

Accessibility of Public Healthcare Facilities for People with Disabilities in Eastern Ethiopia: A Mixed-Methods Study

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Abstract

Background

People with disabilities, in addition to the same healthcare needs as others, have more frequent health visits. In Low- and Middle-Income countries like Ethiopia, however, poor accessibility of health facilities undermine commitments to barrier-free healthcare. This study assessed the accessibility of public healthcare facilities for people with disabilities in Eastern Ethiopia.

Methods

A facility based cross-sectional mixed-methods study incorporating both qualitative and quantitative approach was conducted at public healthcare facilities in Dire Dawa from July 3 to 18, 2025. First, accessibility audit of 18 public healthcare facilities was conducted using the Outpatient Health Care Usability Profile checklist and non-participant observations to evaluate accessibility at patient arrival, interiors and facilities, and outpatient clinic sections. Next, semi-structured interviews with 86 care providers documented their views on the healthcare of people with disabilities and their accommodation in care provision. We computed percentage accessibility scores with 95% Wilson confidence intervals and used binomial tests to compare urban and rural health facilities. Pictures and narrative summaries were used to illustrate and describe specific contexts. Proportions were used to describe care providers' responses.

Results

The overall accessibility score was 39.5% (95%CI: 36.7–42.3) with higher scores at urban (43.8%) compared to rural (32.7%) health facilities ($p < 0.001$). Category accessibility score was high for mobility (42.7%), followed by sensory (24.4%), and cognitive (11.1%). Patient arrival, interiors and facilities, and outpatient clinics had accessibility scores of 63.8%, 30.9%, and 42.8%, respectively. Care providers reported poorer quality-of-care for people with mobility (51.9%), hearing (53.2%), vision (56.8%), and cognitive (64.2%) limitations. Lack of training (61.7%) and adapted equipment (54.4%) were major barriers in care provision. Adaptations used to accommodate people with disabilities included verbally describing the setting (71.2%) and speaking louder or slower (57.9%).

Conclusion

There was poor accessibility of public health facilities for people with disabilities indicating disparity in quality healthcare service delivery. Enforcing existing standards for public buildings is essential so that health facilities become disability inclusive. Training of on patient-centered care and availing adaptive

equipment can improve care providers' capacity to adequately respond to healthcare needs of people with disabilities.

Background

Globally, there are 1.3 billion people with disabilities (PWDs) with 80% living in low and middle-income countries (LMICs) (1). In Ethiopia, 13% of the population has some level of difficulty in at least one functional domain (2). The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) emphasizes the need for the highest attainable healthcare without discrimination (1, 3). Ethiopia ratified the UNCRPD in 2011 and enacted several legislations to improve inclusion of PWDs in all public services. For example, the 2011 Ethiopian Building Proclamation set requirements for accessible building spaces, services and facilities to PWDs at public buildings (4). The Health Sector Transformation Plan II provided strategic initiatives to improve equitable access to and uptake of health services and minimize disparity in health status (5). Additionally, the National Health Equity Strategic Plan pledged to make health services accessible for PWDs with no undue barriers (6).

Compared to the general population, PWDs often have higher healthcare needs and make more frequent healthcare visits (7). However, available public healthcare facilities and the health service delivery arrangements in LMICs fail to provide adequate accessibility for PWDs (7, 8). Accessibility of healthcare facilities for PWDs is a function of the level of accommodation in the physical environment and in the provision of healthcare (7, 8). Architectural design of buildings and facilities, health information and communication, adaptive medical equipment, and disability awareness and competency of care providers are the major aspects of health facilities determining access to PWDs (9–13).

In Ethiopia, disability inclusion is increasingly being recognized in national health strategies, with an ambitious goal for barrier-free health service delivery. Article 9(1) of the UNCRPD recommends measures taken to improve accessibility to include the identification of obstacles and barriers to access (3). However, data on the accessibility of healthcare facilities for PWDs is very limited in Ethiopia. Available literature in the country reported on accessibility of health facilities mostly qualitatively based on PWDs' or healthcare workers' experiences. And, with the exception of very few recent studies (12), there are no studies that evaluated accessibility of health facilities' environment using validated on-site audit tools. Hence, documenting the accessibility of healthcare facilities for PWDs in urban and rural settings becomes essential to monitoring the country's commitment to barrier-free health service access. Moreover, the use of additional methods to better understand need-based access issues in the provision of care for PWDs make this study unique in its contributions to the knowledge base on the topic. Therefore, this study aimed to assess the accessibility of public healthcare facilities for PWDs in Dire Dawa.

Methods

Study setting and design

The study was conducted in Dire Dawa, 515 kilometers to the east from the capital Addis Ababa, Ethiopia. Dire Dawa is divided into urban and rural administrative regions with a combined population of 566,000, with females representing 49.5% and the majority (64.7%) living in urban areas (14). There were 4 public hospitals and 16 health centers providing healthcare services for the population at the time of this study. The health service utilization in the general population is the second highest nationally with 78.84% seeking health consultation and an outpatient attendance per capita of 1.14 (15).

A facility-based cross-sectional mixed-methods design that included both quantitative methods was used in this study. The first part of the study was an on-site accessibility audit of public health facility structures and spaces using a structured checklist and nonparticipant observations. The second was semi-structured interviews with care providers regarding their views on healthcare of PWDs, challenges in provision of care to PWDs, and adaptations used to accommodate PWDs. The study was conducted between July 3 and 18 of 2025 in Dire Dawa, Eastern Ethiopia.

Populations

The population for the on-site accessibility audit was public healthcare facilities in Dire Dawa, whereas care providers in the audited health facilities were the population for the interviews.

Public health facilities providing primary healthcare services and that were fully operational at the time of the study were included in the on-site audit. Only care providers stationed at outpatient care units of audited health facilities were included in the interviews. Care providers at inpatient units were excluded as they were more likely to tend to patients incapacitated due to transient health conditions than long term disabilities, which in turn could bias their responses.

Sample Size and Sampling

All 18 public healthcare facilities available, of which 16 were health centers and 11 are in urban areas, were included as a convenient sample in the on-site accessibility audit. One care provider from each of six outpatient units (i.e., adult and under-five outpatient clinics, laboratory, pharmacy, and maternal and child health clinics) was invited for the interviews. Of the total 108 care providers invited across all health facilities, 86 volunteered and participate in the study.

