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Public and Private Hospitals in Kuala Lumpur and Selangor, Malaysia: How Do They Fare in Terms of Accessibility for the Physically Disabled?

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ABSTRACT

Public and private hospitals in Kuala Lumpur and Selangor were evaluated in terms of their accessibility for the physically disabled. The research hypotheses for this study included the following: (1) Both types of hospitals are accessible for the physically disabled as measured by specific criteria but (2) the degree of accessibility is higher in the case of private hospitals as compared to public hospitals. A total of 23 private hospitals and 11 public hospitals in Kuala Lumpur and Selangor were invited to participate in the study. The 5 private hospitals and 5 public hospitals that agreed were evaluated for adequacy of facilities for the physically-disabled. For this purpose, 13 specific criteria were assessed and scored for each hospital. These criteria were also grouped into 5 categories, namely, parking, toilet, door and lift, corridor and ramp. Scores were compared between each hospital and then aggregated and compared for private hospitals versus public hospitals. It was found that none of the 5 private hospitals and 5 public hospitals studied satisfied 100% of the criteria evaluated. Looking at each hospital individually, the overall scores range from 32% to 92% for the criteria set. Only 4 of the 10 hospitals in our sample achieved overall scores of 80% or higher in terms of the evaluation criteria we used. With the exception of availability of ramps where public hospitals scored slightly higher ,for most of the individual criterion, private hospitals scored higher than public hospitals. Looking at each criterion across all hospitals, the scores range from 59.2% (adequacy of parking) to 85% (adequacy of corridors). The median score obtained by private hospitals and by public hospitals for all 13 criteria were analysed for any difference. The difference between private hospitals and public hospitals is not statistically significant (Mann-Whitney U = 6.5, p-value = 0.099). There is no significant difference between Kuala Lumpur/Selangor private and public hospitals in terms of accessibility for physically disabled people. However, some hospitals are more accessible for the physically disabled than other hospitals. These findings indicate that there is room for improvement.

Keywords: Private hospitals, public hospitals, access, physically disabled, Selangor, Kuala Lumpur

INTRODUCTION

The World Health Organisation notes that disability is the "outcome or result of a complex relationship between an individual's health condition and personal factors, and of the external factors that represent the circumstances in which the individual lives"[1].

Data from the Economic and Social Commission of the United Nations show that there were 197,519 disabled people in Malaysia in 2007. Though only about 1% of the total population in Malaysia is classified as disabled, human rights advocates argue that governments should take steps to accommodate their special needs[2]. In this study, we focus on the physically disabled.

A hospital is a place frequently visited by physically disabled people, whether they suffer from a temporary or a lifelong disability. The "physically disabled" can range from victims of serious transportation-related injuries to those suffering from degenerative diseases and elderly members of society who have significant mobility problems. Hence, it is essential that all hospitals be made adequately disabled-friendly so as to accommodate the needs of all physically disabled people. Any inadequacy in terms of physical accessibility to hospitals would be a major concern for this category of disabled people. There have been reports indicating that the disabled often lack the opportunity to participate adequately in preventive healthcare activities. They also do not have sufficient access to primary healthcare, hospital care and long-term care services as compared to those who are able-bodied[3].

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We conducted a literature search on research papers written in English (published in international journals) and on the Directory of Medical Research under the National Medical Research Register (NMRR) for local studies that evaluated access of the physically disabled to health services. We discovered that studies which evaluated Malaysian hospitals in terms of access for the physically disabled based on a standard guideline are lacking[4] [5].

One study conducted in the USA entitled "Accessibility of Health Clubs for People with Mobility Disabilities and Visual Impairments"[6] sought to examine the accessibility of 35 health clubs to people with mobility and visual disabilities in various domains, which include the built environment. The study found that all facilities had a low to moderate level of accessibility. Some of the deficiencies were related to specific Americans with Disabilities Act (ADA) guidelines pertaining to the built environment.

Another study entitled "A Survey of Hospital Toilet Facilities" assessed the accessibility of toilet facilities for the disabled[7]. Disabled-friendly toilet facilities are of great importance to the disabled. The results of this study show that although the quality of toilet facilities varied, none met the standards recommended by the British Standards Institution[7]. The study also highlighted an important point – that hospital admission may lead to a loss of independence and dignity for the disabled if disabled-friendly features failed to be incorporated into the design of hospitals.

