

*Full Length Research Paper*

# **Accessibility for the disabled people to the built environment in Ankara, Turkey**

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**This research has been made to investigate the accessibility of the disabled people living in Ankara to the built environment and their problems and priorities with respect to participation to urban life and to what extent they can share urban life. The study made on the basis of a survey covers visually-impaired and walking-impaired people as well as those dependent on wheelchairs. The evaluations have provided information relevant to the problems that the disabled people face with respect to accessibility to the built environment, their usage of the built environment and participation to social life and their priorities in this respect. Findings of the research show that the disabled people face many physical barriers in accessing the built environment, that the barriers existing in the urban environment limit the individual's independent movement on his/her own and that this hinders disabled people's social communication and causes them feel excluded. It is expected that the results of this study would contribute to development of social consciousness with respect to disabled people's equal participation to social life specifically in Ankara and to removal of the reasons excluding the disabled people from social life and would also guide the efforts in this respect, of individuals, institutions and public bodies who give shape to cities.**

**Key words:** Disability, urban accessibility, physical barriers, Ankara.

## **INTRODUCTION**

Today when about 10% of the World population (about 650 million of which 200 million children) are disabled, number of physically disabled is around 500 millions (Ozcebe, 2008; Baser, 2008). Today, the disabled people face many kinds of discrimination posing difficulties and disadvantages of different sizes as it was also the case in the past and barriers such as bad design, insufficient knowledge or discriminatory behaviours cause disabled people's exclusion from social life. When the problems of the disabled are considered, the built environment can be shown as the most outstanding symbol of disabled people's exclusion from social life (Day, 2004; Solidere, 2004; Fleck, 2003; Morris 2003; Imrie and Kumar, 1998).

While elaboration of social and economic restraints that the disabled people face generally requires psychological and sociological analyses, limitations in accessibility to public spaces and transportation systems stand out as more concrete or physical exclusions. Fawcett (2000)

considers the experiments of physically (or mentally) disabled people generally in 2 theoretical perspectives as medical and social experiments (Bromley et al., 2006): In this context, the medical (or individual) model focuses on disability at individual level considering the disabled people as "individual medical tragedy". Fawcett points out that DDA (The Disability Discrimination Act) (DDA, 1995) which defines disability as "a physical or mental impairment which has a substantial and long-term adverse effect on one's ability to carry out normal day-to-day activities" considers disability within this scope. It is seen that this perspective expresses the disabled people as a minority group on the basis of their impairment and that as a result it excludes them from the rest of the society or marginalizes them. Furthermore, the disabled people are generally considered as people requiring continuous "special" care.

By contrast, the social model of disability view society as failing, both through environmental design and through the way in which it delivers services to people with physical and mental impairments (Abberley, 1986; Gleeson, 1999; Sapey et al., 2005). Goldsmith (Bromley et al. 2006) coins the term 'architecturally disabled' to define

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those who are disadvantaged not through their own being but through the architecture and spaces that surround them, while Kitchin and Law observe, 'space is socially produced in ways that deny disabled people the same levels of access as non-disabled people. Thus, while the social model does not deny the underlying medical dimension of impairment, it emphasizes that society is the principal disabling force, marginalizing impaired people socially, economically and politically. Disability according to the social model is all things that impose restrictions upon disabled people, especially in the character of the built environment, which can be seen as oppressive (Bromley et al., 2006).

There is only one environment to be equally and independently shared by all individuals. In order to have an equal access, this environment must either be so designed that different requirements can be met at the highest level of flexibility, or it must be adapted or used in a way allowing provision of such flexibility. On the contrary, in many cities limitations with respect to disabled people's access to the physical environment have been seriously inserted in overall cultural attitudes and policies relevant to disability (Church and Marston, 2003).

### Urban design and disability

Many people can become disabled for sometime in a certain part of his/her life. A child, someone with a broken leg, parents using a baby stroller, an old person etc. face different forms of barriers in their day to day lives. There are only few people who have not faced one of such barriers in their lives. From this perspective, it is important that the built up environment be barrier-free and be designed to meet all requirements in a way that all people can use it equally. The solutions that the disabled people need with respect to using the built environment are in fact such solutions that most people living in the city need and which facilitate those people's use of such environment. Therefore, a planning which takes into consideration the majority means at the same time a planning in which people facing different barriers and limitations are taken into consideration (Uslu, 2008).