Study tools and measurements

Health facility accessibility audit

The on-site accessibility audit evaluated the accessibility of health facility structures and spaces using a standard checklist and nonparticipant observations. The checklist had 68 items adopted from the Outpatient Health Care Usability Profile (OHCUP) validated in previous studies (16). Each item was rated

“1” if it satisfied the required criteria described under it, or “0” if it does not. A measuring tape was used to measure length, height, and width of health facilities’ structures and spaces. Slopes or inclinations were measured using a digital level. The observations involved taking notes that described the settings, contexts and observed experiences of the health facilities’ environment. In addition, pictures of specific health facility structures and spaces were taken during the observations. The following accessibility scores were generated for each health facility based on the OHCUP (16).

Overall score

is the overall accessibility of health facilities for PWDs and was calculated as the percentage of items rated “1” from total applicable items (n = 68) evaluated.

Category scores

represent the accessibility for people with different types of impairments and were computed as the percentage of items rated “1” from the total applicable items for Mobility (n = 52), Sensory (n = 18), and Cognitive (n = 4) evaluated.

Section scores

represent accessibility at major health facility sections and were calculated as the percentage of items rated “1” from the total applicable items for patient arrival (n = 13), Interiors and facilities (n = 43), and Outpatient clinic (n = 8) evaluated.

Subsection scores

represent accessibility at specific health facility subsections and were calculated as the percentage of items rated “1” from the total applicable items for Parking (n = 5), Entrance (n = 8), Signage (n = 12), Stairs (n = 4), Ramps (n = 6), Passageways (n = 4), Toilets (n = 17), Waiting area (n = 8), and Examination rooms (n = 8) evaluated.

Care provider interviews

A self-administered semi-structured interview with care providers was used to evaluate their views on accessibility of provision of care for PWDs. The interview guide was adopted from a previous study on care providers’ perceptions of PWDs and their healthcare (17). It gathered information on care providers’ background; attitude towards healthcare of PWDs; barriers to disability-inclusive provision of care; and adaptations to accommodate PWDs in care. The following measures were used in the care provider interviews (17).

Attitudes on healthcare of PWDs: care providers rated their level of agreement to statements pertaining to healthcare of PWDs on a 4-point scale: 1) strongly disagree, 2) disagree, 3) agree, and 4) strongly agree.

Quality of care: care providers were asked to generally compare the quality-of-care PWDs received to that of nondisabled. on a 5-point scale: (1) much worse, (2) a little worse (3) the same, (4) better, and (5) much better.

Confidence to provide care for PWDs: care providers rated their ability to provide the same level of care to PWDs as they would for nondisabled on a 4-point scale: (1) very confident, (2) somewhat confident, (3) not very confident, and (4) not at all confident.

Barriers to provision of care for PWDs: care providers rated how big barrier aspects of the service delivery arrangements were to provide similar level of care for PWDs as nondisabled on a 4-point scale: (1) Not at all, (2) small, (3) moderate, and (4) large.

Adaptations to accommodate PWDs: care providers were asked how often they utilized various adaptations to accommodate PWDs in service delivery on a 5-point scale: (1) always, (2) usually, (3) sometimes, (4) rarely, and (5) never.

Data collection

Two public health professionals conducted the on-site accessibility audits. The data collectors received a one-day training on the study, checklist items and measurements. On the scheduled observation date, the data collectors met with service unit heads for rapport and to ensure that all facility protocols are met during observation. This included receiving and communicating general restrictions related to access and/or patient-related privacy regulations.

Data collectors rated each item “1” or “0” based on the descriptions and picture guide indicated on the checklist. A measuring tape and a digital level were used to measure length, height, width, and slopes of structures and spaces. In instances where there were multiple similar rooms and structures, the ones that are most easily accessible and obviously used by patients were evaluated. A digital camera was used to take pictures of specific structures and spaces of that were least accessible in majority of the health facilities. The pictures were taken outside of the regular service hours. The researcher supervised the data collection and verified the completed observation checklists.

At each health facility audited, one care provider was approached at each of six outpatient units and invited for the interviews. The data collectors explained the study’s objectives and procedures for the interviews. Care providers willing to participate were sent a text message that included a link to redirect them to an Enketo® Webform specifically developed for this study. The care providers read the note that provided information about the study and accepted the request for their consent before accessing the interview questions. Completed forms submitted by care providers were aggregated on Kobo Toolbox® sever.

Data processing and analysis

Data on the completed observation checklists were entered into Excel® where all analysis was performed. Similarly, care providers' responses aggregated on Kobo Toolbox® were imported into Excel for data coding and analysis. Overall, category, section, and subsection scores were computed for each health facility. Aggregate accessibility scores across all health facilities were computed as the proportions of the sum of items rated "1" from the sum of applicable items in respective categories, sections, and subsections. Similarly, aggregate accessibility scores were computed for urban and rural health facilities.

Percentages and 95% Wilson score confidence intervals computed to describe overall, category, and section accessibility scores. Binomial tests were used to compare accessibility scores of urban and rural health facilities. Pictures were used to illustrate conditions at specific structures and spaces. Narrative summaries describing key contexts captured in the observers' notes were also provided. Proportions of response categories were used to describe care providers' views on healthcare of PWDs and the barriers faced, and adaptations used in their provision of care to PWDs.

Results

A total of 18 public health facilities were audited for their accessibility to PWDs. Most of the health facilities (88.9%) were health centers and majority (61.1%) were in urban areas (Table 1). Of the 108 care providers at the outpatient service units invited, 86 (79.6%) submitted the completed feedback form. Majority of the respondents were males (62.8%) and station in urban health facilities (65.1%). Most of the care providers (87.2%) were working in health centers had an average experience of 9.9 years (Table 1).

Table 1
Characteristics of public health facilities (n = 18) and care providers (n = 86) in the study, Dire Dawa, 2025.

Sample	Variable	Response categories	N (%)
Health Facility	Health facility location	Urban	11 (61.1)
		Rural	7 (38.9)
	Type of health facility	Health center	16 (88.9)
		Hospital	2 (11.1)
Care Providers	Sex	Male	54 (62.8)
		Female	32 (37.2)
	Health facility location	Urban	56 (65.1)
		Rural	30 (34.9)
	Type of Health facility	Health center	75 (87.2)
		Hospital	11 (12.8)
	Years of experience (μ , SD)		9.92 (7.9)

Table 1 Characteristics of public health facilities (n = 18) and care providers (n = 86) in the study, Dire Dawa, 2025.

