

## Wheelchair Accessibility of Tourists Sites in Kuwait: A Descriptive Study

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### Abstract

**Background:** There are no published data on the environmental accessibility in Kuwait.

**Objectives:** To evaluate the level of accessibility of tourist sites for wheelchair users in Kuwait.

**Methodology:** This is a descriptive study about the accessibility of tourist sites in Kuwait. A convenient sample of six tourist sites was included in this study. The researchers applied the adapted version of McClain and Todd questionnaire for the selected sites to determine their level of wheelchair accessibility.

**Results:** The percentage of accessibility ranged from 12.5% to 78.12%. The highest wheelchair accessible site was the Avenue Cinema (78%) while the least wheelchair accessible site was Dickson's House (12%). All of the sites did not comply completely with wheelchair accessibility requirements in the five major areas of accessibility of ramps, entrances, elevators, routes, and parking.

**Conclusion:** Architectural barriers to wheelchair users persist in tourist buildings despite wheelchair accessibility being a legal requirement in Kuwait.

**Keywords:** Wheelchair, Tourists, Disabled people.

### Introduction

Accessibility refers to a minimum level of design and built-in environment necessary to accommodate people with disabilities [1]. Environmental accessibility is a basic right of any member in the society because it is a major factor that can directly influence one's engagement and participation in the community. From the occupational therapy perspective, engagement and participation in community is considered an ultimate goal for human beings and has a great influence on health and wellbeing [2]. According to Occupational Therapy Practice Framework: Domain and Process, engagement in occupations are central meaning to individuals and groups [2].

One of the things that prevent anyone to perform his/her occupation is disability [3]. Disability was defined by the International Classification of Functioning, Disability, and Health (ICF) of the World Health Organization (WHO) as an umbrella term for impairments, activity limitations and participation restrictions [3]. Bromley, Matthews, and Thomas presented impairment and disability according to two models: medical and the social. The medical model, views disability as existing in the person him/herself, while the social model implies disability as a problem of the society that is not acting successfully in both the environmental design and the way in which services are provided to

### Article Information

**Article Type:** Research

**Article Number:** JMRR105

**Received Date:** 24 December, 2018

**Accepted Date:** 17 May, 2019

**Published Date:** 24 May, 2019

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**Citation:** Al-Bathali M, Manee F, Tariahc HSA (2019) Wheelchair Accessibility of Tourists Sites in Kuwait: A Descriptive Study. J Multidis Res Rev Vol: 1, Issu: 1 (26-32).

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people with disabilities [4]. This is consistent with the ICF view of disability [3].

In fact, it is not only a problem of disabled people because everybody can be disabled if the environment is not designed according to his or her needs. Accessibility of the indoor and outdoor environment can have many positive effects such as independent, community mobility, community integration, social activities, economic opportunities, and better quality of life [2]. On the other hand, inaccessible built-in environment can restrict lives of wheelchair users. Even when a person with disability has a well-fitted wheelchair, he/she can face barriers and obstacles due to inaccessible buildings [3]. A public place should provide accessibility to everyone, regardless of physical abilities or financial resources. However, accessibility could be restricted by designers and authorities, albeit often unconsciously.

Many studies were conducted to assess various forms of accessibility to public buildings in developed and developing countries. For example, some researchers examined wheelchair ramp accessibility. The results revealed that ramps were moderately comply with wheelchair accessibility requirements. In the United Arab Emirates, the compliance rate was 47% [5]. In Zimbabwe, the compliance rate was only 38% [6]. In US, the compliance ranged from 40 to 100% [7-9].

Other studies focused on assessing accessibility to building entrances. The average compliance rate reported in the studies conducted in the United Arab Emirates, Zimbabwe and Turkey were somewhat similar, 68%, 70% and 79%, respectively [5,6,10]. Studies conducted in Mexico and the US reported 50-100% compliance for public buildings, grocery, and convenience stores [11-13].

