Barriers in accessing care services for physically disabled in a hospital setting in Riyadh, Saudi Arabia, cross-sectional study

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ABSTRACT

Objective: The aim of this study was to identify the significant difficulties in access to health care services experienced by patients with physical disabilities.

Method: A cross-sectional study at King Abdul Aziz Medical City, Riyadh, Saudi Arabia on 235 persons with physical disability, from 1 January to 30 June 2014.

Results: A total of 88% of the people with disability reported having the need for someone to accompany them. Over 52% were unsatisfied with parking, 49.8% with the waiting area, 51.3% with wheelchair services, and nearly 45% were unsatisfied with toilet facilities for the physically disabled. Those who were wheelchair bound had statistically significant lower mean score for satisfaction with services and facilities related to parking area, reception, and appointment, elevator, and physiotherapy. The majority were satisfied with the attitude of the clinical staff.

Conclusion: The majority of patients with physical disability require assistance and cannot move around independently in the healthcare facilities. Nearly half of these patients face several challenges in accessing health care services and are unsatisfied with the services received. Patients with physical disability who are wheelchair bound have a lesser degree of satisfaction than those who are not wheelchair bound.

1. Introduction

Equity in health ‘implies that ideally everyone should have a fair opportunity to attain their full health potential and more pragmatically, that none should be disadvantaged from achieving their potential’ [1]. A number of studies have shown that disabled people experience various negative health inequalities compared to those who are not disabled [2-4], particularly inequality in access to healthcare service [5].

Depending upon the WHO definition of physical disability [6] it is estimated that 3.73% of the Saudi population has functional disabilities [2] and 33% of all disability is physical disability [7]. Research is limited on the prevalence and incidence of disability [2].

Relative to the general population, people with disabilities are more likely to be sedentary and to have more health problems [8]. Access barriers are experienced at different points throughout a person’s healthcare journey and come in many different forms: structural, communicational, emotional and social barriers. People with disability have more challenges than people without disability to reach the clinic.

2. Subject and methods

2.1. Study protocol

Approval for study was obtained from Institutional Review Board at King Abdullah International Medical Research Center. Cooperation with physiotherapy, outpatient clinics, wheelchair services, occupational therapy, prosthetic department and neuro rehabilitation staff was obtained. All physically disabled adults attending King Abdul-Aziz Medical City in Riyadh, Saudi Arabia (between 1 January and 30 June 2014) were eligible to be enrolled for answering the questionnaires after they agreed to participate. A total of 235 participant were included. Patients excluded were those with learning, intellectual and mental disabilities, as well as children below age of eighteen.

A cross-sectional study design was adopted in this study. The questionnaire was developed after a thorough literature review [5,6,9]. The British standard design of buildings (developed by the BSI group) and their approaches to meet the needs of patients with disabilities was used in formulating the questions [9]. It is a widely used standard that covers accessibility to building.
2.2. Data entry and analysis

Data were entered and analyzed using SPSS version 20. Categorical data were summarized using frequency and percentage. Continuous variables were described using the mean and standard deviation. To be able to assess and compare the level of satisfaction each answer on the Likert scale was awarded points on a discrete range between −2 (indicating strongly disagree) and +2 (indicating strongly agree). Mean satisfaction score for each domain was then calculated and compared between different groups. The significance of the differences in mean scores was tested using student t-test. P-value of 0.05 or less was considered statistically significant. In addition, subjects who scored +1 and +2 on Likert scale items were considered satisfied. Subjects who were neutral about the service or scored negative on the scale were considered unsatisfied.

3. Results

3.1. Baseline characteristics (see Table 1)

All participants in the research were physically disabled. Figure 1 represents the cause of participant’s disability. In the following subsections, analysis was presented for participants’ satisfaction of NGHA (National Guard Health Affairs) hospital properties and services. Table 2 represents percent of the participants who were unsatisfied about the service.

As illustrated in Table 2, participants who were unsatisfied with priority in waiting and seat comfort of the waiting area was 63% and 60% of dissatisfaction respectively.

There are three items which got the high percent of dissatisfaction about the fourteen items in the toilet section of the questionnaire. They are the non-presence of emergency button in the toilet (65.8%), toilets’ door open outward (63.2%), and their usage only by non-disable people (66.4%).

There are eight items analyzed in the parking sections. Three of them showed high percent of dissatisfaction. They are the parking sufficiency (79.3%), space between parking (71.6%) and the use of parking by disabled people (64.8%). On the other hand most of the participants agreed with the availability of automatic door in the hospital entrance with (77.3%).

For wheel-chair services, there are four items which most participants seem to be not satisfied with. They are the ability to request the service by phone (79%), the sufficiency of the chairs (67%), using the wheel chair independently (65.2%) and quality of the chairs (62.3%).