Accessibility of Health Facility Structures and Spaces

The overall accessibility score of public health facilities in Dire Dawa was 39.5% (95%CI: 36.7, 42.3) (Table 2). There overall accessibility score was significantly better for PWDs at urban 43.8% (95%CI: 40.2, 47.5) compared to rural 32.7% (95%CI: 28.6, 37.2) health facilities ($p < 0.001$). The accessibility score at health facilities for people with mobility limitation was 42.7% (95%CI: 39.5, 45.9) with lower scores for sensory limitations (24.4%; 95%CI: 19.7, 29.7) and cognitive limitations (11.1%; 95%CI: 3.9, 28.1). There was better accessibility for people with mobility difficulties at urban (47.8%) compared to rural (34.6%) health facilities ($p < 0.01$). None of the cognitive items evaluated at rural health facilities satisfy the criteria for accessibility.

Table 2

Accessibility scores (%) overall and by disability categories by location of health facilities, Dire Dawa, 2025 (n = 18)

Category	# of audit items	Total evaluated	Total accessible	%	95%C.I.*	P value
Overall						0.000
Total	68	1157	457	39.5	36.7–42.3	
Urban	63–68	708	310	43.8	40.2–47.5	
Rural	63–65	449	147	32.7	28.6–37.2	
Mobility						0.000
Total	52	914	390	42.7	39.5–45.9	
Urban	49–52	556	266	47.8	43.7–52	
Rural	50–52	358	124	34.6	29.9–39.7	
Sensory						0.456
Total	18	279	68	24.4	19.7–29.7	
Urban	15–18	174	45	25.9	19.9–32.8	
Rural	15	105	23	21.9	15.1–30.7	
Cognitive						0.277
Total	4	27	3	11.1	3.9–28.1	
Urban	4	20	3	15.0	5.2–36	
Rural	4	7	0	0.0	0–35.4	
<i>*Wilson score interval estimates</i>						

Table 2 Accessibility scores (%) overall and by disability categories by location of health facilities, Dire Dawa, 2025 (n = 18)

Patient Arrival

This major section of health facilities evaluated parking and entrances and had an accessibility score of 63.8% (95%CI: 57.4, 69.8). On average, patient arrival sections at urban health facilities had better accessibility score (72.5%; 95%CI: 64.8, 79.6) compared to rural facilities (50%; 95%CI: 39.8–60.2) ($p = 0.001$) (Table 3). Accessibility for the parking area of health facilities was 56%. The accessibility of parking was significantly better in urban (69.1%) compared to rural (34.3%) health facilities ($p = 0.002$). There were no designated accessible parking spaces at all health facilities. Patient drop-off points were on the shortest route to outpatient buildings in 89% of the facilities while only 44.4% had smooth

transitions to pedestrian routes of travel. Aggregate audit results for health facility subsections are available in Additional file 1.

Table 3
Accessibility scores (%) of sections of health facilities by location, Dire Dawa, 2025 (n = 18)

Category/ Section	# of audit items	Total evaluated	Total accessible	%	95%C.I.*	P value
Patient arrival						0.001
Total	13	224	143	63.8	57.4– 69.8	
Urban	12–13	136	99	72.8	64.8– 79.6	
Rural	12–13	88	44	50.0	39.8– 60.2	
Interior & facilities						0.024
Total	43	718	222	30.9	27.6– 34.4	
Urban	39–43	441	150	34.0	29.7– 38.6	
Rural	39–40	277	72	26.0	21.2– 31.5	
Outpatient clinics						0.162
Total	12	215	92	42.8	36.4– 49.5	
Urban	11–12	131	61	46.6	38.2– 55.1	
Rural	12	84	31	36.9	27.4– 47.6	
*Wilson score interval estimates						

Entrances to health facility buildings had an accessibility score of 69% (Fig. 1). Accessibility at entrances was relatively higher at urban (75.3%) compared to rural (60.4%) health facilities ($p = 0.066$). Although half of the facilities ($n = 9$) required the use of stairs at their main entrance, only 2 offered accessible routes as alternatives. Entrances at 55.6% of facilities had thresholds with non-beveled edges and only 11.1% had curbs ramps on their route of travel. The list of items inaccessible in more than two-thirds of the health facilities are described in Additional file 2.

Table 3 Accessibility scores (%) of sections of health facilities by location, Dire Dawa, 2025 (n = 18)

Interiors and Facilities

The health facility structures evaluated under this section included signages, stairs, ramps, passageways, and toilets (Fig. 1). Overall, interiors and facilities had 30.9% (95%CI: 27.6, 34.4) accessibility score with better accessibility score at urban (34%; 95%CI: 29.7, 38.6) compared to rural (26%; 95%CI: 21.2, 31.5) health facilities ($p = 0.024$) (Table 3).

Signages providing directions and health messages had the least accessible score (20%) (Fig. 1). Accessibility of signage was similar in urban (21.3%) and rural (19%) health facilities. All health facilities have signs designating their permanent rooms, but none were mounted at 60 inches from the floor and adjacent to latch side of doors.

Signs were designed with non-glare finishes in 44.4% of the health facilities while only 33.3% featured high contrast characters. All health facilities lacked signs with Brail characters and directional assistance (i.e., sound recordings, or a trained receptionist nearby). Furthermore, none of the health facilities had printed health messages or forms available in accessible formats at their receptions and outpatient clinics.

Figure 1 Subsection accessibility scores (%) of public health facilities ($n = 18$).

Stairs along the path of travel inside health facilities had an accessibility score of 44% (Fig. 1). Accessibility of stairs was slightly higher in urban (47.7%) compared to rural (39.3%) health facilities ($p = 0.725$). The stairs in all facilities have closed risers, and most (78%) had uniform height and thread width. However, all the stairs lacked handrails on either side of their risers.

Ramps along the path of travel had a 42% accessibility score (Fig. 1). Accessibility was significantly better at urban (54.1%) compared to rural (23.1%) health facilities (0.002). Ramps had firm and non-slippery surfaces in most health facilities (83%) and 61% of the ramps had an unobstructed clear width of 90 cm. Half of the health facilities had ramps with steep slopes (greater than 1:12) while only one facility (5.6%) had ramps with handrails on both sides.