Another study titled "Measuring Physical Access Barriers to Services: 'Snapshot' Research in 4 Town/City Centres in Britain" examined access to a sample of services in four town/city centres[8]. The study found that leisure services had the least barriers whereas retail services had the most barriers to physical access.

For our study of Malaysian hospitals located in Kuala Lumpur and Selangor and how they fare in terms of accessibility for the physically disabled, we decided to focus on two main issues: whether both types of hospital are accessible for the physically disabled as measured by specific objective criteria and also if the degree of accessibility is higher in private hospitals as compared to public hospitals.

METHODS

We invited all 11 public hospitals and all 23 private hospitals in Kuala Lumpur and Selangor to participate in our study. We excluded hospitals located outside these regions (exclusion criteria) because of time and travel cost constraints: our research study was carried out as part of the requirements for the Community-Based Project (CBP) module of the Year 2 curriculum for medical students at the Sunway Campus of Monash University. We decided to evaluate and quantify the accessibility of private and public hospitals for the physically disabled using specific, objective criteria such as parking facilities, toilet facilities, and other features such as the nature of doors, lifts, corridors and ramps.

In order to conduct research in public hospitals, approval from NMRR was obtained. Hence, registration as investigators was done before getting the project to be registered under NMRR for two different components: the Malaysian Research Ethics Committee (MREC) and Institute of Health Management (IHM). After this step, the public hospitals were contacted. As for the private hospitals, a complete list of private hospitals in Selangor and Kuala Lumpur was obtained first. The private hospitals were then contacted to seek their agreement to participate in our study. Ethical clearance was also obtained from the relevant committee at the medical school of Monash University.

Our evaluation form used for accessing disabled-friendly facilities was based on the "Americans with Disabilities Act Standards of Accessible Design" (see Appendix 1) and inspired by a research study entitled 'A Survey of Hospital Toilet Facilities' published in the British Medical Journal[7, 9].

The hospitals were evaluated and scored using our evaluation form and following the criteria and the scoring system set out in Table 1 above. For example, referring to the second category in the table (toilet), scores were given based for the first criterion (features of the disabled toilet) based on the number of sub-criteria fulfilled. The 5 sub-criteria are as follows:

1. Presence of rail on the side of the toilet, so as to enable wheelchair users to slide across to the toilet seat; rail accessible from toilet seat.
2. Washbasin reachable from toilet seat/patient is able to wash hands while being seated on the wheelchair.
3. Door opens outwards to ease passage of wheelchair unless the toilet is especially large.
4. Safety alarm/call button is available.
5. Door which is wide enough for a wheelchair to pass through (0.9 m minimum).

As another example, the same method was applied when the category "door and lift" was assessed. For the criterion "disabled-friendly features in hospital lift", two sub-criteria that were used for scoring included the width of the lift door and control buttons which are within the reach of wheelchair users.

Table 1. The 13 criteria assessed in each hospital and our scoring system*

		Score					
Category	Criteria	0	1	1.5	2	3	Full Score
Parking	Ratio of car park spaces for the physically disabled to number of hospital beds	No disabled parking spaces	1 : > 200	1 : 100 - 200	1 : < 100	-	6
	Distance from disabled car park to hospital's entrance	>30 m / no parking	11 - 30 m	-	0 - 10 m	-	
	Covered pathway from car park to hospital's entrance	Absent	Partial	-	Complete	-	
Toilet	Features of the disabled toilet	No disabled toilet	Below 3 sub-criteria	-	3 or more sub-criteria	Fully disabled-friendly	7
	Ratio of disabled toilets to normal toilets	No disabled toilet	1 : >2	-	1 : 1.5 - 2	1 : 1	
	Door handle of disabled toilet	Door knob	Lever style	-	-	-	
Door and	Door size of consultation room	< 0.9 m	0.9 - 1.2 m	-	>1.2 m	-	5
Lift	Door handle of consultant room	Door knob	Lever style	-		-	
	Disabled-friendly features in hospital lift	No lift with such features	1 criterion fulfilled	-	2 criteria fulfilled	- -	
Corridor	Space in common area and corridor width	Narrow	1.2 - 2 m	-	> 2 m	-	4
	Presence of handrails and grab rails	Absent	Partially present	-	Fully present	-	
Ramp	Presence of ramps where necessary	Absent	Partially present	-	Fully present	-	3
	Gradient of ramp	> 4.7°	< 4.7°	-	-	-	
						Total	25

