & Webster, 2008). Access barriers also greatly affect the economic, educational, political and social lives of persons with disabilities. Studies in the United States demonstrate that the lack of accessible transportation is the greatest factor affecting the employment (Aldred & Woodcock, 2008; Casner-Lotto & Sheard, 2009; Lubin, 2012), education, healthcare, and overall social inclusion of persons with disabilities (Aldred & Woodcock, 2008). In Malaysia, persons with disabilities reported insecurity as a consequence of inaccessible transportation as they boarded and alighted from inaccessible vehicles (Soltani et al., 2012).

In summary, environmental barriers persist not only in developing countries but in the developed world as well. These barriers deter persons with disabilities from effectively participating in mainstream society. However, little is known in the literature about accessibility issues persons with disabilities encounter in their daily lives in the Accra Metropolis of Ghana. Available literature focuses broadly on assessing the general needs of persons with physical disabilities, while some focus mainly on access to healthcare for persons with various forms of disabilities with no reference to transportation. However, the current study centres mainly on physical and transportation access for persons with mobility disabilities, using participatory approach-photovoice (see method section for more information). This specific focus will allow for detailed exploration and a better understanding of how persons with mobility disabilities experience physical and transportation access barriers.

Methods

Photovoice methodology, which typically uses a blend of photographs and narratives (Wang & Burries, 1994), was used to enable participants to tell their stories about access barriers that they encounter daily. The method is also empowering as participants part take in the data collection and analysis. Ten persons with various forms of mobility disabilities from the Accra Metropolitan Area were purposively recruited from three main disability organizations: (1) Ghana Society of the Physically Disabled, an association of persons with physical disabilities-

Accra Central Chapter; (2) the Ghana Disability Forum, an umbrella organization for all persons with different forms of disabilities, individuals as well as organizations which have interest in advocating for disability rights; and (3) the Centre for the Employment of Persons with Disabilities, an organization that seeks to advance the employment of persons with disabilities. The leaders of these organisations were contacted about the study. There was an attrition due to ill health and that participant was replaced by another of the same gender. The sample size allowed for in-depth discussion and analysis of data (Palibroda, Krieg, Murdock & Havelock, 2009). The ages of participants ranged from 26 to 47 years, with a standard deviation (SD) of 7.6 years. The mean age was 36.5 years. Six of the participants were male and four female. Regarding participants' educational levels, two had no education, four had basic education, one each had basic and secondary education respectively, while two had tertiary education. Some participants used mobility aids. Four participants used wheelchairs, four used crutches, one used prosthesis for below the knee amputee and one participant's mobility was challenged by his hunched back.

Data Collection

To facilitate data collection and data analysis for the study, two half-day workshops were held. The first workshop was used to train participants in basic photography, ethics, photo captioning, narration and analysis of the content of the photos. Participants were informed about the nature of the research and what was required of them. After which their consent were taken. The camera were then given to the participants. Basic photography lessons were given by an expert photographer after which the researcher took the participants through the workshop manual which covered topics that focused on what photovoice is, guidelines for taking pictures, relevant photography subjects for photovoice, dos and don'ts of taking pictures (including ethical issues), examples of places and things whose pictures could be taken and what exactly to look out for when taking pictures to convey challenges with access barriers. Photo captioning and narrations were also discussed. Sample photovoice pictures and narrations from the workbook of Gagne, Bowers & Rusinova (N.D) entitled "Combatting Prejudice and Discrimination through Photovoice Empowerment" by persons with psychiatric disabilities from Boston, as well as sample pictures of access barriers taken by the researcher were discussed. The exercise sought to enhance participants' understanding of the photovoice concept.

After the first workshop, the researcher made several phone calls to participants to discuss their experiences with picture taking, captioning and narrations. Through these calls, the researcher realized that writing down the narrations was very time consuming for the majority of the participants and was hampering data collection. It was also imperative for the researcher to back-up the images taken by participants. For these reasons, the researcher decided to visit each of the participants to download their pictures and audio record the narratives of those who required assistance. Out of the ten participants, two wrote out their full narratives independently. An additional two participants wrote some portions of their narratives. This is not surprising given the limited educational levels of study participants. And, in fact, this gives an indication of the general educational levels of persons with disabilities in Ghana (Naami, 2014, 2012). It is important to note that, during these visits, participants were asked to choose the pictures which they wanted to include in the study and which also best demonstrated their daily accessibility struggles. They were also asked to indicate meanings and messages attached to their photos as well as captions. All of these were audio recorded and transcribed. The transcriptions were returned to the participants to confirm their stories. Member checking is important in checking to ensure trustworthiness of a study (Lincoln & Guba, 1985). Data was

collected over a two month period.