Figure 2 illustrates a staircase and an adjacent ramp along the path of travel to an outpatient service building at a rural health center. The stair raisers can be seen to have uneven heights and a narrow breadth. At the bottom of the staircase there is an open gutter where there should be a firm landing surface instead. The ramp adjacent to the staircase (Fig. 2), supposedly built to provide an accessible alternative route, has a very steep slope and lacks beveled transitions at both ends. The ramp also has a narrow width for a person in a wheelchair to turn around or change direction. Furthermore, both the staircase and the ramp lacked handrails on either side.

Figure 2 Staircase and adjacent ramp to a service building at Jelobelina health center, Dire Dawa.

Passageways enroute outpatient services had an accessibility score of 43%. Significantly better accessibility was recorded at urban (53.7%) compared to rural (28.6%) health facilities ($p = 0.039$).

Passageways in 61% of the health facilities had unobstructed paths while 50% had enough clear space for wheelchair users to maneuver. Only 22% of the facilities have beveled edges where passageway levels change.

Figure 3 shows a major route of travel at an urban health facility. The entire length of the path of travel is obstructed by an open gutter. The left section has a level change on its floor that is unbeveled. The path of travel on the left side is also obstructed by a pedestal handwash basin. Moreover, the path of travel down on the right section features slippery tiles. We also witnessed that none of the health facilities offered passageways that featured tactile pavements to guide white cane users to their services buildings and facilities.

Figure 3A major passageway enroute outpatient service units at Goro health center, Dire Dawa.

Toilets available for public use had an accessibility score of only 27% (Fig. 1). Accessibility of toilets was better in urban (29.9%) compared to rural (19.8%) health facilities ($p = 0.034$). Just 17% of health facilities have entries large enough for a wheelchair user to enter, turn around and exit. The path to toilet fixtures is obstructed in half of the health facilities and only 22% have faucets operable with a single fist. Only one health facility had a toilet that had horizontal grab bars on the side wall nearest to the toilet seat.

Figure 4 above depicts the inside of a toilet for public use at an urban health facility. The path to the toilet rooms was not wide enough for wheelchair users to maneuver and is obstructed by materials used by cleaners. The doors to each room are too narrow for wheelchair users and have latches (not visible in the picture) difficult to operate by a closed fist. A 'commode chair' to support people who cannot squat can also be seen a distance. However, it was only a simple office chair with large section of its seat cut out and lacked arms support or height adjustability.

Figure 4 The interior of a toilet for public use at Legehare health center, Dire Dawa.

During our observation, we also witnessed a toilet room specifically dedicated for PWD use at one of the urban health facilities (Fig. 5). As evident in Fig. 5, the toilet has a very narrow door and floor space for wheelchair users to enter. Our observation inside the toilet revealed lack of basic adaptations including faucet operable with a single closed fist, and horizontal grab bars. The toilet also lacked enough clear space to maneuver near its toilet seat and washing area. In addition, the toilet is kept locked and PWDs must request access to use it from an administrative assistant who kept the keys to the toilet door.

Figure 5 Toilet facility designated for disabled patient use at Dr. Abel health center, Dire Dawa.

Outpatient Clinics

This section had an accessibility score of 42.8% (95%CI: 36.4, 49.5) overall and covers waiting areas and examination rooms of health facilities (Table 3). Accessibility of outpatient clinics was marginally higher in urban (46.6%; 95%CI: 38.2, 55.1) than rural (36.9%; 95%CI: 27.4, 47.6) health facilities ($p = 0.162$).

Waiting areas had a 56% accessibility score on average. There was no significant difference in accessibility of waiting areas in urban (60.5%) and rural (50%) health facilities ($p = 0.385$). In 44.4% of the health facilities there is enough space for a person in a wheelchair to wait without blocking aisles. Majority of the health facilities (61%) have reception tables with enough knee space and 33.3% have table or counter tops at accessible height.

Examination rooms had an accessibility score of 36% overall (Fig. 1). Accessibility of examination rooms was comparable in urban (39.8%) and rural (30.4%) health facilities ($p = 0.251$). There is a 90-cm clear passageway from the waiting area in 89% of health facilities and 83% have a loaner wheelchair available. None of the health facilities had examination rooms with wide enough entrances (at least 90cm) although all have interior space large enough for wheelchair users to maneuver. Height adjustable examination tables were present in only 17% of the health facilities. Sadly, none of the health facilities had a lift or transfer device, a method to weigh a wheelchair user, or a graphic pain chart at their outpatient examination rooms.

Care Providers' Views on Healthcare for PWDs

Attitudes on healthcare for PWDs

Half of the care providers (51.3%) believed that PWDs are generally treated unfairly in the healthcare system. In addition, majority of them believed that PWDs with difficulties in mobility (51.9%), hearing (53.2%), vision (56.8%), and cognition (64.2%) are worse off in getting quality healthcare compared to their nondisabled peers (Fig. 6). On the other hand, 75.3% of care providers acknowledged their responsibility to make primary care at their points of services equitable for PWDs.

Figure 6 Perceived quality of care disabled patient care (%)

Regarding provision of care for PWDs, 83.9% of care providers reported welcoming PWDs into their service and 65.4% strongly agreed to *understanding disabled patients' healthcare needs is valuable to me as a care provider* (Fig. 7). Majority of care providers agreed to the statement *care for PWDs patients is time consuming* (64%) and to *nonadherence of PWDs is a big issue to their healthcare* (62%).

Barriers to providing care for PWDs

The biggest challenge to provision of care for PWDs lack of appropriate training (61.7%) according to the care providers (Fig. 8). Consequently, only 27.3% of the care providers believed they are very prepared for adequate care of PWDs. In addition, only 21% of care providers felt very confident to providing the same level of care for PWDs as they would for nondisabled.

Figure 7 Attitudes of care providers on disabled patient care (%)

Unavailability of adapted or specialized equipment (54.4%) was another barrier care providers reported. Care providers skipped physical examination for PWDs due to lack of height adjustable examination

tables (73.7%) and wheelchair accessible weight scales (64.3%). Hence, care providers often asked the PWDs how much they weigh (61.9%) or record their previous measurements if available (57.2%).