A city is the most important and the biggest physical product that mankind has produced to survive and the biggest structure directing and surrounding his life. What make up a city are not just buildings, streets, alleys and fixed service areas, but social environment which give shape to social life and to relations between individuals. The field of concern with top priority for urban design and urban planning is the researches intended for accommodation of physical spaces in the cities with a more equalist and democratic understanding. Provision of equal access to activities and services by all people with different characteristics is on top of the agenda (Gant, 1997; Frey, 1999; Imrie and Kumar 1998). Yet in many cities, people with physical or mental impairment cannot easily participate in social life because of the conditions of the

built environment (Abberley, 1986; Manley, 1996; Gleeson, 1996).

Basic purpose of urban planning is to design spaces providing comfort, safety and quality to meet the tastes, requirements and preferences of the users. Accordingly, basic guide is the individual and his/her personal characteristics and expectations. Characteristics expected from the space will vary depending on personal differences. Making the individuals feel happy from being in the same space despite their very different demands, characteristics and expectations, is the strength of urban design. Basic approach to a strong, creative and effective space design is one which gives democratic and equalist services to all. Creation of a physically barrier-free environment can begin from the following four basic areas which complete each other (Church and Marston, 2003; Solidere, 2004):

- a) Inside the buildings.
- b) Near the buildings.
- c) In the streets and roads within inhabited areas.
- d) Open spaces and recreation areas.

When we think of problems of access to the built environment, physical impairments are generally the most obvious challenge to be met (Table 1).

### Situation in Turkey

According to the results of Turkey Disability Research (DIE, 2004) made by Turkish Statistical Institute, about 10% of the population are disabled. Total incidence of disability in Turkey is 12.29% and it is 11.10% in men and 13.45% in women (Table 2). In the age group from 0 to 19 years there are 871.336 disabled people constituting 10.3% of the total disabled population. 23.9% of orthopedic-impairment, 20.4% of hearing impairment, 46.6% of tongue and speech impairment and 47.9% of mental impairment are congenital (Ozcebe, 2008).

The data reflected in the official records belong to 2000; therefore it may be said that there is a certain number of disabled people not included in these figures. When families of the disabled people are added to these numbers, it becomes evident that a substantial number of the total population is disabled or is living together with and therefore is affected from the living conditions of the disabled people.

In a society where such great numbers of disabled people live, we cannot run into disabled people in outdoor places in our day to day lives. Hiding of the disabled people by their families, their exclusion by the society and unsuitability of the urban system to their needs are the most important issues keeping them back from daily life.

In Turkey, services to people with disabilities are given by different agencies either governmental or non-governmental organizations. These services is mainly carried out by Ministry of Health, Ministry of Education, Ministry

**Table 1.** Environmental barriers which impede mobility in urban areas, in rank order (Ungar, 2008).

Order	Barriers
1	High kerbs and/or lack of dropped kerbs
2	Steep gradients or ramps
3	Uneven paving slabs
4	Rough or cobbled surfaces
5	Slippery surfaces
6	Narrow pavements
7	Street furniture poorly placed, restricting access
8	Congested pavements
9	Steps without adjacent ramp
10	Dropped kerbs on roads not adjacent to each other
11	Difficult camber on pavement
12	Deep gutters along roadside, impeding crossing
13	Busy roads
14	Lack of resting places on slopes and ramps
15	Handrails not provided on ramps
16	Insufficient designated road-crossing places
17	Drains near to dropped kerbs
18	Cars parked adjacent to dropped kerbs
19	Raised manhole covers at road-crossing points
20	Poor pathway maintenance leading to problems of fouling by dogs and litter