* Adapted from Travers et al. (1992) and United States Access Board (1990)

We visited each of the 10 hospitals that agreed to participate (5 private hospitals and 5 public hospitals) and examined their facilities in terms of the 5 categories, i.e. parking, toilet, door and lift, corridor, and ramp. Evaluation of hospital facilities was carried out in public areas only. The data collected was analysed using the IBM SPSS Statistics software package (Version 20.0). The Mann-Whitney Test was used for hypothesis testing as the sample size was small and also because the data was not normally distributed. The main hypothesis tested was that "There is a significant difference between private hospitals and public hospitals in terms of their accessibility for the physically disabled."

RESULTS

We invited 11 public hospitals to participate in our study. Of these, 5 agreed to participate, 5 rejected and 1 did not respond to our request. As for the 23 private hospitals we contacted, only 5 agreed to participate. 7 hospitals rejected the offer and there were no replies from the other 11 private hospitals. Thus, 45.45% of all the invited public hospitals took part in our study while only 21.7% of invited private hospitals did so. The overall positive response rate was 29.4% for all hospitals.

The hospitals that agreed to participate in our study varied significantly in a few aspects such as the year of establishment, size in terms of number of hospitals beds, and specialised field or special services provided. Of the 10 hospitals evaluated, 1 hospital was constructed before the 1980s, 1 hospital was constructed in the 1980s,

4 hospitals were constructed in the 1990s, and 4 other hospitals were constructed after the year 2000. Also, the hospitals were of markedly different sizes. The hospital sizes range from only 65 beds to 2,302 beds. In addition, the hospitals were found to specialise or focus on different groups of patient. Some of the hospitals specialise in the provision of rehabilitative care, some are specialised in secondary or tertiary referral centres, while some are general hospitals that serve a lot of outpatients.

The following tables show the mean rank, sum of ranks, Mann-Whitney U and p-value obtained by private and public hospitals for each criterion.

Table 2. Results of Mann–Whitney test for each category of criteria assessed, private hospitals versus public hospitals.

	Type of hospital	No. of Responses	Mean Rank	Sum of Ranks	Mann-Whitney U	p-value
Parking	Private	15	17.73	266.00	79	0.145
	Public	15	13.27	199.00		
	Total	30				
Toilet	Private	15	16.23	243.50	101.5	0.636
	Public	15	14.77	221.50		
	Total	30				
Door and Lift	Private	15	16.60	249.00	96	0.422
	Public	15	14.40	216.00		
	Total	30				
Corridor	Private	10	12.05	120.50	34.5	0.121
	Public	10	8.95	89.50		
	Total	20				
Ramp	Private	10	10.40	104.00	49	0.935
	Public	10	10.60	106.00		
	Total	20				

Table 3. Results of Mann-Whitney test for all criteria combined (total score), private hospitals versus public hospitals.

	Type of hospital	No. of Responses	Mean Rank	Sum of Ranks	Mann-Whitney U	p-value
Total Score	Private	65	70.64	4591.5	6.5	0.099
	Public	65	60.36	3923.5		
	Total	130				

From Table 2, it can be seen that for most of the criteria, private hospitals scored better than public hospitals with the exception of availability of ramps where public hospitals scored slightly higher. It is also noted that the difference in sum of ranks (score) between private and public hospitals in terms of parking space is the largest whereby private hospitals did better. Nevertheless, the p-value for every criterion evaluated using the Mann-Whitney Test indicates that there is no statistically significant difference in disabled-friendly facilities between private and public hospitals. From Table 3, it can also be seen that the hypothesis "There is a significant difference between private hospitals and public hospitals in terms of overall accessibility for the physically disabled" is not supported.

Analysing private and public hospitals individually (Table 4), it can be seen that no hospital satisfied 100% of the criteria we used as measures of accessibility for the physically disabled. As shown in Table 4, there is a wide difference in the percentage of criteria fulfilled amongst hospitals, with the highest at 92% (Hospital C) and the lowest at 32% (Hospital H). In terms of parking, overall the hospitals fared rather poorly, fulfilling only 59.2% of the criteria set. However, the hospitals evaluated scored well in the category of corridor, fulfilling 85% of the criteria set.