On the same line, 80% of London city's underground stations are inaccessible for wheelchair users [14]. Absence of lifts in underground stations in London prevents mobility of impaired people [15]. Likewise, poorly designed bus stops and car parking designs cause obstacles for mobility impaired people. In turn, such limitations can cause people with disabilities to be isolated [16]. The above findings showed poor compliance on architectural accessibility in developed and developing countries. Such studies showed that accessibility for disabled people is a universal problem. People using wheelchair cannot fully access public buildings [17] which can be contribute to excluding them from the community including work, recreation, and leisure sites.

Environment barriers are major aspects to be considered especially for wheelchair users. In alignment with World Health Organization [3], health-care professionals must shift their approach toward a bio-psycho-social model. Health care professionals are encouraged to assist in directing governmental policies toward providing supportive and accessible environment which can lead to successful community integration and participation of people with disabilities. Access to public buildings could enhance active participation in the community [16].

People with disabilities worldwide have acts that were generated by the WHO and adopted by all countries in the

world that prohibits discrimination against disabled [3]. In countries like the United State of America and India, there are laws and regulations in place on accessible infrastructure. For example, In India, Persons with Disabilities Act was developed in 1995. Americans with Disabilities Act in the USA was developed in 1990. The ADA is one of Americans most comprehensive piece of civil rights regulation that prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in the mainstream of life [18]. The ADA stressed that people with disability should have access to employment opportunities, public transportation, public places (e.g. restaurants, schools, and museums), telecommunication, to purchase goods and services, and to participate in State and local government programs and services [18]. In addition to ADA Kurniawan, stated that there is Universal Designs (UD) that should be in any building to be accessible for wheelchair users to overcome any architectural barriers. According to a study conducted by Evcil, accessibility to public buildings in Istanbul/Turkey is still problematic to wheelchair users [10,19].

According to Unites Nation Development Program (UNDP) in Kuwait in 2008, the State of Kuwait plays a significant and leading role amongst Arab States in terms of awareness, advocacy and recognition of disabilities and inclusion and in 1996, a "Disability Law" was officially passed which paved the way for the creation of "The Higher Council for the Disabled Affairs (HCDA)". There are 27,000 registered persons with disabilities in Kuwait benefiting from a diverse range of benefits and services that guarantee their inclusion as well as positive contribution to the Kuwaiti society [20].

According to Disability Rights Education and Defense Fund, in Kuwait, accessibility law in 1996 and in article 12 the scope was as followed: "All governmental authorities have to comply with the international standard that required for disabled persons in all public areas especially public buildings and roads, public housing, entrance of markets, entertainment sites, car parking, and other public facilities" [20,21]. However, still in Kuwait we lack accessibility in many governmental or public buildings. There is a general anti-discrimination legislation against people with disability and, although the accessibility law in Kuwait is explicitly written, it is not implemented on the ground.

Kuwait is recently becoming a more tourist country [22]. Every year, there is an annual festival in the month of February which is called "Hala February". Usually, many tourists from different countries come to visit Kuwait [22]. Therefore, it is important for the tourist's sites in Kuwait to be accessible to all people including wheelchair users. Several accessibility studies have been done to evaluate the environmental accessibility for wheelchair users in different countries. There are no published data on the environmental accessibility in Kuwait. Extent of architectural obstructions and barriers that wheelchair users may find when they use tourist sites in Kuwait are not investigated. Thus, this study aimed to evaluate the level of accessibility of tourist sites in Kuwait for wheelchair users.

## Materials and Methods

This descriptive study utilized the adapted version of McClain and Todd questionnaire to evaluate the accessibility of six conveniently selected tourist sites in Kuwait. After obtaining approval, the researcher selected six tourist sites from a list of common tourist sites in Kuwait. Examples of potential tourist's sites included: Al-Maseela Beach, Kuwait Zoo, Entertainment City, Al-Sadou House, Ice Skating Rink, Hawalli Park, Green Island, Kuwait Towers, the Avenue Cinema, National Museum, the Scientific Center, Aqua Park, Dickson's House Cultural Centre, Al-Shaab Park, and **Al-Babtain Central Library for Arabic Poetry**. The convenient sample of tourist sites that were selected for this study were: Hawalli park, the Avenues cinema, Dickson's House Cultural Centre, and Al-Sadou House, Kuwait Zoo, and **Al-Babtain Central Library for Arabic Poetry**. They were selected because those six sites are the most popular in Kuwait.