**Table 2.** Distribution of disabled population by impairment groups in Turkey (%) (DIE, 2004).

Impairment groups	Men	Women	Total
Orthopedic	1.48	1.02	1.25
Visual	0.70	0.50	0.60
Hearing	0.41	0.33	0.37
Tongue-speech	0.48	0.38	0.38
Mental	0.59	0.38	0.48
Other	8.05	11.33	9.70
Total	11.10	13.45	12.29
Those with multiple impairment	11.4%		

of Labor and Social Security, State Employment Agency, Ministry of Transportation, Ministry of Public Works and Housing, Prime Ministry Social Services and Child Care Institute, National Fund for the Promotion of Social Help and Support, Universities, Municipalities, foundations and approximately 300 associations affiliated with 4 Federations of different types of disability (deaf, blinds, physical and mental impairment) under the umbrella of Turkish Confederation of Disabled People. Prime Ministry Department for the Affairs of Disabled People was established in 1997 to bring coordination among these agencies and services. With Act 571, Department for the Affairs of Disabled People are cited as the mechanism for constituting cooperation and coordination between national and inter-

national institutions. Department is also responsible for assisting preparation of national policies on disability, defining problems of disabled people and making researches in order to solve these problems. To solve the experienced problems in the field of disability in Turkey and promote the quality of services for individuals with disabilities new Acts were legislated in 1997.

Act 571 describes the principles for the implementation of services for disabled people. Principles of this act are set about:

- i) Promoting equal participation of disabled people to social life, increasing awareness and sensitivity about disabled people in society, providing adequate and sufficient medical care and rehabilitation and promoting mobility and independent living abilities of disabled individuals.
- ii) Promoting accessible information, services and physical environment for the disabled.
- iii) The provision of equal educational opportunities for disabled people throughout the life span.
- iv) The provision of improvements in employment facilities for disabled individuals, in other words, rearranging work environments and redesigning equipments/instruments according to the needs of disabled people and precautions.
- v) Guarantying social security, revenue, and protecting family life and personal integrity/unity of disabled people and of ensuring their full participation in cultural, recrea-

tional, sporting and religious activities.

v) Guarantying full participation of disabled people in the decision-making processes for actions toward disabled people.

Act 572 brings some revisions in laws regarding new arrangements for people with disabilities. With these alternations laws are formulated so that it undertakes measures for exercising equal participation. For example, with revision in the Act 3194, urban development legislation, new building and construction rules are implemented by Ministry of Public Works and Housing. With this legislation, improvement of accessibility for people with disabilities and elderly people to the public places is anticipated. But these rules are only valid for the newly constructed buildings. Moreover, responsibility of supervision of the application of this rules are given to both central and local authorities. In accordance with the rules of Act 3194, Turkish Standard Institution formulated new standards for access to buildings and open spaces (UNESCO for Asia and The Pacific, 2002).

Legal and institutional arrangements in Turkey intended for the disabled people, especially those relevant to accessibility to the built environment mostly remain on paper. Especially in big cities in Turkey, individuals try to and are forced to live under difficult conditions due to the chaos caused by dense population, uncontrolled urbanization, environmental pollution, incorrect use of resources and social contamination. The biggest part of these hard conditions is for the share of the disabled population. In Turkey, the disabled people face many physical barriers in urban open spaces and there are no special measures intended for the disabled in the urban area where even people with no impairment face many difficulties.

## METHOD

This study has been designed as a survey research where qualitative and quantitative data are combined. Qualitative data have been obtained from written documents, interviews with concerned people and institutions, and observations intended for accessibility for the disabled people to the built environment. Quantitative data have been compiled by means of questionnaires intended for physically and visually impaired people. Theoretical population has been defined as physically and visually impaired people living in Ankara, the capital of Turkey. In determining the number of sample to be surveyed "Disabled population by province, type of disability and gender" (2000) statistics taken from the last general census have been used. Population data of these statistics relevant to headings of "physically impaired", "visually impaired", "people with multiple impairment", "others" and "unknown" people living in Ankara province have been compiled. As target population of the study people with walking-impairment, those dependant on wheelchairs and visually impaired people as well as people with multiple impairment who suffer most in accessing the built environment in Ankara have been taken into consideration. However, no record relevant to rates of people with walking impairment and people dependent on wheelchairs has been found under the heading of "physically impaired" in official censuses and statistics intended for disabled people nor in other relevant statistics. Moreover, it is not clear to which type of disabled population the data under the headings of "other",

"unknown" and "people with multiple impairment" taking place in the "Disabled population by province, type of disability and gender" statistics (TUIK, 2008) belong. Hence, 382 physically and visually impaired people living in Ankara have been surveyed using random sampling technique with 95% reliability and 0.05 error and 238 questionnaires belonging to walking and visually impaired people and wheelchair dependents have been evaluated under the study.