Table 4. Scores for individual hospitals and percentages of criteria met by each hospital.

Category	Private Hospitals					Public Hospitals					Total Score	Percentage of Criteria Met (All Hospitals)
	A	B	C	D	E	F	G	H	I	J		
Parking	0	5.5	5	5	5	4	3.5	1	3	3.5	35.5	59.2
Toilet	0	6	7	5	6	6	6	2	2	5	45	64.3
Door and Lift	4	4	5	3	3	4	4	2	3	3	35	70
Corridor	4	3	4	4	4	4	3	1	3	4	34	85
Ramp	3	3	2	2	2	2	3	2	2	3	24	80

DISCUSSION AND CONCLUSION

Based on our analyses of the 5 public hospitals and 5 private hospitals, we find no statistically significant difference between private and public hospitals in terms of accessibility for the physically disabled (for individual criterion as well as overall). Our initial hypothesis that the degree of accessibility is higher in the case of private hospitals as compared to public hospitals was not supported. One possible reason for this is that in recent years, funding for public healthcare in Malaysia has increased considerably. This would mean that public hospitals, which were often perceived to be inferior to private hospitals in terms of accessibility for the disabled in the past, would have more funds to upgrade their physical facilities (including upgrading in order to meet the needs of the physically disabled). According to the 9th Malaysia Plan (2006-2010), funds allocated for healthcare came up to RM 10.7 billion. This is in sharp contrast to the allocation of RM2.3billion under the 6th Malaysia Plan (1991-1995) [10, 11].

As for our evaluation of the individual hospitals and the degree to which they met the 13 criteria (grouped into 5 categories) to be assessed, the criteria for the categories “Ramp” and “Corridor” were most complied with (Table 4). This is probably due to the fact that ramps are widely seen as the most basic, common and necessary facility that should be provided by hospitals. Furthermore, the costs incurred in building ramps are relatively low and the presence of ramps also facilitate the physical movement of hospital equipment such as patient beds.

In the case of corridors, most hospitals have spacious corridors because of the need for adequate space to facilitate movement of equipment as well as ambulatory patients, wheelchair-bound patients as well as bed-bound patients.

The evaluation category that is least complied with is “Parking” for the physically disabled (Table 4). This may be due to the common perception that a physically disabled patient would normally be brought to the hospital by a family member or friend instead of driving himself or herself to the hospital. As such, hospital authorities might have neglected to provide sufficient parking spaces for the physically disabled. Other criteria under the category “Parking” that may be inadequately met include distance from the disabled car park to the hospital entrance and the provision of a covered pathway from the parking spaces to the hospital entrance.

In terms of individual hospital scores for “Parking”, private hospitals appeared to perform better than public hospitals. The reason for this could be that most of them have a lower capacity (number of beds) as compared to public hospitals. It is safe to assume that it would be more difficult for a very large hospital to comply with requirements such as “ratio of disabled car park spaces to number of hospital beds” as compared to a small hospital. Hospitals with a larger capacity would have to allocate plenty more parking spaces for the disabled and this might be difficult to do as it involves additional costs, in addition to space constraints.

In terms of toilet facilities, the compliance rate to the set criteria is 64.3%. This is clearly inadequate to allow independent use by the physically disabled. This finding concurs with the finding of a British survey on hospital toilet facilities which found that such facilities did not fulfil the requirements of the disabled[7]. (One important finding from the British study which should be highlighted is that the wards accommodating elderly patients had the worst toilet facilities).

The findings of our study concur, as well as contradict, previous research which were based on the perception or experience of disabled people. One study in Washington DC in the USA which interviewed disabled patients found that insufficient access to primary preventive services was due to structural-environmental barriers as well as process barriers[12]. However, another study conducted in Massachusetts, USA found that access to healthcare was good, with over 80% of respondents agreeing[13]. These studies indicate that physical access or the perception of the degree of physical access may vary significantly depending on location.

Lastly, although we found no difference between private and public hospitals in our study, we wish to point out that some of the hospitals in our sample scored lower than the others in terms of overall accessibility for the physically disabled. This is consistent with the findings of studies from other countries [14-19] which suggest that barriers to care remain in the case of hospitals. Only 4 of the 10 hospitals in our sample achieved overall scores of 80% or higher in terms of the evaluation criteria we used. Based on the results of this study, it is hoped that the relevant hospital administrators will take action to improve the accessibility of their hospitals for the physically disabled. Steps must be taken to address deficiencies of hospital accessibility in order to meet the needs of physically disabled members of Malaysian society.