Data Analysis

The second workshop was for data analysis. Overall, 431 pictures were taken (average of 43, minimum 10 and maximum of 110 pictures per participant). After their final selections, there was a total of 153 pictures. Overall, there were 95 narratives, since sometimes one narrative corresponded with two or more pictures. Participants were grouped in groups of three to discuss their pictures and narratives, which were projected on a screen. The pictures were grouped under various picture environments, which are discussed in the results section. In smaller groups, the content and context of the photographs, as well as the meanings and messages attached to the pictures, were discussed and then related to their collective experiences and messages they wanted to communicate to the general public (Nowell, Berkowitz, Deacon, & Foster-Fishman, 2006; Palibroda, Krieg, Murdock & Havelock, 2009; Wang, 2006). The SHOWED framework was used in the analysis (Palibroda, Krieg, Murdock & Havelock, 2009). 'SHOWED' is an acronym that refers to the following: What do you See here? What is really Happening here? How does this relate to Our lives? Why does this strength or problem/concern exist? What can we Do about it?

There was a plenary group discussion where issues and recommendations arising from the group discussions were codified into themes. The themes which developed from this session were later rearranged by the researcher based on the context analysis and the narrations. The second workshop was audio and video taped, with participants' permission, to facilitate content analysis and to serve as reference. The researcher obtained ethical clearance (reference # ECH: 027/17-18) for the study from the University of Ghana. The quotations marks indicate participants' initials followed by the picture number and the type of disability.

Results

Pictures were taken from a variety of environments depicting places where participants resided and frequented. Eleven different types of environment were captured in photos demonstrating access barriers which participants encountered daily. These environments included: (1) Homes/apartments and their surroundings, (2) Transportation and its environment, (3) Offices and workplaces, (4) Schools, (5) Banks, (6) Churches, (7) Hospitals, (8) Entertainment and events venues, (9) Businesses, (10) Street crossings and traffic lights, (11) Sidewalks. Two main categories of access barriers were identified from the pictures and grouped under *physical barriers* and *transportation barriers*. This paper focusses on describing and discussing these barriers.

Physical Barriers

Physical access barriers are in three forms: surroundings of environments, entrances to buildings and individual rooms inside buildings including the inside arrangements of rooms.

Surroundings of Environments

Participants reported encountering several environmental challenges travelling from their homes, through walkways and pathways to the major roads and the surroundings of their destinations. Below is a discussion of some surroundings or environments captured in the photos.

Inaccessible Path/walkway. Walkways connect to main roads, but the pictures of walkways taken in this study were mostly muddy, rocky, hilly, and sandy; others had potholes which were waterlogged after rains. The nature of these walkways obstructed the movement of participants. While some participants, especially those using crutches, reported having fallen several times managing these barriers, others said they were hurt from the falls.



Figure 1: Rocky Pathway

This is the pathway from my house to the bus stop and the salon. The road is very rough and difficult to walk on. I have fallen there several times. So, I have learnt to be very careful whenever I use the road. Regardless, I still fall, and anytime I fall, I feel very bad because everybody falls at a point in time in life, but whenever I fall, I feel very different because people stare at me and feel pity for me. I would be happy if the path is tarred or levelled to avoid all of this. (AF10, female, uses crutches).

I use this pathway regularly from my house to the main streets to continue my journey to wherever I choose to go. It is rough and rocky and difficult for me to use. The nature of the pathway obstructs my movement and sometimes makes me fall. I have fallen not once or twice, but countless times. When it happens like that, I look at my surroundings to see if anyone is looking at me. It is shameful when that happens. One day, the fall resulted in an injury. I went straight home, cleaned the wound and took care of myself. I couldn't complain to anyone. At that moment, I felt bad that even the road that I COULD use is rough. To me, it means everything around me is not working. (SA3, female, one leg amputated).

