

## Physical Accessibility and Health Care Use for Women with Physical Disabilities: A Case Study Approach

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### Abstract

Cancer burden lies heavily on women with physical disabilities (WPD) because WPD are much less likely to receive preventive care. This disparity of use of cancer screening is directly linked to the inaccessibility of health care clinics, which often arises from obstacles in the physical environment. The purpose of study was to gain information regarding physical accessibility of a health care clinic for WPD. The study was set up as a two-part case study of a single outpatient health care clinic. The first part of the study utilized two checklists which were used to manually measure the accessibility of the clinic by a trained research assistant. These checklists included the Outpatient Health Care Usability Profile and the Kentucky Cabinet Survey. The clinic was found to be usable for WPD in all areas except parking, signage, controls, telephones, counters, and exam rooms. The second part of the study included interviews of two WPD who were the patients at the measured clinic to gain perspective on personally experienced barriers within the clinic. They identified the use human resources as means to overcome obstacles in the clinic. Implications for this study include the removal of barriers found to impede accessibility in the clinic and training of staff to assist WPD with transfers.

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### Introduction

Cancer is the leading cause of mortality among women with physical disabilities (WPD) (Schopp, Sanford, Hagglund, Gay, Coatney, 2010). Although many women die annually from cancer, WPD are thirty percent more likely to die than women without disabilities (McCarthy, Long, Chirikos, Li, Drews & Iezzoni, 2006). In 2009, the United States Department of Health and Human Services collected data showing a higher prevalence of breast cancer among WPD than woman without disabilities within the US.

It is understood that WPD face major disparities in the receipt of health care (Harrington, 2009). Furthermore, increased degree of severity in disability tends to have poorer access to certain preventive health services (Diab, 2004). Elimination of disparities and improving the health of all groups is one of overarching goals of *Healthy People 2020* of the Center of Disease Control and Prevention (United States

Department of Health and Human Services, 2009). Thus disparities between WPD and those without disabilities may contribute to health inequalities in access to care.

Regular primary health care screenings have an impact on the detection of stages of cancer. Women who schedule routine mammograms and Papanicolaou (Pap) tests will most likely detect cancer at an early stage. WPD are much less likely to receive preventive care (Drew and Short, 2010). As a result WPD have a greater chance of delayed detection of cancer than women without disabilities. Previous research has indicated that the disparity of utilization of cancer screening is directly linked to barriers to WPD. Some of these barriers include time allotment for clinical visits, insensitivity or negative attitudes of clinicians, and providers' lack of knowledge about needs of WPD (Harrington, Hirsch, Hammond, Norton, and Bockenek, 2009).

Many times WPD are viewed by clinicians as having shorter life expectancies, and are made a low priority for health care screenings. Clinicians who lack the knowledge of proper care for people with disabilities often schedule an inadequate amount of time for healthcare visits. If clinicians do not have the time to help with mobility transfers, and other needs, women with disabilities do not receive sufficient care (Henry J. Kaiser Foundation, 2003).

WPD also face the inaccessibility of health care clinics, which often arises from obstacles in the physical environment. As mentioned in the Healthy People 2020 initiative, a major area of concern is improving opportunities for people with disabilities by creating barrier-free environments. In order to meet accessibility needs, facilities must meet American Disability Association (ADA) guidelines. Clinics must offer an appropriate number of handicapped parking spaces, generous widths of entrances, hallways, and elevators, and appropriate height of tables.

Because WPD have difficulty entering and using a health care facility encounter such obstacles in the environment, they are less likely to receive primary screenings such as mammograms. Without proper care from clinicians, women with mobility disabilities are often unable to stand for extended periods of time for this type of testing. Furthermore, they have difficulty undergoing mobility transfers to the exam table for Pap tests, so they frequently go without cancer screening. Although there is vast knowledge on clinic recommendations for WPD, the barriers that are encountered in the clinic are less understood.

