

## Pathology of Urban Space Based on Standard Designs for Wheelchair Users, Sari 2011

*Mehdi Golestanibakht, Khadijeh Rabiei, Reza Lahmian*

(Mehdi Golestanibakht, Bachelor of economy, wheelchair user, Sari, Iran, pmgolestany@yahoo.com)

(Khadijeh Rabiei, MD, Traditional and Complementary Medicine Research Center, Mazandaran University of Medical Sciences, Sari, Iran, mprabie@yahoo.com)

(Reza Lahmian, Urban planning, Payam Noor University, Sari, Iran, rlahmian@yahoo.com)

### 1 ABSTRACT

**Purpose:** In recent years the practitioners and sociologists apply all urban standard design so that all citizens can equally make use urban facilities and live in their privacy. Persons with disabilities are members of society that have limitations and don't live like normal people. Environmental conditions should be in such a way that they can increase their ability and quality of life. In this study we analyzed the urban space according to standard design for wheelchair users in Sari. This historically attractive city is located in north of Iran.

**M&M:** This was a cross-sectional study done in spring 2011. A checklist was developed according to governmental and international standards. Thirty restaurants, 20 streets and 20 bus stations were randomly selected. All of Public drinking-fountains, Parks, Cinemas, Libraries, Museum, Gyms and Public toilets were assessed. Content validity was obtained by consultation with experts. These places examined by experienced wheelchair users. Reliability was tested "test-re-test" method (Pearson Correlation Coefficient,  $r=0.78$ ). Scales for evaluation were as; existed as standard, existed but not as standard. Data entered the SPSS (16) software to analyze.

**Results:** Sari has 300.000 population and 3923 square kilometer area. This city has 4 parks, 3 public toilets, 3 Public drinking-fountains, 2 cinemas, 2 libraries, 2 gyms and one museum. One hundred percent of all intended pedestrians, bus stations and restaurants and other items are inapplicable for persons who always use wheelchair in their life and relied on them.

**Conclusion:** This survey showed that since urban design isn't based on international standards, the disabled especially people who utilize wheelchair can't use urban facilities and have to stay at home and therefore the quality of their life reduces. It seems it is necessary to revise urban design, governing and performing of correct a fair law.

### 2 INTRODUCTION

Many people become physically disabled in some occasions in their lives. There are few people who remain healthy and able in whole period of their life. Enjoying life, attending and progressing in society are the right of all people. A major outcome of the "International Year of Disabled Persons" was the formulation of the World Program of Action (WPA) concerning disabled persons, adopted by The United Nations General Assembly (UNGA/GA), that was important act towards recognizing the rights of the disabled, understanding of their needs and appreciation of their capabilities on 3 December 1982, by its resolution 37/52 (1-3). The WPA is a global approach to promote disability prevention, rehabilitation and equalization of opportunities, which pertains to full participation of the disabled persons in social life and national development (3). The conference on the capabilities and needs of disabled persons in the economic and social commission for Western Asia (ESCWA) region was held in November 1989, recommended that city planning and construction legislation, should take into account the conditions that facilitate the movement of disabled persons and ensure their safety, including in the design of infrastructural services, transport and the entrances and interiors of buildings. Early in 1994, ESCWA was requested to provide Lebanon with assistance in developing construction standards and policy recommendations to accommodate disabled people. ESCWA began with an assessment of the magnitude of the issue on the national level, hoping to devise a long-term strategy and aiming at placing urgent short-term measures within an integral capacious perspective. The Lebanese company for the development and reconstruction of Beirut central district (SOLIDERE) and ESCWA provided the manual that it can also be used as a reference by designers and planners (1). A barrier-free environment is a space that allows free and safe movement, function and access for all, regardless of age, sex or condition. A barrier-free environment can be of four domains (1, 4):

- Inside buildings

- In the immediate vicinity of buildings
- On local roads and paths
- In open spaces and recreational areas.