Sidewalks. Sidewalks are useful for the safety of pedestrians and allow for their free and easy movement. They also allow the free flow of traffic when pedestrians use them because they will not crowd the roads. Sadly, the study discovered that sidewalks were virtually non-existent. The few existing sidewalks were not thorough. For example, in certain cases a sidewalk began at one side of the road and ended in the middle of the road, while another began from the middle. It is worthy to note that the majority of the sidewalks did not have curb cuts, making it difficult for persons with mobility disabilities to access them. In addition, evidence from the study indicated that the few existing sidewalks were broken, inhibited with obstacles such as poles, gutters and potholes while others were very rough to use. All of these compelled the participants to use the major roads, endangering their lives as captured in some of photo captions, "My life matters," "It's over" and "Where should I pass?" See figure 2 relates to the caption "Where should I pass?" and the narrative below it expresses the participant's feelings.



Figure 2: Inaccessible Sidewalk

This pavement is on the road from under the bridge in Ashaiman. As you can see, there are several gutters in it, making it difficult for me as a wheelchair user to use that road. I mostly use the major road regardless of the safety concerns. But when it rains, even the major road presents a much greater challenge and becomes unmemorable, crowded with sand. I remember when they were working on this road, I personally took it upon myself to talk to the contractors to ensure that the pavement would be accessible but they did not mind me. I feel worried that I could be knocked down by a car one day while using the road. This road is the major route from my house to the bus station. But because of this barrier, I do not go out a lot. (MD1, female, uses wheelchair).

Open Gutters and Split Covers. Closely related to inaccessible pavements are open gutters and drainage systems noted to be a huge challenge to everyone in Ghana. Anecdotal evidence indicates the existence of many uncovered gutters, which were also captured in this study. Open and semi-covered drainage holes were also identified in this study as barriers to physical access. An interesting finding regarding the drainage system in Ghana is the use of split metal to cover gutters. Participants, especially those using crutches and wheelchairs said that they were sometimes trapped by those covers. Crutches and front wheels of wheelchairs got stuck in the splits, causing falls and hurts to users of these assistive devices. One participant narrated his order trapped in a split metal cover (see figure 4 below) as follows:

One day, I nearly lost my life on my way to write an exam. When I got to this split metal drain cover, the front tire of my wheelchair got stuck in there and I lost my balance and fell out of my wheelchair. You can see that the entire area is rough due to the broken pavement. I hurt my arm but I couldn't go back to the hall to rest because I had to go and write a two and a half (2 ½) hour exam. In fact, I wrote that exam with so much pain which lasted beyond the exam time period. Sometimes, I had to pause and relax the arm to ease the pain before continuing. I felt very humiliated because many people were passing by and I had to crawl from the ground, like a child back into my wheelchair. (SM 7, Male, uses wheelchair).



Figure 3: Uncovered Gutter



Figure 4: Split Metal Cover

Entrances to Buildings and Individual Rooms

After spending a great deal of time moving from their home surroundings to bus stops and into buses, as well as other environments they frequented, participants encountered additional challenges accessing buildings. Types of built environment captured in this study were public offices, banks, hospitals, events and entertainment venues, shops and shopping malls, schools, homes/apartments and churches. The buildings were inaccessible because of the absence of elevators and ramps; the presence of staircases and steps, which sometimes were too many; and narrow and heavy doors which were positioned to open to the inside (see figures 5 and 6 below). The following narrative is relates to figure 5 below.

This is the entrance of the Courtyard Ministry International at ATTC near Circle. I went there for the inauguration of the church. The Senior Pastor and founder is one of my bosom friends so he invited me for the service. But when I got there, I had to be carried into the church like a sick person due to the slippery tiles and the huge stairway with no rails. I felt very embarrassed given that I was one of the many clergymen invited for the programme and each one of them walked in with dignity and respect but I had to be carried while everyone starred at me. (PC1, Male, uses crutches).