This study utilized the socio-ecological model (McLeroy, Bibeau, Steckler, and Glanz, 1988) as a framework to understand the factors underlying inaccessibility issues. This model examines the influence of multiple levels associated with behaviors and conditions; the levels that are examined as factors impeding access to cancer screening in this article include intrapersonal and institutional elements. By examining these factors across multiple levels it

allows a full-spectrum view of the disparity of cancer screening faced by WPD. The intrapersonal level includes lack of knowledge on behalf of health care providers about specific needs of WPD. The institutional level is the leading level of concern highlighted in this paper: it includes the physical barriers in the clinic which impede access. This approach has been suggested by researchers to be important in explaining the dynamics that affect rates of cancer screening (English, Fairbanks, Finster, Rafaelito, Luna & Kenned, 2008).

The purpose of this case study is to obtain information regarding institutional barriers, especially the physical accessibility experiences of an outpatient health care center. This current study was initiated as an extension on previous intervention research relating to preventive screening for WPD which focused on accessibility barriers on the individual level. The second author and colleagues have developed the Promoting Access to Health Services (PATHS) intervention was based on published guidelines for health promotion interventions for people with disabilities (Drum, et al., 2009) and the participatory process during intervention development (described next) (Suzuki, et al., 2012). PATHS was a 90-minute, small-group, participatory workshop for uninsured patients in a university medical setting with six months of structured telephone support to target the individual level. This workshop included: building skills for communicating with health care providers; overcoming barriers to screening; setting goals; and initiating change, in addition to education about breast and cervical cancer screenings and recommendations. Barriers to health care on the individual level were found to be lack of information about screenings, taking steps to initiate change in poor medical habits, and lack of education on the importance of screenings. (Peterson, Suzuki, Walsh, Buckley, & Krahn, 2012). The findings of this study will probably suggest possible additional strategies of overcoming barriers on an institutional level especially physical inaccessibility of clinics, adding to individual level findings of accessibility barriers from the PATHS intervention.

## Methods

### Phase One: Building Inspection

**Characteristics of Researcher.** The research assistant was a student of the Doctor of Physical Therapy program at the time of the study, and was also a daughter of a muscular dystrophy patient. The assistant worked with WPD at a medical center in therapy services and had completed Human Subject training. The second author, an experienced researcher, supervised and mentored the first author regularly.

**Procedure.** This study is a two-part case study conducted at a single health center. The first stage in the case study involved the assistant conducted a manual building inspection of doorways, clinic rooms, bathrooms, passageways, tables, drinking fountains, and telephones of the health center in June of 2010. The measurements were compared to normalized measurements for accessible buildings which assessed the accessibility of the health center.

The Health Center is an affiliate of a major health system in mid-eastern Michigan and was selected as the only clinic investigated for this study. A case study of one clinic that provided care for uninsured patients was used because it was important to maintain consistency of populations for this study and the previous PATHS intervention which also utilized clinics that served uninsured patients. This clinic provides primary care and physical therapy for uninsured patients, ages 19 to 64. This is a community sponsored healthcare clinic which provides preventive screening (including but not limited to cancer screenings) on a regular basis. This clinic is the only clinic in the area which serves uninsured patients and sees many patients with physical disabilities. Targeting a population with a large disparity in health care increased the likelihood of recruiting patients with physical disabilities.

The assistant used measurement tools such as a tape measure and measuring wheel to complete the assessment. Measurements for the assessment were taken and recorded in feet and inches. The assessment of the outpatient facility

took the research assistant four and a half hours to complete.

**Measures.** Measurements for this study were collected using the Kentucky Cabinet Usability Checklist (KCUC) and the Outpatient Health Care Usability Profile, version three (OHCUP). The KCUC offers measurement criteria to assess the usability of public health care facilities. The KCUC is an older and less rigorous assessment of health care facilities as compared to the OHCUP. The OHCUP is an innovative measure designed to assess the usability of primary care clinics for people with disabilities (Drum, Davis, Berardinelli, Cline, Laing, Horner-Johnson, & Krahn, 2008). This checklist is the up and coming gold-standard for clinic usability; it uses the same caliber of assessment, only it is more specific to health care facilities. The OHCUP has been used in a University of Kansas study; Research and Training Center on Measurement and Interdependence in Community Living to ensure accessibility in their health care facility (White, 2012). A manipulated version of the OHCUP was also used across Oregon for a health campaign developed by the Centers for Disease Control to promote breast cancer mammography screening for women with disabilities. OHCUP was created by using pieces of the Kentucky Cabinet Usability Checklist to improve assessment of outpatient clinics and was found to be clinically useful to determine barriers impeding access to health care.