Another big challenge care providers reported was the lack of trained assistants with patient transfer and sign language (55%) (Fig. 8). Thus, due to fear of injury to the patients when transferring them to examination tables, 36.2% of care providers reported skipping physical examinations all together for people with mobility difficulties.

Figure 8 Perceived barriers to disabled patient care (%)

Adaptations to accommodate PWDs

Table 4 summarizes different adaptations care providers employ to accommodate people with different disabilities in their primary care services. When transferring people with mobility limitations, care providers often ask assistance from the PWDs’ accompany (76.2%) (Table 4). Lift or transfer devices (69.5%) and height adjustable examination tables (78%) were rarely/never used by care providers.

Table 4 Adaptations care providers use to accommodate disabled patients (%).			
Adaptations by disability type	Always/ usually	Sometimes	Rarely/ never
Transferring patients with mobility limitations onto exam tables (N = 59)			
Get help from accompany	76.3	11.9	11.9
Use a lift device	13.6	16.9	69.5
Use height adjustable exam table	8.5	13.6	78
When Providing care to patients with vision difficulties (N = 53)			
Verbally describe the exam room	71.2	5.8	23.1
Use large font prints	9.4	13.2	77.4
Allow patients to audio-record	9.4	11.3	79.2
When communicating with patients with hearing difficulties (N = 57)			
Speak with patient’s accompany	59.6	12.3	28.1
Notes written on paper	17.5	19.3	63.2
Speak louder/ slower	57.9	15.8	26.3
Use lip reading by patients	33.3	21.1	45.6

Table 4. Adaptations care providers use to accommodate disabled patients (%).

Majority of care providers (71.2%) reported to verbally describe the setting and equipment at their clinics for people with visual impairment (Table 4). When providing care for people with hearing difficulties, care

providers often speak with the person accompanying them (59.7%), speak louder/slower (57.9%) or use lip reading by the PWD (33.3%) (Table 4).

Discussion

The results of this study revealed poor accessibility at public health facilities for PWDs in Dire Dawa. Although there are no similar studies in Ethiopia, our findings generally mirror results of previous studies from LMICs (10, 18, 19). Urban health facilities had better accessibility than rural ones, especially at their patient arrival and interior environments. A national accessibility audit in Brazil also found higher accessibility rates in large metropolitan areas (11). The graveled, unstable surfaces at the entrance and in their compounds is likely to make navigating services at rural facilities difficult especially for people with mobility difficulties.

Interior sections of health facilities had poorly accessible signages (20.5%), stairs (44.4%), ramps (42%), passageways (43.5%), and toilets (27.1%). Literature on accessibility of health facility interiors is mixed with generally higher rates in HICs (16, 17) and lower rates from LMICs (9, 11, 18, 19). Most health facilities do not have accessible signages and health education materials available in accessible formats. This situation will undoubtedly preclude PWDs from the right to seek and receive information on equal basis as their nondisabled peers (10). In addition, due to unavailability ramps as alternatives to staircases and narrow and obstructed paths of travel, especially people on wheelchairs will have restricted access to service buildings of health facilities (13). Moreover, the lack of accessible toilets and horizontal grab bars, disable patients who cannot squat on their own will have a non-dignified experience while using toilets in most health facilities (9).

On average, outpatient clinics were 36.1% accessible, which is in parallel with other studies (9–11). Height adjustable exam tables were available in only 17% of examination rooms while accessible weight scales were not available in all facilities. Availability of adapted medical equipment is essential to accommodate disabled patients in clinical procedures (13). This was evident in this study as care providers skipped physical examination of disabled patients. Other studies also found that during assessments of patient with mobility difficulties, care providers often relied on verbal complaints and attempted transfer patients into exam tables only if there was assistance from patients accompany (20).

Care providers welcome PWDs to their service and recognized understanding of PWDs' needs to be important to them as care providers. Despite their positive views, however, majority of care providers did not believe they have the preparation and confidence to adequately care for PWDs owing to their lack of appropriate training. Care providers often fail to address personalized healthcare needs of disabled patients due to the biomedical, deficit oriented trainings and professional routines (8, 21). The lack of understanding of PWDs' needs may lead to insensitivity of care providers and may result in paternalistic approaches to disabled patient care (20).

Most of the care providers reported clinical consultations of patients with communication difficulties very challenging. Without effective communications, care providers will be unable to fully understand

their patients' complaints, nor can they make sure their patients comprehended their clinical advice (20). This can further undermine patient-provider interaction and trust, further exacerbating non-adherence by disabled patients (22). Although care providers often talked with accompanying individuals, this practice would likely take away disabled patients' autonomy to consent on their own healthcare with authority (21, 22)

The UNCRPD, in its Article 9(2), promulgates that states parties shall set minimum standards for accessibility of public facilities and services (3). The 2009 Ethiopian Building Proclamation made the accessibility of public buildings for people with physical impairments a legal requirement (4). The Building Regulation in 2011 outlined suitable access to parking, staircases, passageways, bathrooms, and signages (23). The country has yet to ordain enforceable comprehensive accessibility standards at public or private healthcare facilities. This approach will minimize the additional costs to improving accessibility by ensuring that newer facilities are accessible at the design-phase, as retrofitting can be expensive (11).

Health information intended for the general public shall be available in accessible formats appropriate to people with different kinds of disabilities; and the use of sign languages and Braille shall be facilitated in official interactions according to Article 21 of the UNCRPD (3). The National Health Promotion and HIV strategic plans included interventions to avail health information in the form of Brail and using audio-visual spots with Sign language (24). However, none of these were witnessed during our observations at the public health facilities. Mainstreaming such initiatives in fiscal plans of local health authorities will ensure funding of activities to improve accessibility, including training of care providers in Sign language and availing accessible health messages at peripheral health facilities (13).

Inclusive healthcare requires health professionals competent in patient-centered primary care in healthcare facilities (21). Limited integration of disability-related content in medical education curricula hampers care providers' competency to address the diverse needs of disabled patients (25). Thus, it is imperative that medical education curricula in Ethiopia integrate essential disability competencies as has been proved effective in other countries like India (26). Moreover, inclusion of catch-up trainings in continuing professional development programs of local health authorities is essential to reach care providers already in service delivery (8, 21).