Another narrative relating to inaccessible entrances to buildings is given below:

There are also four wide steps without rails to support me to get in and out. Each time I go to the church, someone has to help me to enter. And when there is no one around or if I don't find a stronger person, due to my weight, I have to wait till I find someone strong enough to help me up the steps. It is almost impossible for me to get into the church by myself. It is so sad that I don't have free movement to and from the house of God. The tiles also make it increasingly difficult to go to the restroom in that church. Whenever I am pressed to go to the washroom in the church, no matter at what point during the service, I always

have to wait till the church service is over. The church should be a place where everyone can have free of movement but I don't have. This kills my spirit with respect to worshipping God. The eagerness to go to church to worship God and to enjoy the events goes away anytime I come to this church. It makes me feel sad that I cannot easily and freely worship God because the anxiety becomes a huge hindrance. I feel embarrassed and dependent on others. (SA1, female with one leg amputated).

Elevators, Staircases/Steps/Ramps

It was identified that many public buildings were inaccessible. Storey buildings lacked or had no functioning elevators. In the absence of elevators, participants struggled to enter buildings. Those who used crutches held onto handrails of stairways to access the building. Imagine someone going to the third or fourth floor of a building on his/her crutches, which was the case in this study for those using crutches. Furthermore, the study identified that some of the stairways had no handrails, which posed another challenge for those who used crutches because it was extremely difficult and dangerous to climb those stairways (see figure 5).



Figure 5: Staircase without handrail

The entrance to some buildings had steps. It is worthy to note that some organizations have attempted to put up access ramps for easy access to their buildings. However, the study revealed that majority of such ramps were either too steep or narrow, making them unusable. Other ramps were infested either with and/or ended with obstacles (see figure 6) and the related narrative beneath it. Both circumstances rendered the ramps inaccessible.



Figure 6: Obstructed ramp

The Common Fund Administrator's Office is housed in this building. The entrance is not accessible. There is a ramp to ease accessibility but that also seems to be problematic as it ends in a fence, taking away the access part of the ramp. Once you enter the building, there is a huge stairway with some unique stairs that complicate the situation. These steps come with covers which obstruct movement. The covers create some kind of holes in the bottom of the topmost part of the steps. This retracts me from moving my legs from one step to the other while holding unto the rail to help lift myself up. All of these make movement on this kind of stairway even harder. I have been there for a couple

of meetings and I was always exhausted by the time I got to the office for the meetings. It is interesting how the Common Fund Administrator would call for meetings of Organisations of Persons with Disabilities on a storey building. This can only happen in Ghana. It is so frustrating. (CK3, male, uses crutches.)

Another challenge that relates to stairways, steps and ramps is the use of smooth and slippery tiles to beautify edifices. Smooth tiles were captured almost everywhere in the study environments (see figure 7). Smooth and slippery tiles were identified as a major access barrier because they could be slippery even without water, hence, water could worsen the situation, especially for those who use crutches. Such persons could easily fall when the grips of their crutches (usually rubber grips) come into contact with slippery smooth tiles. Due to these inconveniences, persons with mobility disabilities who used crutches were sometimes compelled to allow themselves to be carried into buildings.



Figure: 7 Smooth Tiles

Smooth tiles used for toilets and bathrooms were also identified as fatal for persons with mobility disabilities. Bathrooms in our part of the world are synonymous with water since most times they are small walk-in showers with not much space for persons with mobility disabilities to keep their assistive devices and transfer in and out (see figure 8). All of these impact on the time spent in showers by persons with mobility disabilities as they have to carefully manoeuvre their way into showers to minimise the risk of falls and hurts.

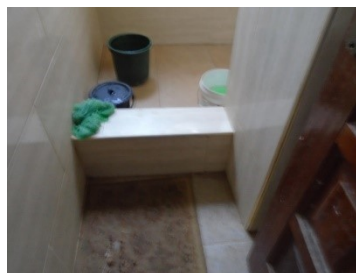


Figure 8: Inaccessible bathroom with smooth tiles

Doors

Narrow doors were identified as access barriers for persons with mobility disabilities, especially those who used wheelchairs (see figure 9). Some of the participants had to crawl into bathrooms and toilets and other environments because the doors were not wide enough for wheelchairs to pass through as expressed in the narrative below.

The toilet cubicles themselves are accessible, though the turning area inside is small. However, the doors are narrow and not disability friendly for wheelchair

users. So, anytime I have to attend to nature's call, I have no option than to park my wheelchair outside of the toilet rooms and crawl in and out. I have had to buy gloves for this purpose which I always use whenever I go to the toilet. This is to help prevent any infections. (SM4, male, uses wheelchair).