Limitations

One of the limitations of this study was that there were only 5 public hospitals and 5 private hospitals in our sample. Obtaining approval from the hospitals was quite difficult in that many hospitals did not respond to our invitation at all. Others simply refused to participate in our study. This is especially true in the case of the private hospitals.

Another limitation was that there is a significant difference in terms of year of establishment for the hospitals that agreed to take part in our study. This could be a possible reason why the hospitals satisfied the assessed criteria to varying degrees. Hospitals that were established earlier presumably were not subject to clear guidelines designed to increase accessibility for the physically disabled as compared to hospitals established later on.

Another limitation was that the evaluation process was restricted to the public areas of the hospitals only. We were not granted permission to evaluate other areas such as wards.

Initially, we also planned to collect data on the perceptions of disabled people associated with DAMAI (a non-governmental organisation serving disabled people in the Klang Valley) with respect to how disabled-friendly hospitals in Kuala Lumpur and Selangor are. However, the low response rate (only 8 questionnaires were returned out of 65 handed out) made us decide to drop this part of the study.

Recommendations for future work on the issue

A larger nationwide study should be conducted in order to evaluate Malaysian hospitals in terms of their accessibility for the physically disabled. Such a study will provide a clearer picture of the level of hospital accessibility for the physically disabled in different parts of Malaysia, including those serving rural communities. Such a study should also take into account the year of hospital establishment as well as control for the size (number of beds) of the hospitals being evaluated.

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* Adapted from Travers *et al*. (1992) and United States Access Board (1990)

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APPENDIX 1

Scoring System for Evaluation of Disabled-friendly Facilities in the Hospital
[Adapted from Travers et al. (1992) and United States Access Board (1990)]

1.	Ample reserved parking for car or motorcycle used by the disabled (Score from 0 to 3 based on number of parking spaces, maximum of 3 points) Addn. description:	
2.	Distance of parking space to entrance (Score from 0 to 3) How far? (write down the estimated distance:[ ]) Addn. description:	
3.	A covered pathway that connects the parking lot to the hospital (score from 0 to 2) (0 = absent, 1 = partial, 2 = complete) Addn. description:	
4.	Size of doors and whether they are sufficiently large (0 = narrow, 1 = just enough space, 2 = wide) (minimum 1.2 m) Addn. description:	
5.	Presence of disabled-friendly toilets (0 = no disabled-friendly toilets, 1 = below 3, 2 = 3 or more criteria fulfilled, 3 = fully disabled-friendly) Criteria for fully disabled-friendly toilet a. Rail on the side of the toilet, to enable wheelchair users to slide across from chair to toilet seat, rail accessible from toilet seat b. Washbasin reachable from toilet seat/can wash hands while seated on wheelchair c. Door opens outwards to ease passage of wheelchair unless the toilet is big enough d. Safety alarm/call is available e. Door width enough for wheelchair to go through (0.9 m minimum) Addn. description:	
6.	Number of disabled toilets in common areas (0 = no disabled toilet, 1 - 3 to be determined according to disabled toilet to normal toilet ratio) Common area : outside of wards Addn. description:	
7.	Toilet door handle designed to be disabled-friendly (0 = door knob, 1 = lever style) Addn. description:	
8.	Consultation room door handle (0 = door knob, 1 = lever style) Addn. description:	
9.	Lifts in the hospital are disabled-friendly (0 = no lift, 1 = not disabled-friendly lift, 2 = disabled-friendly lift/single-storey hospital) Addn. description:	
10.	Spaces/corridors in the hospital are spacious enough to move comfortably relative to wheelchair size (0 = narrow, 1 = just enough space, 2 = wide) Addn. description:	
11.	Handrails and grab rails (0 = absent, 1 = partially present, 2 = fully present/ unnecessary) Addn. description:	
12.	Presence of ramps where necessary (0 = absent, 1= partially present, 2 = fully present/ unnecessary) Addn. description:	
13.	Gradient of ramp (scale 0-3) Angle : Addn. description:	
14.	Total score	