Data compilation intended for the present research began in May 2007 and was completed in July 2007. The questions have been expressed in a simple and clear manner so that the people in the sample could understand. The questionnaire comprises 40 multiple choice questions. The questions have been prepared in 5 interrelated categories: General personal information about the disabled person, frequency and purpose of using the built environment, accessibility of built environment, basic points affecting the accessibility and priorities in making the built environment accessible. Findings have been organized, analysed and commented upon on the basis of these categories. The survey has been made between May and July 2007 using face-to-face question and answer method in open and closed built environments heavily used in Ankara. In evaluation of the survey data SPSS software package has been used.

## FINDINGS AND EVALUATIONS

### General demographics

Ankara is the capital city of Turkey and is located into central Anatolia. As of 2008 the city has a population of 3,901,201 (TUIK, 2008). Urbanization began to get out of control in the 1950s because of migration to the city and depending on migration, unprecedented rise of population caused inadequacy of infrastructure and rapid deterioration of urban environment (Levent, 1999; Rau, 1990).

The built environment of Ankara like in many cities prevents disabled from participating to the city life; the elevations, the height of the pavements, under and upper pedestrian passages inevitably lead the disabled unable to use the urban spaces and become enslaved in their homes. When the case is considered on social contexts; shops, cinemas, theaters and other public buildings, it appears that spatial arrangements for disabled are almost neglected. The fact that there are no vehicles enabling the transport and access of disabled are another defect. Also, in the subway, as the arrangements for disabled could not be performed, they can not utilize subway stations. In a car-centric transportation system upper pedestrian road crossing passages, traffic lights, barriers and fences create significant obstruction in the central business district (CBD) of Ankara (Varol et al., 2006).

With a view to resolve the problem of information and data insufficiency about the disabled people "2002 Turkey Disability Research" has been made with collaboration of Prime Ministry State Institute of Statistics and Prime Ministry Administration of Disabled People. According to the results of this research the ratio of disabled population in Turkey to total population is 12.29%. The rate of orthopedic, visual, hearing, tongue and speech and mental impairment is 2.58% (about 1.8 millions) while the rate of people with chronic diseases is 9.70% (about 6.6 million). Investigation of the prevalence of impairment

**Table 3.** Distribution of disabled people living in Ankara and their ratios to general population of Turkey (TUIK, 2008).

Impairment groups	Men	Women	Total	Ratio to general population of Turkey %
Physical	14721	10738	25459	5,39
Visual	4713	2698	7411	4,70
Hearing	3094	2157	5251	5,90
Tongue and speech	1479	780	2259	4,07
Mental	4845	3592	8437	5,25
Other	3370	2621	5991	4,86
Multiple	2856	2306	5162	5,58
Unknown	2636	2104	4740	4,86
Total	37714	26996	64710	5,24

**Table 4.** Distribution of disabled by gender and type of impairment.

Gender	Type of impairment						Total
	Walking-impaired	Wheelchair dependents	Visually impaired	Blind	Paralytic	Wheelchair r D. + Blind	
Men	50%	10%	24%	17%	2%	0	103%
	21.0	4.2	10.1	7.1	0.8		43.3
Women	75%	18%	9.2%	14%	2%	4%	135%
	31.5	7.6	22	5.9	0.8	1.7	56.7
Total	125%	28%	19,3%	31%	4%	4%	238%
	52.5	11.8	46	13,0	1,7	1.7	100

types in total population shows that orthopedic impairment has the highest and hearing impairment has the lowest rate (DIE, 2004).

According to 2000 general census "Disabled population by province, type of disability and gender", there are 64.710 disabled people in Ankara from all impairment groups. This figure is 5.24% of total disabled population in Turkey. 37.714 of the disabled people living in Ankara are men and 26.996 are women. Distribution of the disabled people by gender, impairment groups and ratio to general population of Turkey are given in Table 3.