Figure 9: Toilet with narrow doors

Inside Arrangements of Rooms

Inside arrangements of individual rooms in any building should be such that there are clear floor and ground spaces for movement, especially for wheelchair users. However, the study found that interior arrangements of offices, churches and other places were not user-friendly for persons who used wheelchairs. The floors and grounds were crowded with obstacles such as chairs, boxes, tables, open wires, and steps. Choristers' sitting areas and platforms in churches were surrounded with steps (see figure 10).

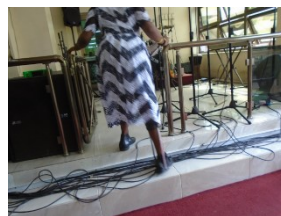


Figure 10: Wires that are not trunked

Transportation and Its Environment

Transportation pictures captured buses and trotros (minibuses) while the environment focused on bus stops, street crossing, pedestrian crossing and traffic lights. The inside of a trotro is shown in figure 7.

Buses and Trotros

Three accessibility issues were identified in relation to buses and trotros: inaccessible entrances, crowded aisles and unsuitable seating arrangements. The entrances of the buses and trotros were largely inaccessible, compelling some persons with mobility disabilities to either crawl or be carried into such vehicles. Either way of entering the buses is associated with risk: crawling could expose the passengers with disabilities to infectious diseases while falls and hurts could result from being carried.

I cannot go wherever I want to go due to inaccessible transport. I always have to crawl into buses. The buses are usually dirty especially, when it rains, because the dust/mud accumulated from the passengers' feet makes the entrances as well as the insides dirty. I usually have to leave my wheelchair behind and crawl into buses. I feel so embarrassed because I get dirty by the

end of my trip. I have two other options; one of those two options is to wait for a “trotro” which usually would not pick us (persons with disabilities in wheelchairs). So I have to wait for a longer period of time for a driver that has the heart to accommodate me; ask the impatient passengers to wait for me to get in, take my wheelchair and store it till I arrive at my destination and give it back to me. The other option is to take a taxi which is usually very expensive and I don’t have money to patronise that service. (MD3, female, uses wheelchair).

Closely related to the entrance of buses are the small aisle spaces which were mostly crowded and difficult to access (see figure 11). The seating arrangements are such that there is not enough room insides buses/trotros for persons with mobility disabilities.



Figure 11: Inside of a Trotro

Bus Stops

Many bus stops, located in inconvenient places, were mostly not accessible to persons with mobility disabilities. The bus stops lacked curb cuts to enable persons with mobility disabilities to use sidewalks/stops to avoid the danger of being run over by buses or motor bicycle riders. In addition, some of the bus stops did not have shelters and those which had shelters were not accessible due to steps. This raises the question of what persons with mobility disabilities would do when it rains or when the sun is hot, given that they usually wait in transit for longer times. Also, drivers usually did not pay attention to where and how they parked for passengers to board their vehicles. Some parked at places not designated as parking spots. All of these impact on the safety of persons with mobility disabilities.



Figure 12: Inaccessible bus stop

Traffic Lights and Street Crossings

Participants reported that the traffic lights had short programmes and that crossing dual

carriageways amidst impatient pedestrians and their loads could be problematic. So sometimes they were trapped in the middle of the roads. The other aspect of insecurity arising from traffic lights, which affected both wheelchair and crutches users, was due to impatient drivers who did not yield for pedestrians when traffic lights turned green for pedestrian-crossing.

This traffic light is around the Flagstaff House. I use this road to go to TV3. I go there often for the Music, Music Show rehearsals and to present my music products for promotion. Anytime I alight from the car, I need to cross to the other side of the street before I can go to TV3. The road is double and I believe the time programmed for pedestrians to cross the road is not enough to allow a person with a disability to cross the road in the mist of other busy pedestrians, including those carrying load. Sometimes, when I get to the middle of the road, I have to stop and give way to vehicular traffic because the light would indicate green for vehicles to move and the impatient drivers would not wait even for a second for me to finish crossing. Let's be patient for persons with disabilities. They may sometimes be a bit slow due to their condition. (PZ5, male, uses crutches).