As far as the built-up environment is concerned, it is important that it should be barrier-free and adapted to fulfill the needs of all people equally. As a matter of fact, the needs of the disabled matches with the needs of the majority, and all people are at ease with them. As such, planning for the majority implies planning for people with varying abilities and disabilities. The disabled people should be to take an active part in society and lead a normal life. To be active, a disabled person should be able to commute between home, work and other destinations (1). This research analyzed the urban area according to the international codes for wheelchair users in Sari.

### 3 MATERIAL & METHODS

This was a cross-sectional study. A checklist was created by consulting the experts and according to the national codes. Ten items was looked for. Thirty restaurants, 20 streets and 20 bus stations were randomly selected. All of Public drinking-fountains, Parks, Cinemas, Libraries, Museum, Gyms and Public toilets were assessed. Scales for evaluation were as; "existed as the standard" and "existed but not as standard". Content validity was obtained by consultation with experts. Examiners were experienced wheelchair users familiar with design codes. Reliability of checklist was examined by retesting the 10 random selected items in 2 weeks (Pearson Correlation Coefficient,  $r=0.78$ ). For analyzing data we used of SPSS (16) soft ware.

### 4 RESULTS

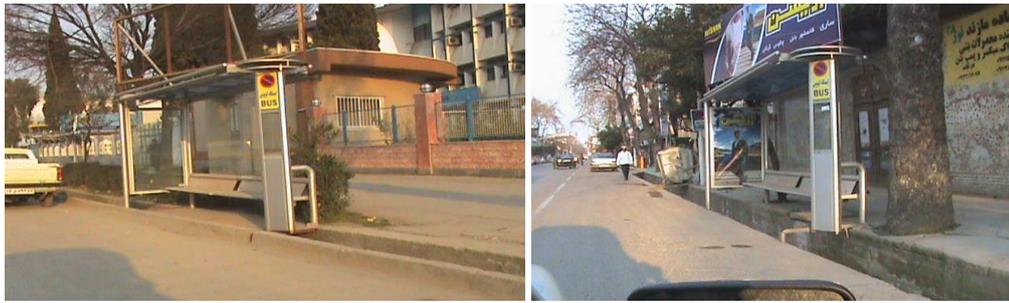
Sari is a historical city and locate in north of Iran. It has 300,000 population and 3923 square kilometer area. This city has 4 parks, 3 public toilets, 3 Public drinking-fountains, 2 cinemas, 2 libraries, 2 gyms and one museum. One hundred percent of all intended pedestrians, bus stations and restaurants and other items are inapplicable for persons who always use wheelchair in their life and relied on them (Table 1).

	Items	Standard No. (%)	Existed/Not standard No. (%)
1	Pedestrian	0 (0)	20 (100)
2	Bus station	0 (0)	20 (100)
3	Restaurant	0 (0)	30 (100)
4	Park	0 (0)	4 (100)
5	Public drinking-fountain	0 (0)	3 (100)
6	Cinema	0 (0)	2 (100)
7	Library	0 (0)	2 (100)
8	Public toilet	0 (0)	3 (100)
9	Museum	0 (0)	1 (100)
10	Gym	0 (0)	2 (100)

Table 1: Condition of urban facilities for wheelchair users, Sari, 2011.



Figure 1: The public drinking-fountain is located on platform. Figure 2: The ramp in the public toilet isn't standard.



Figures 3 and 4: The design of bus stations aren't standard for all people especially wheelchair users.



Figures 5 and 6: Park has stairs and bollards. There isn't any ramp for the disabled.



Figures 7 and 8: As it is shown in the pictures, the disabled couldn't walk in the pavement.



Figures 9 and 10: The junction point between pedestrian and street should be flat but in these pictures we are faced to some levels.



Figures 11 and 12: Street has a level that wheelchair users couldn't go across the street.