Strengths and Limitations

There are important strengths and limitations to our study, which must be considered when interpreting the findings. To our knowledge this study is the first of its kind in the country that generated triangulated evidence to provide a more general description on the accessibility of public health facilities. The study employed both quantitative and qualitative methods, and generated data from different study populations. By contrast, other audits in the country generally focused on physical accessibility only and failed to generate triangulated evidence. The study employed validated research tools with items derived from the Universal Design standards. There are also limitations. The study did not include private health

facilities and the views of care providers working there. Only items enroute outpatient clinics or nearest to passageways were evaluated in the accessibility audit of health facilities, yet there may be variation in accessibility of similar features elsewhere in the facilities.

Implications for Policy and Practice

This study sheds some light on accessibility of public health facilities in Ethiopia. Several changes need to occur to make service delivery at public health facilities in the country disability inclusive. The Ministry of Health shall institute guidelines for minimum accessibility standards at health facilities and include the same in the requirements for licensure of health service providers. In addition, the ministry shall establish indicators and mandatory accessibility audits to monitor improvements in the accessibility of health facilities. Moreover, disability-inclusive clinical practice and communication competencies need to be implemented in medical education curricula of higher institutions in the country. Only then can the country deliver on its commitments of UNCRPD and the Sustainable Development Goals on Health and ultimately achieve Universal Health Coverage for all.

Conclusion

Creating disability-inclusive environment at health facilities improves service delivery for both PWDs and without disabilities. For example, improved access in interior environments, toilets, and examination rooms will benefit not only PWDs, but also elderly people and patients who could not walk without support. Training care providers on communication with- and care of PWDs improves their skillsets in patient-centered care in general, facilitating trust building in patient-provider relationships. Furthermore, patients who feel heard and valued are more likely to be proactive in managing their health, adhere to treatment plans, and seek healthcare when needed. Hence, improving access will promote preventive health practice and increase uptake of primary care preventing health sequelae and associated healthcare costs.

Abbreviations

CI

Confidence Interval

HSTP

Health Sector Transformation Plan

LMIC

Low and middle-income countries

OHCUP

Outpatient Health Care Usability Profile

PWDs

People with disabilities

WHO

World Health Organization

Declarations

Ethics approval and consent to participate

This study received ethical approval from the Institutional Health Research Ethics Review Committee of Haramaya University. Permission letter was obtained from Dire Dawa Regional Health Bureau and the heads of all the health facilities included in the study. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. All participants read the information sheet describing the study's aims, procedures, and voluntary participation before giving their written informed consent prior to data collection. Privacy and confidentiality of the respondents were strictly maintained throughout the study. A list of selected inaccessible items identified in the facility audit that can be modified with minimal resources to make sure access for people with disabilities was also shared with the respective health facilities.

Consent for publication

Not Applicable.

Competing interest

The authors declare no competing interests.

Availability of data and materials

Data will be available upon request from the corresponding author.

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Authors contributions

NA, YD and MD participated in the design of the study. BD conducted the analysis and write-up of results. All authors reviewed and approved of this manuscript.

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Figures

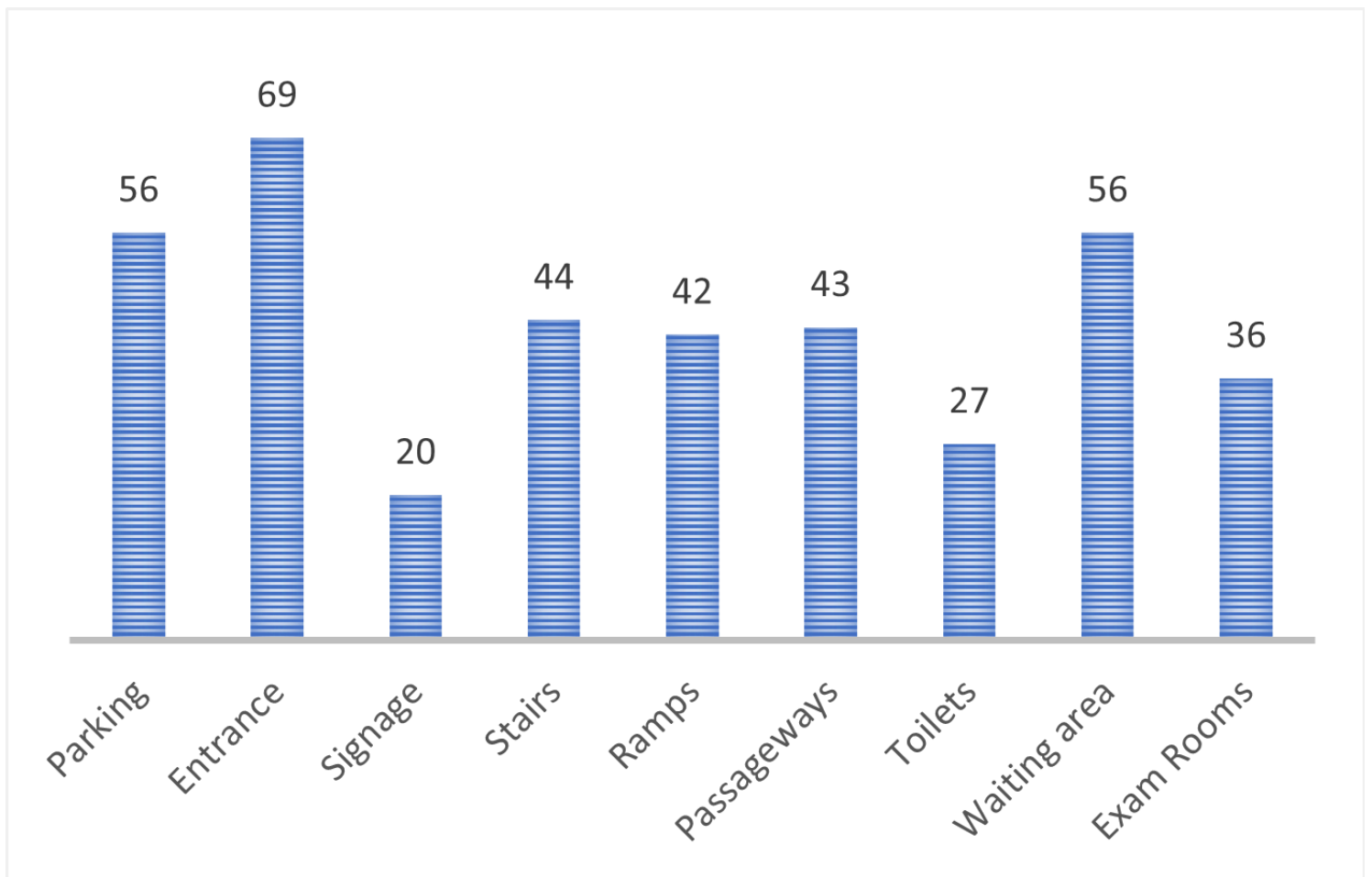


Figure 1

Subsection accessibility scores (%) of public health facilities (n=18).