This traffic light is at Accra central. I took the picture because whenever I pass there and the pedestrian lights come on, vehicles continue move instead of yielding to pedestrians. Although it is your right as a pedestrian to cross, it is difficult to do so because you have to fight with the drivers. (EL9, male, uses wheelchair).

Discussion

The study sought to explore physical and transportation access barriers that persons with mobility disabilities experience daily in the Accra Metropolis using a photo voice methodology. Participants identified the existence of environmental barriers beginning from the homes of participants, through their surroundings and means of transportation to their destinations. The barriers were classified as *physical barriers* or *transportation barriers*. Physical barriers are further grouped under surroundings of environment, entrances to buildings and inside arrangement of buildings. Inaccessible pathways, sidewalks and open gutters restricted access to the surroundings of participants' environments, validating other African studies (Badu et al., 2016; Banda-Chalwe & De Jonge, 2013; Vergunst et al., 2015). The study outcome also indicated that split covers impeded access for participants.

Participants noted that entrances to buildings which they frequented were inaccessible due to a number of factors, which reflect findings from previous studies. These included inactive elevators or the absence of elevators (Stevens, 2007); steps and stairways with no handrails (Banda-Chalwe & De Jonge, 2013); inaccessible ramps (Banda-Chalwe & De Jonge, 2013; Rapengo & Ravaud, 2017; Stevens, 2007); narrow doors (Sheer, Kroll, Neri & Beatty; 2003) steps and stairways in front of buildings (Naami, 2014, Tijm, Cornielje, & Edusei, 2011). Steps and stairways were also reported in France as impediment to accessing buildings (Rapengo & Ravaud, 2017). Some of the steps and stairways were smooth and slippery due to the use of tiles to beautify the edifices. Beautification, which is a characteristic of urban development, is seen to negatively impact on the mobility of persons with mobility disabilities in the Accra Metropolis. Smooth and slippery tiles were identified as creating a major access barrier outside and within home environments. Smooth and slippery tiles within the home environment, especially in toilets and bathrooms, were described by participants as fatal: "A way to kill me"

and “Double jeopardy.”

Participants also identified that entrance barriers limit persons with mobility disabilities to only two choices when attempting to enter buildings, crawl or be carried, which echoes the findings of Banda-Chalwe & De Jonge (2013). Participants expressed both choices as negative experiences: “*I am a person, not an object to be carried,*” “*Crawling takes away my dignity,*” “*Depend on people always,*” “*I felt devalued,*” “*Carried like a sick person,*” and “*I am infantilized.*” In addition to surroundings and entrances of buildings, the study demonstrates that inside arrangements of individual rooms within buildings hindered access for persons with mobility disabilities. This study found obstacles such as chairs, boxes, tables, steps, etc. to be the cause of inaccessible rooms.

Access challenges associated with transportation and its environment relate to the means of transportation and the transportation environment. Although transportation plays a vital role in everyone’s life, including the lives of people with disabilities, since people need to get to their workplaces, schools, medical appointments, church, and to run errands, there was no single accessible transportation system in Ghana until very recently (23rd September, 2016) when the government introduced the Bus Rapid Transit (<https://newsghana.com.gh/ghana-pilots-bus-rapid-transit-to-improve-urban-mobility/>). This transportation service officially commenced in November 2016, but the service is limited to some parts of the Accra Metropolis. In addition, none of the study participants reported having used the Bus Rapid Transit. And, the operation of the transit service seems to have ceased, which was confirmed when the sector Minister took his turn to “Meet the Press” to discuss the state of sector on February 19th, 2019. Nevertheless, participants in this study suggest that transportation barriers exist in the Accra Metropolis (Naami, 2014; Tijm et al., 2011).

Issues relating to transportation were classified according to the type of transportation and/or the transportation environment. Barriers associated with the medium of transportation identified in this study (buses and *trotros* – minibuses) include inaccessible entrances to buses and *trotros*, crowded aisles and unsuitable seating arrangements. Participants identified that inaccessible entrances to buses and *trotros* compelled some persons with mobility disabilities to either crawl or be carried into buses and *trotros*. Crawling could expose passengers with mobility disabilities to infectious diseases while they could suffer falls and hurts from being carried.