Kentucky Cabinet Usability Checklist was provided by the Department of Vocational Rehabilitation to identify physical and communicational barriers encountered by people with disabilities in health care facilities (Kentucky Department of Vocational Rehabilitation, 2000). The Kentucky Cabinet checklist was used to assess: signage; walks, curbs, and ramps; and parking of the exterior building and of the interior building: emergency procedure; entrances and stairs; public restrooms; telephones and water fountains; and meeting-rooms.

Outpatient Health Care Usability Profile V3 consists of three external sections: parking; curbs, walks and ramps; and signage and

controls. The parking section includes questions regarding van accessible parking spaces, vertical van clearance, and loading zones. The walks curbs and ramps section includes questions regarding stability of travel routes, width of entrance routes and amount of unobstructed wall space. The signage and controls section asks questions regarding height of signs, lettering and finishing on signs, and operation of controls.

The OHCUP consists of two internal sections; public facilities and exam rooms. The public facilities section measures widths of passageways, elevators, and whether restrooms are large enough to comfortably maneuver a wheelchair, and accessibility of telephones and seating in waiting rooms. The exam rooms section measures passageways, height of adjustable exam tables, and widths of floor space.

An accessibility percentage was calculated by the number of YES and non-applicable (NA) answers divided by the total items per section. It is important to understand the difference between YES and NA answers. Based upon OHCUP criteria NA was treated as YES to avoid giving the clinic a lower score due to unavailability of features.

**Statistical Analysis.** Descriptive statistics were used to analyze the accessibility of the health clinic. After the research assistant rated the accessibility on site, the results were calculated in Microsoft Excel, 2007. Results for accessibility were summarized on tables in order to give accessibility recommendations to the outpatient clinic.

### **Part Two: WPD Interview**

**Participants.** A total of thirty women were approached in the waiting room. Of the thirty, ten did not meet inclusion criteria and eighteen refused to participate. Refusal was due to time constraints (n=10) and lack of interest (n=8). In total two women with mobility impairments who met study criteria were willing to be interviewed. Both women were both unable to work due to disability, married, and lived in a four-person household. The first woman was a 58 year old Caucasian and the second woman

was 50 year old African American. Both women described multiple disease processes and injuries impeding access to preventive screenings such as Pap tests and mammograms. Both women used a cane and a walker as assistive devices in order to ambulate safely.

**Procedure.** The second part of the study involved self-assessment of clinic accessibility, and was evaluated in March, 2011 by the same research assistant. Accessibility measurements taken in the first part of the study are unable to capture real experiences the WPD face, therefore a survey was created to understand personal experiences with inaccessibility in the clinic. Convenience sampling of participants was utilized for this study; WPD were approached in the waiting room of the center and asked to participate in the study. Paper and pencil surveys took fifteen minutes to complete. A ten dollar Visa gift card was given as an incentive upon completion of the surveys. Inclusion criteria included the use of a mobility device, an age of over 25, a female patient of the outpatient center, and the ability to read and write in English.

**Measures.** The survey consisted of 37 multiple choice and open ended questions. Of the questions, twenty consisted of accessibility questions and seventeen consisted of health and disability history questions. The questions were based on findings from the first study.

**Statistical Analysis.** Responses to questions were recorded in an Excel spreadsheet for easy comparison between participants. Statistics were calculated for multiple choice (yes and no choices) as a percentage of number of women answering yes to a question. For example 100% indicates both women responded to the questions with a yes, 50% indicates only one woman responded with a yes, and 0% indicates neither women responded with a yes.