## 5 DISCUSSION & CONCLUSION

The study showed Sari has not urban design standards minimal for the disabled therefore they cannot present in society actively and their physical and mental situations deteriorate. Eleven years after the distribution of regulations of appropriateness of buildings for the disabled, few officials and constructors observed such

issue (5). Concept of the quality of life is multifaceted and comparative. It is affiliated to time, place, personal and social features (6). There are two approaches in the studies of urban quality of life, subjective and objective. Approaches are used often separate from each other and are rarely combined to assess the quality of life. (7). Quality of life in subjective aspects reflects people perception and evaluation of their own life. It is measured by social and material indices (8). In these recent decades many countries have emphasis on the role of people, local communities and civic society in urban management at global levels (9). The principles of the urban management include:

- urban civility and citizens' education
- continuous poll from citizens
- codified rules for informing and guiding citizens
- gaining trust of public and private sector
- verifying and revising the actions which have been done (10)

Australian Capital Territory (ACT) provides design standards for urban infrastructure. In section 13, pedestrian & cycle facilities are described. This standard aims to provide Practitioners with a suite of planning considerations and design measures to ensure a consistent approach is maintained in the provision of pedestrian and cycling facilities. Pedestrians and users of wheelchairs, including motorized wheel-chairs have right of way over cyclists and users of wheeled recreational devices including roller blades, roller skates and skateboards (11). There are lots of urban standard designs were performed in many countries especially the developed countries therefore the disabled could work and attend in the society (12-19). Each city does not belong to especial type of people. Indeed, city looks like a family. By planning the cities correctly, all members can take a good advantage in their residence. It seems necessary to revise teaching in university and performance in urban management. In order to give a chance for all to use equal value from urban facilities, historical construction should be rebuilt and the government should make sure to perform the correct laws. Because almost all cities in Iran don't have standard designs for people with disability, we recommend the international conventions to provide Iran with assistance of standards of developing construction to accommodate disabled people.

## 6 REFERENCES

1. Accessibility for the Disabled -A Design Manual for a Barrier Free Environment, 1998, Solidere, UNESCWA, Ministry of Social Affairs, Lebanon ([www.un.org/esa/socdev/enable/design](http://www.un.org/esa/socdev/enable/design))
2. International Classification of Impairments, Disabilities and Handicaps (ICIDH), World Health Organization, Geneva, 1980.
3. [www.un.org/disabilities](http://www.un.org/disabilities).
4. Ferneeuw, S.: Guidelines for planning a barrier-free environment, a practical manual to improve physical accessibility in Afghanistan. Services; Techniques et Etudes pour la Participation Social 2005.
5. Golestanibakht M., Rabiei Kh., Mojtahedzadeh M.: "The Quality of Public Facilities for the Disabled Sari, Iran, 2010". Essen, 2011
6. Momeni, M., Azizi, H., Taghinia, M.: Urban Management based on Citizen Participation to Enhance Quality of Life in Tehran.
7. Lee, Y.-J: Subjective quality of life measurement in Taipei. In: Building and Environment, Vol. 43(7), 2008.
8. Rezvani, M.R. and others: Development and Assessment of Urban Quality of Life indicators. In: Journal of Urban and regional Studies and Research, first year, No. 2, Tehran, 2009.
9. Hajipur, K.: Neighborhood based Planning, an efficient approach on creating sustainable Urban Management. In: Journal of Fine Arts Magazine, No. 26, Tehran, 2006.
10. Mozayyeni, M.: Municipal, Councils and Urban Management in Iran. In: Journal of Urban Management, No. 2, Tehran, 2000.
11. Gill, T., Zissler M.: Design standard for urban infrastructure, Pedestrian & Cycle Facilities. (Australian Capital Territory) ACT Government.
12. [www.access-board.gov](http://www.access-board.gov)
13. Lusher, R H., Mace, R I.: Design for physical and mental disabilities. In: Wilkes JA and Packard RT (Eds.), Encyclopedia of architecture. New York John Wiley and Sons 1989: 748-763.
14. U.S. Architectural and transportation barriers compliance board, 1992. Americans with disabilities act. Washington: ATBCB.
15. [www.act.gov.au](http://www.act.gov.au) (Australian Capital Territory)
16. [www.ap.buffalo.edu](http://www.ap.buffalo.edu) (IDeA)
17. [www.ansi.org](http://www.ansi.org) (American National Standards Institute)
18. [www.ada.org](http://www.ada.org) (Americans with disabilities)
19. [www.cae.org.uk](http://www.cae.org.uk) (Center for Accessible University)