*Hawalli Park* is a big tourist site that was opened in 2004. The park contains different entrainment facilities suitable for different ages, restaurant, playing hall, small shops and a major bookstore.

*Avenue Cinema* is located in the Avenues Mall, which is the largest shopping mall in Kuwait and one of the largest and premier retail and leisure destination in the Middle East. The Avenues Cinema is a multi-screen movie complex that was established in 2007.

*Al-Sadu House* is an artistic house and museum in Kuwait City. It aims to promote and celebrate Kuwait's cultural and textile heritage. It is a one floor building that was established in 1938 to protect the Bedouins heritage and their main ethnic handicrafts; the Sadu weaving. Sadu is a hand woven embroidery that typically formed in geometrical shapes.

*Dickson's House Cultural Centre* (known as Beit Dickson) is a tourist attraction that is located in Kuwait City. The house, which consists of thirty rooms on two floors, was the home of former British political agent Colonel Harold Dickson and his wife, Violet. The house includes a museum of the Dickson's living quarters and a collection of photographs taken during Kuwait's British protectorate era. *Dickson's House* was built in 1870 and is considered as one of few surviving examples of 19th-century Kuwaiti architecture.

*Kuwait Zoo* is a one floor building that was built in 1968. It is a vital facility and important interface of the country, which has scientific, cultural, recreational, and touristic objectives. It is visited each year by thousands of visitors to see wild and domestic animals. The zoo offers a variety of services for all categories of visitors valued by investment companies.

***Al-Babtain Central Library for Arabic Poetry* is the world's first library specializing in Arabic poetry. The library was opened in 2002 and it includes up to 138000 books, references, manuscripts, periodicals as well as electronic resources.**

## Instrumentation

One of the investigator in this study collected data. She was trained in measuring and collecting data of six

sites in Kuwait. The trained data collector applied the McClain and Todd questionnaire to determine the level of wheelchair accessibility of the selected tourist sites through direct observation and actual site measurements [6]. The questionnaire covers eight sections investigating the wheelchair accessibility of the tourist sites, with dedicated questions for each section. Each item of the eight sections was scored as compliant (yes, score: 1), non-compliant (no, score: 0) or partially compliant (partially, score: 0.5). Wheelchair accessibility was determined on a 16 point-scale, with a perfect score of 16 representing 100% accessibility [23].

The eight sections of the questionnaire were as follows; Section A covers the demographic data of the building (name, location, date of construction, purpose of building). Section B covers the accessibility to the building (width of sidewalk, availability and convenient of the ramps). Section C covers accessibility to building entrance (accessibility of entrance of the building, and door accessibility). Section D covers accessibility on vertical circulation within building (elevator, ramp, dimensions of elevator). Section E covers accessibility inside building (access to all inside space, width for wheelchair passage). Section F covers accessible of toilet (handicap toilet, accessibility of the interior design of the toilet). Section G covers accessibility of public telephones. Section H covers accessible of car parking areas (availability of handicap parking, appropriate measurements of the parking space, route connecting the parking with the entrance of the building).

Wheelchair accessibility was determined on a point scale based on specifications provided. Descriptive statistics of simple percentages and means were used to determine the level of compliance to the guidelines of the instrument, and wheelchair accessibility to the surveyed buildings.

## Results

The percentage of wheelchair accessibility of the tourists' sites ranged from 12.5% to 78.12%. The most accessible site was the Avenue Cinema (12.5 out of 16) while the least accessible site was Dickson's House (2 out of 16). Four out of the six sites had ramps in their main entrances; however, none of these ramps was a wheelchair accessible ramp. Hawalli Park and Dickson's House entrances did not require ramps. The results of this study for each accessibility section are shown in table 1.

The accessibility of sites' entrances is presented in table 2. Entrances from sidewalks to main entrances were all partially conformed to wheelchair accessibility requirements. All the sidewalks had obstacles and the floor surfaces were not smooth. The Avenues cinema and Hawalli Park were completely accessible with horizontal circulation. On the other hand, Al-Sadou House, Dickson's House, Kuwait Zoo, and Al-Babtain Library were partially accessible in horizontal circulation. Al-Babtain Library has carpeted flooring, which affects propelling of wheelchairs.