## **Results**

### **Physical Barriers**

The Kentucky Cabinet Accessibility Checklist shows the overall usability for the exterior portion of the Urban Health and Wellness Center

**Table 1**

**Kentucky Cabinet Survey Scores: Part One Building Inspection**

<b>Items</b>	<b>Number of YES</b>	<b>Number of NA</b>	<b>Number of NO</b>	<b>Number of Total Items</b>	<b>*Percent Usability</b>
Signage	1	0	0	1	100%
Walks, curbs, ramps	4	14	1	19	95%
Parking	13	5	2	20	90%
<b>Total External</b>	18	19	3	40	93%
Emergency Procedure	8	2	0	10	100%
Entrances and Stairs	19	9	2	30	93%
Public Restrooms,	14	13	3	30	90%
Telephones/Fountains	9	5	2	16	88%
Meeting-rooms	13	2	3	18	83%
<b>Total Internal</b>	63	31	10	104	90%

Note. Kentucky Department of Vocational Rehabilitation. *Accessibility Checklist*, 2000. Web. 22 Mar. 2010. <[http://ada.ky.gov/documents/Checklist\\_2000.pdf](http://ada.ky.gov/documents/Checklist_2000.pdf)>.

NA= not available at the clinic, NO= not accessible, YES= accessible.

\*Percent Usability was calculated by (YES+NA)/Total Items \*100

was 93% usable; 37 out of 40 items were found accessible. The overall usability of the interior portion of the Urban Health and Wellness Center was 90% usable; 94 out of 104 were found accessible. See table 1 for Kentucky Cabinet Accessibility Checklist subsection scores in greater detail.

OHCUP V3 indicated 89% usability in the external section; 24 out of 27 items were found accessible. The internal section, which included a majority of the overall questions, showed 92% usability; 106 out of 115 items were found accessible. See Table 2 for greater detail.

The follow up study was conducted to assess patient-reported accessibility in order to understand how to overcome physical barriers. Overall, both patients reported high accessibility of the Health Center. They indicated that the front door was inaccessible, which is similar to the finding of the first study. One respondent stated, “the front door was hard to push open. It is strong and heavy”. Telephones and parking were not indicated as barriers because they were not used by patients in the clinic. Bathrooms, parking lot, and tables for paperwork were not

identified as barriers. One participant confessed to going without a mammogram in the past year. She explained that due to her physical inability to stand she could not utilize the screening. Contrary to results from the main study, telephones, counters, and parking were not reported as barriers due to no utilization of these items. Also contrary to previous findings, exam rooms and parking were reported to be accessible

**Availability of Health Care Providers**

Both participants suggested the use of human resources. Having health care providers help navigate the building was offered as a solution to environmental barriers. When asked to reveal solutions to overall barriers in the clinic, a patient reported that staff members helped to overcome obstacles. Assistance from family members was the leading solution to barriers. When asked how patients entered the facility through heavy entrance doors, one responded that she had help from family. When responding to the question regarding difficulties using the parking lot, one patient answered that she just began driving; her husband drove to the clinic and walked “me” into the building.

**Table 2**

**Outpatient Usability Profile Scores: Part One Building Inspection**

<b>Items</b>	<b>Number of YES</b>	<b>Number of NA</b>	<b>Number of NO</b>	<b>Number of Total Items</b>	<b>*Percent Usability</b>
Walks, curbs, and ramps	6	10	0	16	100%
Signage and Controls	3	0	1	4	75%
Parking	5	0	2	7	71%
<b>Total External</b>	14	10	3	27	89%
Seating	1	0	0	1	100%
Passageways	4	4	0	8	100%
Water fountains	3	0	0	3	100%
Lifts	0	6	0	6	100%
Stairs	5	0	0	5	100%
Emergency egress	9	0	0	9	100%
Exam Rooms	25	5	2	32	94%
Restrooms	19	7	2	28	93%
Elevators	3	9	1	13	92%
Telephones	3	2	3	8	63%
Counters	1	0	1	2	50%
<b>Total Internal</b>	73	33	9	115	92%

Note. Drum, C.E., Davis, C.E., Berardinelli, M., Cline, A., Laing, R., Horner-Johnson, W., & Krahn, G. (2008). Outpatient health care usability profile V3. *OHCUP*, 3, 1.

\*Percent Usability= YES+NA/Total Items \*100

Both participants noted the availability of mechanical resources on the building. Some patients were able to use the handicap button to open the entrance door to avoid inaccessibility problems. Similar to close-ended-question-recommendations, the few open-ended recommendations included having staff members or family members help overcome barriers in the clinic. It was also recommended to have human resources available. Please see Table 3 for further detail of the survey.