![Cause of Disability (percent)](image)

Figure 1. Cause of participant’s disability.

| Cause of Disability (percent) |
|-----------------------------|
| Neurological disease        |
| Limited mobility because of other conditions |
| Fracture                    |
| Muscular disease            |
| Leg amputation (unilateral or bilateral) |

Table 1. Baseline characteristics of participants.

| Baseline characteristics | Frequency | Percentage |
|--------------------------|-----------|------------|
| Gender of the patient    |           |            |
| Male                     | 110       | 48.5       |
| Female                   | 117       | 51.5       |
| Visiting the hospital alone |         |            |
| Yes                      | 25        | 10.6       |
| No                       | 207       | 88.1       |
| Disability period        |           |            |
| Disabled since birth     | 13        | 5.9        |
| Disabled after birth     | 207       | 94.1       |
| Disability duration      |           |            |
| Being disabled for one year or less | 79 | 54.9 |
| Being disabled for more than one year | 65 | 45.1 |

Table 2. Percent unsatisfied with healthcare service/structure.

| Questionnaire item                      | Unsatisfied frequency |
|-----------------------------------------|------------------------|
| 1. Waiting area: Comfortable seat       | 136 (60)               |
| 2. Waiting area: Priority in waiting   | 143 (63.3)             |
| 3. Toilets: Used by disable people only | 152 (66.4)             |
| 4. Toilets: Door opens outward          | 144 (63.2)             |
| 5. Toilets: Emergency button or telephone | 146 (65.8)         |
| 6. Disable parking used by disable people only | 149 (64.8) |
| 7. Parking sufficiency                  | 184 (79.3)             |
| 8. Sufficient space between each parking| 164 (71.6)             |
| 9. Requested by phone                   | 177 (79)               |
| 10. Sufficiency of wheel chair          | 148 (67)               |
| 11. Quality of wheel chair              | 134 (62.3)             |
| 12. Use of wheel chair independently    | 146 (65.2)             |
Table 3. Percent satisfied with healthcare staff.

| Questionnaire item               | Satisfied frequency % |
|----------------------------------|-----------------------|
| Physicians                       |                       |
| 1. Polite and respective         | 190 (83.3)            |
| 2. Consider my special needs     | 175 (77.4)            |
| 3. Asked question to me directly | 179 (78.9)            |
| Nurses                           |                       |
| 1. Polite and respective         | 191 (83.8)            |
| 2. Consider my special needs     | 172 (75.8)            |
| 3. Asked question to me directly | 184 (80.3)            |
| Physiotherapist                  |                       |
| 1. Polite and respective         | 174 (78.4)            |
| 2. Consider my special needs     | 159 (71.9)            |
| 3. Asked question to me directly | 168 (75.7)            |
| Reception staff                  |                       |
| 1. Polite and respective         | 166 (73.5)            |
| 2. Consider my special needs     | 148 (64.6)            |
| 3. Asked question to me directly | 153 (66.8)            |

As illustrated in Table 3 hospital physicians, nurses, physiotherapists and reception staff deal with the disabled people in a very polite and professional way. This can be concluded from the high percent of satisfaction among the participants.

Table 4 shows that mean score of hospital’s parking, wheel-chair services and waiting area were significantly low.

Table 5 represents the relationship between being wheel-chair bound and being unsatisfied. There was significant relationship between being wheel-chair bound and being unsatisfied with hospital parking, reception and appointment services, elevators and physiotherapy. Participants who were wheel-chair bound were more unsatisfied than those who were not, with a significant p value less than 0.05.

Table 5 shows the significant relationship between disability period and being unsatisfied. Participants who were disabled for one year or less are more unsatisfied about the hospital stairs with p-value less than 0.05.

4 Discussion

4.1. Principal findings

Patients with physical disability face a lot of challenges in accessing health care services and are largely unsatisfied with the services provided to them. Several of these patients require assistance and cannot move around the healthcare facility independently.

4.2. Strengths and weaknesses of study

BSI British standard design of buildings [9] and their approaches to meet the needs of disabled people was used in formulating the questions. A list of variables was obtained from the British standard to formulate the research questionnaire.

We recognized different challenges while conducting the research in Saudi Arabia. Sensitivity of the disability still considered socially unacceptable. Many patients with disability are grossly limited to the activities they can participate in. We faced many cases of patients with disability who agreed to fill up the questionnaire, then their relatives refused the idea and persuaded them not to fill the questionnaire. The behavior of their relatives demonstrates that there is a degree of power imbalance between the patient and their caretakers. It is also worrisome that the caretakers hold a degree or dominance over the patients. There were also difficulties that came from the patient. Educational level stands as one of the big obstacles, as many patients with physical disability are poorly educated [10,11]. This became apparent as many of them struggled to read and understand the questionnaire, requiring assistance from others.