As is the case in many Turkish cities, the present situation of the disabled people in Ankara can be summarized as "social disaster". Results of Turkey Disablement Research Secondary Analysis (2002) show that the educational statuses of the disabled people are very low in comparison to the healthy people and poverty is widespread. Many of them are isolated from the society and a great many of them have been found to have no access to even the most basic health services (Tufan and Arun, 2006).

### Evaluation of the survey

43.3% of the 238 disabled people whose questionnaires

were evaluated were men and 56.7% women. 50.4% of the respondents are in the age group of 25 – 44 (Table 4). 4.6% of the respondents are illiterate and the most crowded group is the group of high school graduates (31.9%). Rate of university and college graduates has been found to be 15.9%.

52.5% of the disabled people whose questionnaires were evaluated were walking-impaired, 19.3% visually-impaired, 13% blind and 11.8% wheelchair dependents. Other than these, 2 persons (0.8%) among the walking and hearing impaired people and 2 paralytic persons (0.8%) have been evaluated in the walking-impaired group. Likewise, 4 visually-impaired people who were at the same time dependent on wheelchairs (1.7%) have been evaluated in the group of wheelchair dependents (Table 4). When the respondents were asked whether or not they needed help to go out from home, 42% said they did not need help; 39.1% said they needed some help; 12.6% said they needed considerable amount of help and 6.3% said they needed continuous help (Table 5).

Disabled people responding to the questionnaires were in 37 different occupational groups. Among these groups were professions not based on any schooling (cook, painter, secretary, peddler, tailor etc.) along with those requiring higher education (physician, pharmacist, nurse,

**Table 5.** Help requirements of the disabled by gender.

Gender	Requirement of help for movement				Total
	I don't need help	I need some help	I need considerable amount of help	I need continuous help	
Men	51 21.4%	40 16.8%	9 3.8%	3 1.3%	103 43.3%
Women	49 20.6%	53 22.3%	21 8.8%	12 5.0%	135 56.7%
Total	100 42.0%	93 39.1%	30 12.6%	15 6.3%	238 100.0%

**Table 6.** Frequency of usage of the built environment by the disabled.

How often do you get out of home?	Impairment (%)									General
	Visual			Walking			Wheelchair dep.			
	M	W	T	M	W	T	M	W	T	
Every day	45.5	22.1	67.5	35.4	33.1	68.5	15.6	31.3	46.9	65.5
A few times a week	6.5	14.3	20.8	3.9	20.5	24.4	12.5	28.1	40.6	25.9
Once a week	1.3	7.8	9.1	-	1.6	1.6	3.1	-	3.1	4.2
A few times a month	-	-	-	-	0.8	0.8	-	3.1	3.1	0.8
Rarely	-	2.6	2.6	-	4.7	4.7	0.8	6.3	6.3	4.2

lawyer, engineer, teacher, social worker etc.). Most common occupational groups were public servants (16.8%), house wives (7.6%), clerks (5.5%), peddlers (4.2%) and teachers (2.9%). 15.1% responded that they were students 6.7% were pensioners and 22.3% had no occupation. It was found that 37.9% had no job and 23.9% had full time jobs at public institutions.

### Pedestrian movement

In this part of the survey, the disabled people were asked questions about the frequency (Table 6) and purposes of getting out from home (Table 7). 17.2% of the respondents specified that they were getting out to go to school or to work; 66% said that they had more than one purpose and 9.7% said that they were getting out only for their bare necessities. Investigation of their frequency of getting out showed that 67.5% of the visually-impaired, 68.5% of the walking-impaired and 46.9% of the wheelchair dependents use the built environment every day.

Further on, the disabled people were asked questions about the existing character of the pedestrian movement in the built environment. In this part, the aim was to find out the difficulties they face during their movement as pedestrians and to this end 9 questions were posed on the circulation of pedestrians (Table 8). According to the results of the survey, 89.31% of the pedestrians share the view that the sidewalks pose many difficulties and barriers with respect to accessibility for the disabled people

to the built environment. Table 8 shows that wheelchair dependents mostly complain from the height of the sidewalks (100%); the visually impaired people from the cars, omnibuses etc. parked on the sidewalks (97.40%) and the walking impaired people from the sudden changes of height and/or falls on the sidewalks (96.06%). The common view of all impairment groups (94.43%) is that the presence of cars, omnibuses etc. parked on the sidewalks posing difficulties and danger is the factor hindering the accessibility most.