Crowded aisles and seating arrangements which do not allow enough room for persons with mobility disabilities were identified by the participants as issues and were reported to have caused fatigue and ill health for some of the participants as expressed in the narrative below. Front seats of buses and minibuses, mostly spacious, are typically occupied by able-bodied people who race ahead of persons with disabilities to occupy such seats. Although Section 29 of the Persons with Disability Act (715) requires that two seats are reserved for persons with disabilities in every commercial vehicle, this requirement is yet to be adhered to.

It is difficult to get in and out of “trotros” (mini vans). People have to always help me whenever I board a trotro. The seat arrangement is also not helpful because it is not spacious enough. The front seat is usually very helpful because it is spacious but most times I don’t get it. Though the law says I should be given the front seat because of my condition, no one heeds and adheres to this law.

By the time I struggle through the crowd and the long queue to make my way to the front seat, someone would already have occupied the place and would not even mind me. So, I make my way to the back, through the inaccessible entrance, crowded aisle, to the tiny seating area. Whenever I go for a long journey in such a vehicle, I develop bodily pains. It's like carrying several crosses. (KG9, Male, Hunched Back).

With regards to transportation environment, the study cites inaccessible bus stops and stations which were also reported by Bezyak, Sabella & Gattis (2017) in the United States but the authors did not specify what the exact barriers were. Inaccessible bus stops from this study arise from the lack of curb cuts to use sidewalks. Also, absence of shelters or inaccessible shelters raise the question of what persons with mobility disabilities would do in the event of unfavourable weather conditions such as rain or extreme heat from sunlight, given that they usually wait in transit for longer periods. Busses parking at inconvenient places and locations and overly short timing for pedestrian crossing at traffic lights were also identified as barriers to accessibility by participants in this study. Further, the study suggests that some drivers did not yield for pedestrians when traffic lights turned green for pedestrians to cross.

Environmental barriers were also identified by participants and were reported to have caused study participants to travel less often (Penfold, Cleghorn, Creegan, Neil, & Webster, 2008). This suggests that persons with mobility disability are more likely to use commercial transport services such as taxi services, which are more costly (Banda-Chalwe & De Jonge; Vergunst et al., 2015). There is also evidence that environmental barriers (both physical and transport) caused falls and hurts (Banda-Chalwe & De Jonge; 2013). However, in Banda-Chalwe & De Jonge's (2013) study, falls and hurts were restricted to the built environment. Environmental barriers further exposed persons with disabilities to threats to their security and safety (Banda-Chalwe & De Jonge, 2013).

Conclusion

Results from this study cannot be said to be the general experiences of persons with mobility disabilities with environmental barriers in Ghana, or even the Accra Metropolis. This is so because of the choice of sampling technique (non-probability sample) as well as the sample size (10). However, the substantial evidence of barriers documented in this study as well as their impact on the lives of persons with mobility disabilities cannot be overlooked. The detailed documentation and discussion of the nature of barriers have policy and practice implications which could help reduce, if not eliminate, environmental barriers for persons with mobility disabilities in Ghana. There is a need for Ghana to put in place measures to make sure that the built environment and transportation systems are user-friendly for persons with disabilities. This could in turn ensure that persons with mobility disabilities can fully enjoy their basic human rights and fundamental freedoms as well as participate freely in the society. All of these are necessary for the achievement of the Agenda 2030 Sustainable Development Goals' overarching aim of leaving no one behind.

Ghana enacted the Persons with Disability Act 715 in 2006, ratified the CRPD in 2006, and developed Accessibility Standard for the Built Environment in 2016, and very recently, 2018, a Building Code was also developed. But, persons with disabilities continue to grapple with access barriers regardless of these policies. It is imperative that the government commits resources for the implementation of these policies. Political will to ensure enforcement of these

policies is also recommended. These measures could, perhaps, promote the full-effective participation of persons with disabilities in Ghana.

Social workers and disabilities activists could use outcome from this study to create awareness about the various types of built and transportation barriers as well as to advocate for accessibility for persons with disabilities. The environment is a critical factor for participation for everyone. Accessible transportation and environment are more likely to increase participation of persons with disabilities and perhaps reduce inequality among them.

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Biographical Notes

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