Table 4. Mean score of all hospital services for disabled persons.

| Service (score range) | N  | Mean | Standard deviation | Min | Max |
|-----------------------|----|------|--------------------|-----|-----|
| Parking (−16)-16      | 209| 0.3  | 7.10               | −16 | 14  |
| Slope (−18)-18        | 195| 2.48 | 7.11               | −16 | 16  |
| Stairs (−12)-12       | 182| 2.8  | 4.73               | −12 | 12  |
| Wheel-chair services (−16)-16 | 195| 0.28 | 7.39               | −16 | 16  |
| Reception and appointment (−10) | 212| 1.3  | 4.80               | −10 | 10  |
| Waiting area (−14)-14 | 205| 0.74 | 6.75               | −14 | 14  |
| Elevators (−12)-12    | 194| 2.78 | 5.46               | −12 | 12  |
| Toilet (−28)-28       | 181| 2.71 | 12.26              | −28 | 28  |
| Clinic and doctors and nurse (−20)-20 | 204| 7.33 | 7.57               | −16 | 20  |
| Physiotherapist and reception (−12)-12 | 216| 5.54 | 4.80               | −12 | 12  |

Table 5. Relationship between being wheel-chair bound and being unsatisfied with hospital services; and the relationship between disability period and being unsatisfied.

| Service                      | Wheel-chair bound | N  | Mean | Std. deviation | t   | P    | Mean difference |
|------------------------------|-------------------|----|------|----------------|-----|------|-----------------|
| Parking score total          | Yes               | 109| −53  | 7.68           | 2.07| .040 | 2.05            |
|                              | No                | 94 | 1.52 | 6.22           |     |      |                 |
| Reception and appointment score total | Yes | 109| 39   | 5.18           | 3.12| .002 | 2.05            |
|                              | No                | 98 | 2.44 | 4.15           |     |      |                 |
| Elevator score total         | Yes               | 103| 1.83 | 5.69           | 3.09| .002 | 2.42            |
|                              | No                | 85 | 4.25 | 4.88           |     |      |                 |
| Physiotherapy score total    | Yes               | 111| 4.86 | 4.42           | 2.46| .015 | 1.60            |
|                              | No                | 98 | 6.46 | 4.99           |     |      |                 |
| Disability period            | N  | Mean | Std. deviation | t   | P    | Mean difference |
| ≤ year                       | 62 | 1.32 | 4.59           | 2.24| .027 | 1.91            |
| > year                       | 51 | 3.24 |                 |     |      |                 |
Moreover, time and effort was a barrier of not participating of the staff.

Despite our best attempts, there are indeed some limitations in our study. We did not stratify all the different types of disability and correlate those with percent satisfaction. In our research, only physical disability was considered and other kinds of disabilities such as blindness, deafness and mental disability were not considered. Children were also excluded from the study. These can be candidates for future researches.

There are also other services in the hospital which were not considered in this research such as pharmacy services, laboratory services, telephone services and in-patient services. These are also candidate areas for future researches.

4.3. Relation to other studies

We used BSI variables to determine patient satisfaction about hospital services. Most of the previous studies were qualitative studies, differences in methods make comparisons with previous work difficult.

In our study, 88% of the people with disability reported having the need for someone to accompany them. This is higher than what has been reported by Castro et al. (2011) at rate of 50% [12]. This can show how difficult it is for persons with disability to come to the hospital and use the services alone.

29% of the participants found their parking used by patients without physical disability. This supports the notion that the general population is not highly respectful to those with physical disability. It also demonstrates lack of strict implementation of parking regulations. In terms of parking sufficiency, 79.3% of the participants found their parking insufficient. This could be explained in one of two ways. First, the number of the parking spots could be insufficient in comparison to the number of patients with physical disability who visited the hospital. Second, there may be an adequate number of spots, but their use by healthy people makes it insufficient. Moreover, 71.6% of the participants found not enough space between the parking to allow them to get from the car and use the wheel chair. Because of this, they are forced to come to the hospital only with the help of others. The parking issue was also reported by Castro et al. in their qualitative study in 2011 as one of the main obstacles and difficulty in accessibility to health services [12].

Toilets were found to be used by non-disabled people, as noted by 66.4% of our participants. In fact, people with disability should be able to find and use suitable toilet easily and safely. Lack of emergency button or phone in the toilet was reported by 65.8% of our participants. It is very important for the restroom to have emergency alarm. In fact, patients with multiple co-morbidities and using several medications are at high risk of fall. Availability of the emergency button can prevent injury. The absence or inadequacy of adapted toilets with alarms was also reported as a difficulty in accessibility to health services by Castro et al. [12].

A total of 10% of the participants found difficulties when they moved between the hospital facilities. The difficulties because the buildings were not designed to have allocated space for patients with physical disability, and also because the buildings are overcrowded. These difficulties usually delay patients when they are arriving for their appointments. Patients also found it difficult to move from one facility to another due to the far distance between the facilities. Similar difficulty was reported by Mari-Lynn et al. in their qualitative study [13].

There was significant correlation between being wheel-chair bound and being unsatisfied with hospital parking, reception and appointment services, elevators and physiotherapy. Participants who were wheel-chair bound were more unsatisfied than those who are not with a significant p value less than 0.05.

Similar result was found by Lisa I. Iezzoni et al. in their research 2002 [14]. Improving hospital parking, reception and appointment services to accomplish their needs will certainly improve their satisfaction.

4.4. Implication of study

Poorly designed buildings can create significant barriers for people who have mobility impairments. People with disability have more challenges on accessing health care services. There is a significant relationship between being wheel-chair bound and being unsatisfied about hospital services.

We still need more research about disability in Saudi Arabia. There is not enough data about prevalence, incidence or types of disability.

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