Figure 2

Staircase and adjacent ramp to a service building at Jelobelina health center, Dire Dawa.



Figure 3

A major passageway enroute outpatient service units at Goro health center, Dire Dawa.



Figure 4

The interior of a toilet for public use at Legehare health center, Dire Dawa.



Figure 5

Toilet facility designated for disabled patient use at Dr. Abel health center, Dire Dawa.

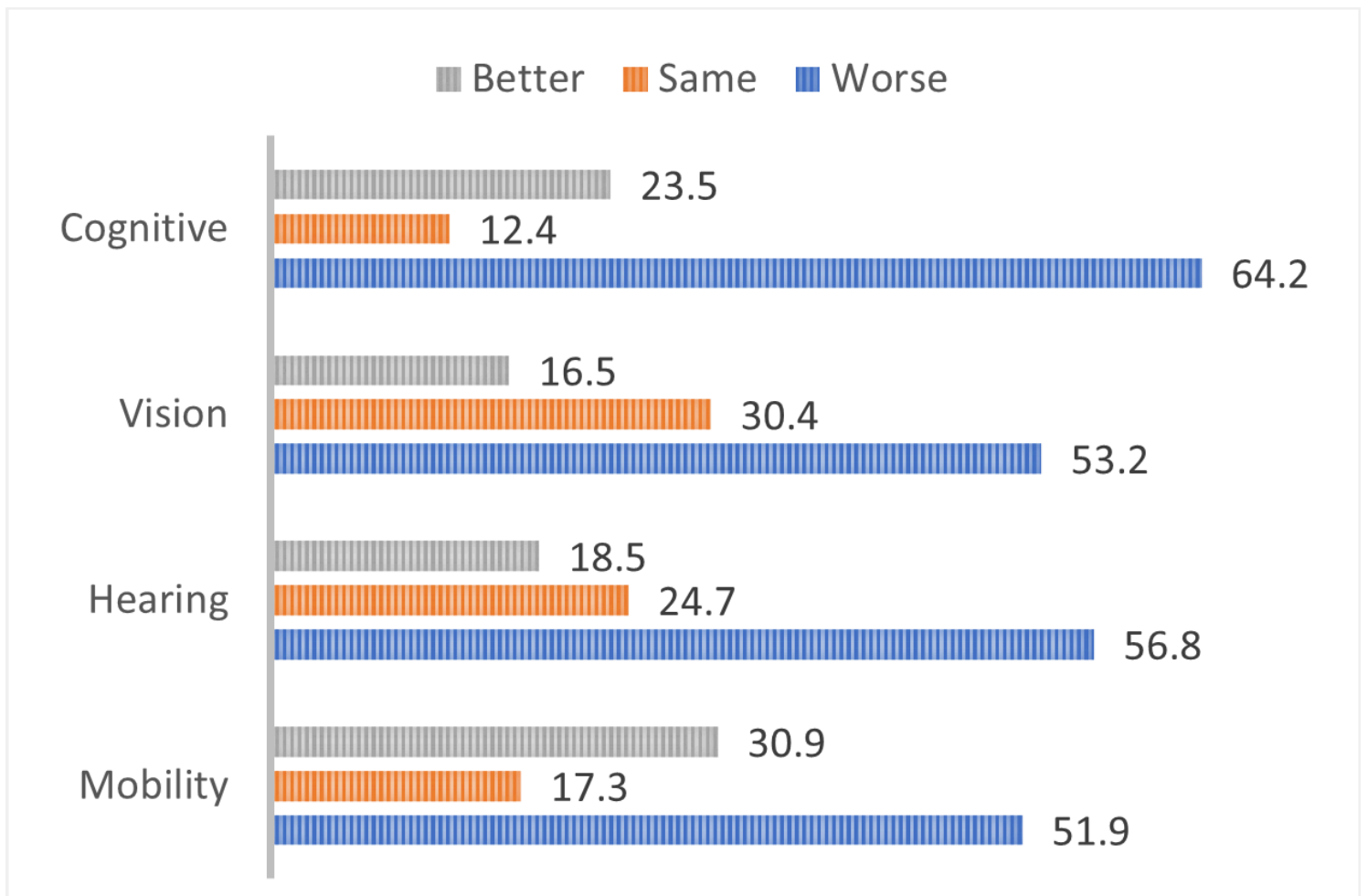


Figure 6

Perceived quality of care disabled patient care (%)