**Discussion**

This study uncovered important issues regarding inaccessibility of health care clinics which can impede preventive health care for WPD. Part one of the study uncovered physical barriers in the clinic by means of tangible measurements,

whereas the second part of the study emphasized those barriers by giving personal perspective from WPD. Overall, this case study highlighted underlying accessibility barriers for WPD and gave suggestions to side-step these types of barriers in the future.

The interior and exterior of the Health Center was mostly accessible for WPD. There are areas in which the clinic has successfully dealt with physical barriers: ADA suggestions were accurately met throughout the clinic in areas of passageways, water fountains, and emergency egress. According to the socio-ecological framework, this study identified several institutional barriers that require attention in order to provide equal access to WPD. Parking, signage, and controls in the exterior portion, and counters, telephones, and meeting rooms in the

interior portion were the sections that showed lowest usability. These findings were supported

by previous research (Kroll, 2006) which indicated that inadequate disability parking, lack

**Table 3**

**Self-Reported Access: The Results from the Part Two Patient Interview**

<b>Items</b>	<b>Question</b>	<b>Response</b>
Parking	Do you have difficulty using the parking lot at the Urban Health and Wellness Center?	0% (n=0)
Entrance	Do you have difficulty entering the Urban Health and Wellness Center through the front door?	50% (n=1)
Tables/Counters	Do you have difficulty sitting at tables to fill out paperwork at the Urban Health and Wellness Center?	0% (n=0)
Exam Rooms	Do you have difficulty entering the Urban Health and Wellness Center exam room or bathroom?	0% (n=0)
Overall Accessibility	Is it easy for you to get around Urban Health and in the Wellness Center overall?	100% (n=2)

Note. Questions from the survey from part two of the case study are shown above. Responses were in a YES/NO format. N=0 indicates a no response from both women, n=1 indicates a yes response from one woman and a no response from the other woman, and n=2 indicates a yes response from both women.

of ramps, inaccessible doorways, and examination rooms had inaccessible equipment. The institutional level of influence outlined by the socio-ecological model were validated as important factors contributing to the disparity of cancer screenings for WPD, however a third level was found to be equally relevant. The interpersonal level portrayed the importance of interaction between patient and provider as means to prevent disparity. The recruitment style for the second part of the study was problematic: most women who declined the survey were worried about missing important therapy time in the clinic (n=10), and others opted out simply due inconvenience of a lengthy survey (n=8). It might be best to approach WPD when they are not waiting for therapy, or to use another form of recruitment (telephone, mail, electronic, etc).

However, the two women both recommended the use of human resources to overcome physical barriers. As expected, staff assisted in decreasing barriers by opening doors in the clinic. However: equipment barriers interfered

with patient access to preventive care, even with assistance provided by staff. Overcoming physical barriers by means of tangible support from family and staff were supported by previous research that identified patients with physical disabilities as requiring extra assistance with mobility transfers. (Fadyl, 2011). Based on the previous findings of the PATHS intervention it may be beneficial to disclose the personal strategies of overcoming barriers identified in this study and also provide mobility transfer training for medical assistants to insure accessible health care. Therefore, a report of all findings outlined in the article will be given to the health care facility to increase awareness and decrease physical barriers to health care for WPD.

**Limitations**

Several limitations were found while conducting the study. The OHCUP and Kentucky Cabinet Survey have not yet been psychometrically validated. The small sample size and use of only one clinic are threats to the generalization of

results. Only one clinic was used do to the limited availability of clinics that treat uninsured populations. Only two out of thirty women approached in this clinic were available and willing to participate in the survey which severely limits generalizability. This study is also limited by not being from the perspective of a person with a physical disability. Also, the study only covers only the physical environment; it does not highlight the interpersonal interactions and treatment of people with disabilities.

### Implications

Recommendations emerging from the study include the widening of Handicap parking spaces, the removal of barriers in front of

telephones, the addition of usable counters of appropriate height, and the training of staff members. Since many medical professionals do not consider the inaccessibility of healthcare facilities for WPD (Harrington, 2001), the healthcare provider should provide the opportunity for those patients to express their concerns about the usability problems in health care settings. Not only will the improvement of the PATHS program, which targeted the individual level, be urgent in the field of public health, but also the development of a new educational program for health care providers.

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