Concerning vertical circulation, only the Avenues Cinema was completely accessible in this regard, as it had accessible elevators. On the hand, Hawalli Park and Al-Babtain Library were partially complied with wheelchair accessibility

**Table 1:** Accessibility of Tourists Sites.

Items of Useh questionnaire	1*	2*	3*	4*	5*	6*
Demographic data: Date of construction	2007	2004	1938	1870	1968	2002
Accessibility to the Building: Is the width of sidewalk convenient?	1	1	0.5	0.5	0.5	1
Is ramp on sidewalk convenient?	0.5	0	0.5	0	0.5	0.5
Accessibility of the Building Entrance: Is the approach from sidewalk to the main entrance of building accessible?	0.5	0.5	0.5	0	0.5	0.5
Horizontal circulation accessibility	1	1	0.5	0.5	0.5	0.5
Is at least one door accessible	1	1	0	0	0	1
Accessibility On Vertical Circulation Within Building Is a convenient vertical circulation provided in building	1	0.5	0	0	0	0.5
Are dimensions of elevator and position of buttons inside and outside convenient	1	0	0	0	0	1
Accessibility Inside Building: Is there a level or ramped access to all inside space	1	1	0.5	0.5	0	0.5
Are cashier, counter dimensions convenient? (height & width)	0	1	0	0	0	0.5
Accessibility of the Toilets Is there any handicap toilet	1	0	1	0	1	1
Is interior design of toilet accessible	1	0	0.5	0.5	0	0.5
Accessibility of Public Telephone Is there at least one public telephone accessible by a wheelchair	0.5	0	0	0	0	0
Does the accessible telephone have at least 76/122 cm clear floor space that allows the approach by wheelchair	1	0	0	0	0	0
Accessibility of Car Parking Areas Is there any accessible handicap parking	1	0	0	0	1	1
Is disabled people's parking space appropriate	0.5	0	0	0	0.5	0.5
Is there an accessible route connecting the parking with the entrance of building	0.5	1	0.5	0	0.5	0.5
Total accessibility score = 16	12.5	7	4.5	2	5	9.5
1* Avenue Cinema 2* Hawali Park 3* Al-Sadou House 4* Dickson's House 5* Kuwait Zoo 6* Al-Babtain Library						

requirements. Their elevators were not wheelchair accessible because they were small and did not allow the 180 degrees turning radius of a wheelchair is shown in table 2.

As shown in table 2, Avenues Cinema, Hawali Park, and Al-Babtain Library have convenient and accessible doors. On the contrary, most doors in Al-Sadou House, Dickson's House and Kuwait Zoo had elevated threshold in addition to rough surfaces starting from the main entrance and throughout the entire buildings. These limitations affected accessibility to the main entrances, showrooms and bathrooms.

Regarding accessibility of car parking areas, table 3 showed that Hawalli Park, Al-Sadou House, and Dickson's House lacked handicapped parking while the Avenue Cinema, Kuwait Zoo, and Al-Babtain Library had handicapped parking. Nonetheless, the available handicapped parking did not meet the standards criteria as they lacked appropriate parking space, curb cut and clear signs. Dickson's House did not have any car parking space. The Avenue Cinema, Kuwait Zoo and Al-Babtain Library did not include clear routes that connects the handicapped parking with the entrance of each of those sites.