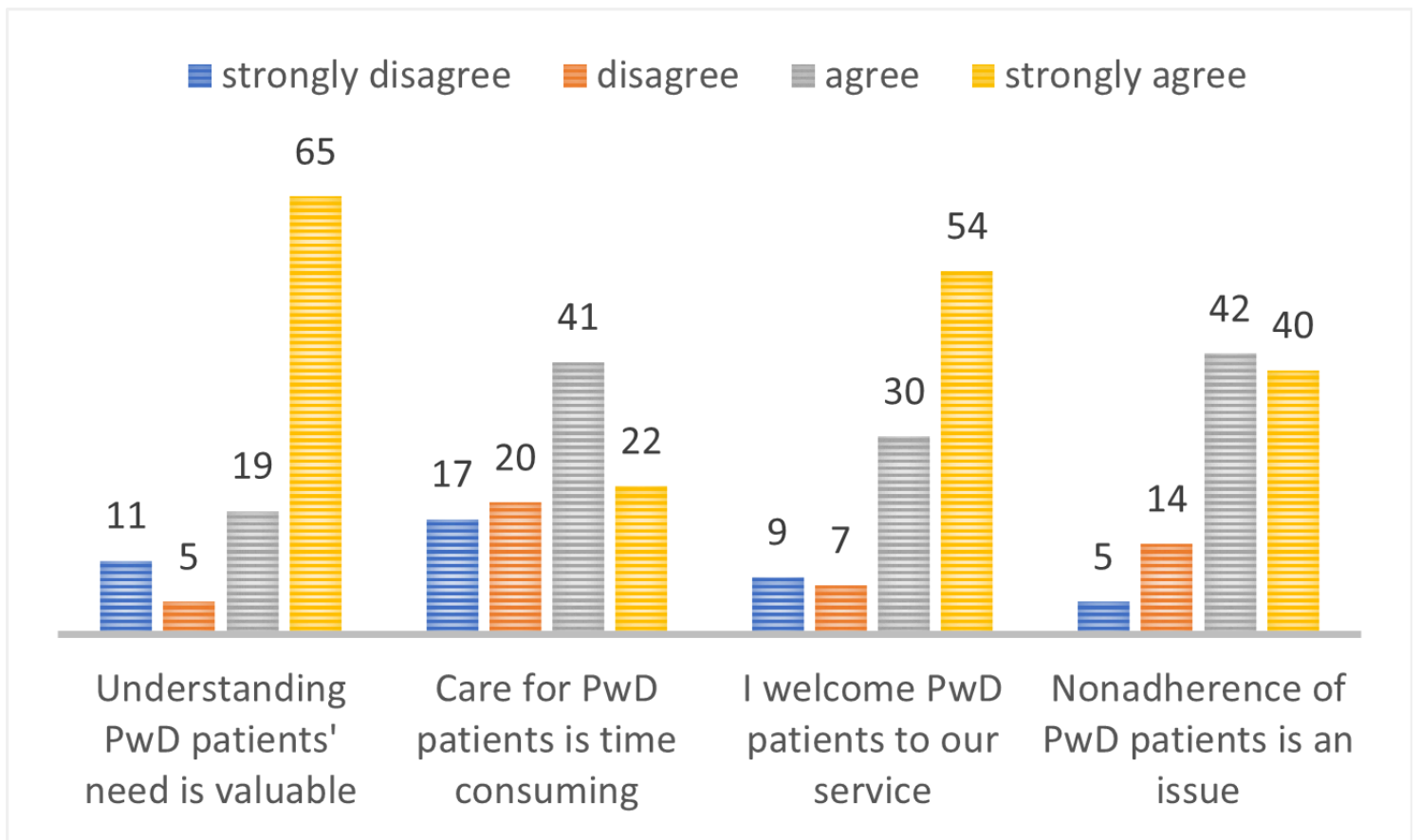


Figure 7

Attitudes of care providers on disabled patient care (%)

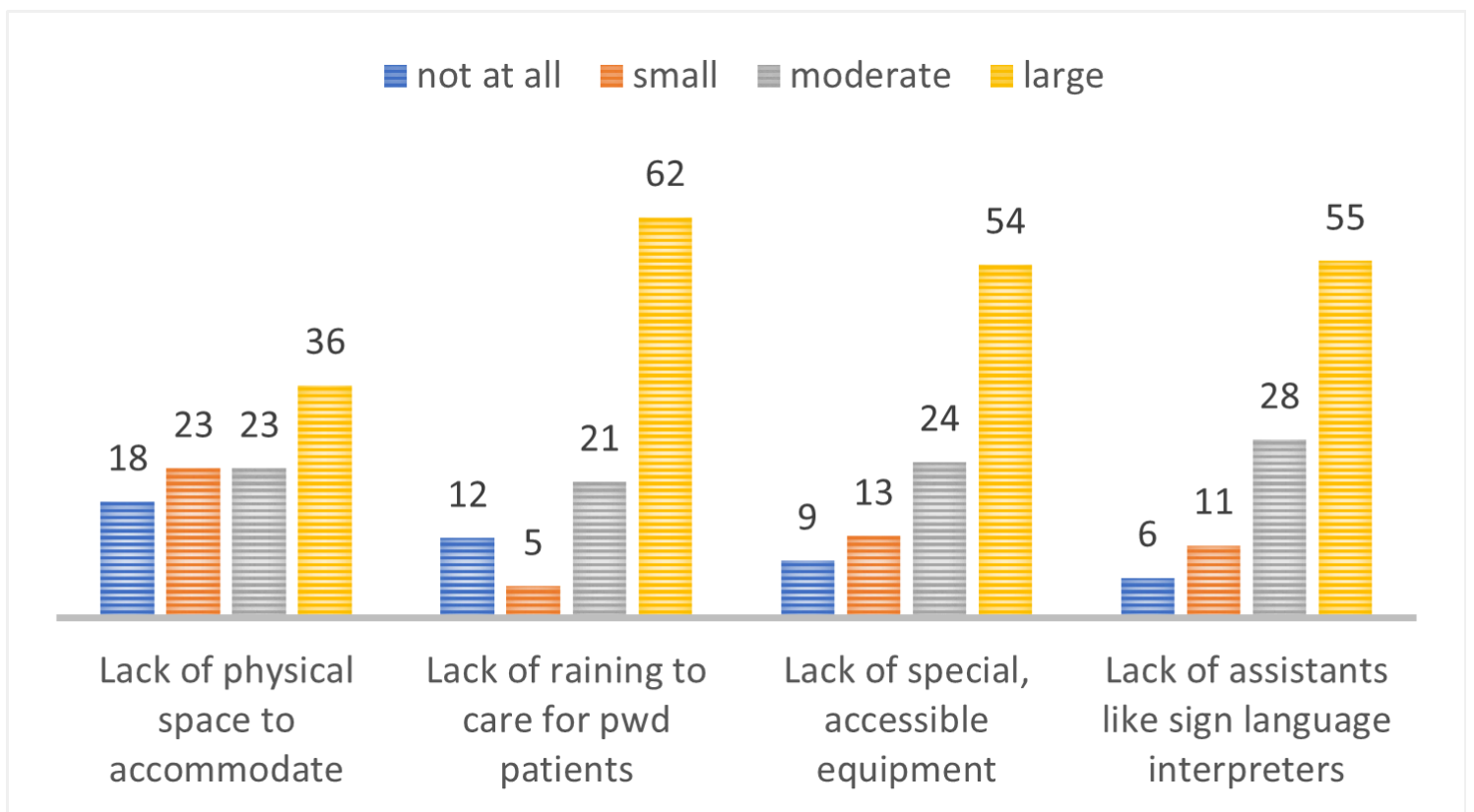


Figure 8

Perceived barriers to disabled patient care (%)

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