**Table 2:** Accessibility of the Building Entrance.

	1* Score (%)	2* Score (%)	3* Score (%)	4* Score (%)	5* Score (%)	6* Score (%)
Approach from Sidewalk to The Main Entrance	0.5 (50)	0.5 (50)	0.5 (50)	0 (0)	0.5 (50)	0.5 (50)
Accessibility of Horizontal Circulation	1 (100)	1 (100)	0.5 (50)	0.5 (50)	0.5 (50)	0.5 (50)
Accessibility On Vertical Circulation Within Building: A Convenient Vertical Circulation Provided In Building (ramps/ elevators)	1 (100)	0.5 (50)	0 (0)	0 (0)	0 (0)	0.5 (50)
Is at Least one Door Accessible?	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)
1* Avenue Cinema 2* Hawali Park 3* Al-Sadou House 4* Dickson's House 5* Kuwait Zoo 6* Al-Babtain Library						

## Discussion and Conclusion

This descriptive study is a step toward general knowledge on wheelchair accessibility needs of tourist sites in Kuwait. In Kuwait, most tourist sites are old and facilities

for wheelchair users are not carefully considered. It is very difficult for a wheelchair user to integrate and participate in the community because of inaccessibility to most public

who are pushing strollers or carts to access the buildings much more easily. This study is consistence with previous studies showing ramps not to be completely complied with wheelchair accessibility requirements in other countries [5-9].

**Table 3:** Accessibility of Car Parking Areas.

	1* Score (%)	2* Score (%)	3* Score (%)	4* Score (%)	5* Score (%)	6* Score (%)
Accessible Car Parking Space	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
Appropriateness of Parking Space for People with Special Needs	0.5 (50)	0 (0)	0 (0)	0 (0)	0.5 (50)	0.5 (50)
Is There an Accessible Route Connecting the Parking with the Entrance of Building?	0.5 (50)	1 (100)	0.5 (50)	0 (0)	0.5 (50)	0.5 (50)
1* Avenue Cinema 2* Hawali Park 3* Al-Sadou House 4* Dickson's House 5* Kuwait Zoo 6* Al-Babtain Library						

places. The findings of this study show that architectural barriers to wheelchair users persist in tourist buildings despite wheelchair accessibility being a legal requirement in Kuwait. Reasons included inaccessible sidewalks, ramps, entrances, elevators, car parking spaces, and inaccessible routes connecting the parking with the entrance of the buildings.

Three tourist sites (Dickson's House, Al-Sadou House and Kuwait Zoo) were built before the endorsement of accessibility law in Kuwait in 1996 and the other three buildings (Avenue Cinema, Hawalli Park, and Al-Babtain Library) were built after establishment of the accessibility law. The highest wheelchair accessible site was Avenue Cinema (12.5/16), followed by Al-Babtain Library (9.5/16), and Hawali Park (7/16). The least accessible sites were Kuwait Zoo (5/16), Al-Sadou House (4.5/16), and Dickson's House (2/16). It is obvious that newly built buildings are at least somewhat more accessible than older buildings. This implies the necessity to reevaluate the accessibility problems at the old tourist sites and fix it.

Ramps and curbs are architectural barriers that can limit wheelchair users from integrating into the environment. Ramps are important element of building accessibility. A ramp slope should have a ratio of 1:12 gradient for independent wheelchair propelling. Level landing area for a wheelchair is also needed [24]. In consistent with other studies, it was found that absence of ramps makes it harder for wheelchair users to access buildings and perform required activities [16]. Dickson's House and Hawalli Park do not have ramps while other four sites do not have accessible ramps with accurate measurements and specifications. Al-Sadou House and Dickson's House are two stories buildings and they are limited in this regards; Al-Sadou House did not include a ramp or an elevator while Dickson's House had a very long ramp (more than 200 cm) and its surface was rough and not stable, which can affect wheelchair users' safety. Ramps are necessary in order to make buildings more accessible for wheelchair users. This study shows that wheelchair ramps are incorrectly installed. Therefore, this does not help people who use wheelchairs to access the buildings easily and safety. It also does not allow caregivers or people

The tourist sites that were constructed after the accessibility law was initiated (i.e., Avenues Cinema, Hawali Park and Al-Babtain Library) had more convenient and accessible entrance doors. On the contrary, older buildings (i.e., Al-Sadou House, Dickson's House and Kuwait Zoo) had only partial accessible entrance doors in addition to other limitations, such as obstructed entrances and uneven floor surfaces. The most common architectural barrier in older buildings was steps at entrances. Additionally, the majority of entrances had raised thresholds which affect accessibility to those sites, including accessibility to main entrances, showrooms and bathrooms among other facilities. The results of this study are consistent with other international studies, which showed that entrances of public building were moderately accessible and that compliance rate ranged from 50-100% [4-6, 8-13]. Additionally, this is also in-line with previous studies showing obstacles such as door width and heavy doors were common in many buildings [12,25].

In regards to vertical circulation, only Avenues cinema had fully accessible elevators. The other recently constructed sites (i.e., Hawalli Park and Al-Babtain Library) were only partially complied with wheelchair accessibility requirements. Their elevators were small and did not allow the full turning radius of a wheelchair. The bigger elevators were freight elevators and their locations were not conveniently accessible to wheelchair users. Additionally, some of the elevators did not have satisfactory features. Some had heavy manual doors and some had high controls that are often not suitable for wheelchair users. These results appear consistent among second and third world countries. For example, in Zimbabwe, the compliance rate for vertical circulation was 83% [7], in the UAE, the compliance rate was 48% [5], and in Turkey, the compliance rate was 59% [10].

Regarding accessibility of car parking areas, Hawalli Park, Al-Sadou House and Dickson's House did not have any parking allocated to people with special needs. Dickson's House actually did not have any car parking spaces at all. The Avenue Cinema, Kuwait Zoo and Al-Babtain Library did provide parking for people with special needs, although not without limitations. The parking spaces, curb cuts, and clear signs did not comply with the standards. On a positive note, the parking dedicated for people with special needs did comply with regulations in regard to the number of parking slots, the location of the parking, and the display of the international symbol for special need/disability parking sign. The limitations of parking facilities to people with special needs are not specific to Kuwait, but are also minimum to moderate across the globe. The percentage of compliance rate in USA was (65%, 56%, 53%, 40%) [7,8,12] and in Turkey was (53%) [10]. In Zimbabwe and UAE, the compliance rate was merely at 19% [7] and 18% [5] consecutively.

This study showed that most of the buildings partially complied with accessibility requirements of w/c routes. It

is in agreement with other studies assessing compliance of wheelchair routes requirements. In the United Arab Emirates study, 76% of routes were found to comply with w/c accessibility requirements [5]. In Turkey it was 65% [10] while in Nigeria, 40% of routes in hospitals, 22% in educational institutions, 18.2% in social recreation facilities and 14% in government agencies [24].

In this study, five major areas have been identified as important areas of accessibility, namely ramps, entrances, elevators, parking, and routes. These areas are essential for wheelchair users to be able to access a building and participate in its activities. Lack of access would limit person's level of participation in the community. It is therefore important for healthcare professionals and policy makers to promote the need of accessibility in such public area. Because of the gap between need and reality, professionals in this practice area, such as occupational therapists, architecture engineers, urban planners, interior architects, building estate managers and landscape designers, can serve as mediators through which individuals with special needs can contact and negotiate with authorities to be allowed their basic right of accessing their communities. When constructing new sites, the needs of people with disabilities should be always be considered.

Authorities and policy makers in Kuwait need to enhance the standards of access into the tourist as well as to the public buildings. The provision of a universally accessible built environment in Kuwait requires collaboration between various qualified professionals related to the accessible built environment. More workshops, seminars or conferences about accessibility need to be organized and held in Kuwait. In such events, qualified health care professionals can educate policy makers, people in authorities, other health care professionals, and the public about the needs of disabled people in Kuwait. Thus, people with disabilities can approach public buildings and tourist sites, enter them, operate in them, and use them safely and with dignity [2,26].

This study included only six tourist sites. A bigger number of tourist sites and public buildings need to be considered before generalizing our results. This study is also limited to wheelchair users and did not consider individuals with other type of disabilities. A more comprehensive study of multiple public buildings in Kuwait that consider accessibility for inclusive individuals with special needs is warranted,

Accessibility for people with disability and wheelchair users is a universal problem. To improve accessibility in tourist buildings, there is a need to enforce implementing the accessibility regulations in Kuwait. Although the new tourist buildings are generally more accessible compare to the old ones, they remain to have many limitations. Old tourist buildings in particular need to be gradually renovated and modified in order to meet the guidelines.

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