### Built environment

In this part of the survey, the disabled people were asked 6 questions about accessibility to the open and closed built environments that they use the most in their day-to-day lives (Table 9). The purpose of this part is to investigate the experiences of the disabled people with respect to accessibility to various built environments. According to the findings, 86.09% of the disabled people are of the opinion that there are no solutions intended for usage of the open and closed built environments by the disabled. The results of the survey show that walking-impaired (89.63%) and hearing-impaired (89.06%) people constitute the biggest group facing the most problems. 92.27% of the disabled people think that in spaces such as restaurants, cafeterias etc. there are no solutions designed for usage of these spaces by the disabled, while on the other hand 89.85% of them share the view that at

**Table 7.** Purposes of the disabled for using the built environment.

For which purpose/s do you get out of home?	Impairment (%)									General
	Visual			Walking			Wheelchair dep.			
	M	W	T	M	W	T	M	W	T	
0) To go to school / to work	18.2	3.9	22.1	94	7.1	16.5	3.1	6.3	9.4	17.2
1) To meet bare necessities	2.6	7.8	10.4	-	9.4	9.4	-	9.4	9.4	9.7
2) For social activities such as shopping, going to movies, theater etc.	3.9	-	39	0.8	1.6	2.4	-	-	-	2.5
3) Promenade in open air, going to parks and other recreational areas etc.	1.3	1.3	2.6	-	2.4	2.4	-	6.3	6.3	2.9
4) Other	-	-	-	-	2.4	2.4	-	-	-	1.7
0+1	3.9	-	3.9	1.6	4.7	6.3	6.3	15.6	21.9	7.6
0+2	1.3	-	1.3	4.7	6.3	11.0	-	3.1	3.1	6.7
0+3	3.9	14.3	18.2	6.3	1.6	7.9	6.3	-	6.3	10.9
1+2	-	2.6	2.6	-	-	-	-	-	-	0.8
1+3	-	7.8	7.8	1.6	7.9	9.4	9.4	9.4	18.8	10.1
2+3	-	-	-	-	0.8	0.8	-	-	-	0.4
0+1+2	1.3	-	1.3	0.8	1.6	2.4	3.1	3.1	6.3	2.5
0+1+3	5.2	2.6	7.8	1.6	0.8	2.4	-	9.4	9.4	5.0
0+2+3	2.6	1.3	3.9	1.6	7.9	9.4	3.1	6.3	9.4	7.6
0+3+4	-	-	-	0.8	-	0.8	-	-	-	0.4
1+2+3	-	1.3	1.3	1.6	-	1.6	-	-	-	1.3
0+1+2+3	9.1	3.9	13.0	7.9	4.7	12.6	-	-	-	10.9
All	-	-	-	0.8	1.6	2.4	-	-	-	1.3

that at public institutions, banks, hospitals etc. there are no solutions designed for usage of these spaces by the disabled people.

### Participation to social life

Creation of positive changes in the living conditions of the disabled in cities is not only related to provision of solutions and services intended for their accessibility to various built environments, a society sensitive to needs and expectations of the disabled is also necessary. In social policies intended for the disabled, emphasizing strategies to avoid the healthy and disabled people from turning into people living in different areas of the same society is one of the most basic conditions for participation of the disabled to social life. In this part of the survey, opinions of the disabled people sharing the same built environments with the healthy people with respect to participation to social life have been sought. For this purpose, people with different impairments have been firstly asked to tell their opinions about the consciousness and understanding of the society towards themselves (Table 10). To this question, 78.5% of respondents from all impairment groups have given the following response: "Consciousness and understanding in the society towards disabled people have generally not developed". Wheelchair dependents, with 90.6% have been the impairment

group sharing the highest rate of support to this view. 41.5% of the visually-impaired, 58.4% of the walking-impaired and 21.8% of the wheelchair dependents have said that they could frequently come together with other people from the society in spaces open to public. According to the findings of the survey, 96.9% of the wheelchair dependents think that there isn't enough sensitivity with respect to participation of the disabled people to social activities while this rate is 74.4% in visually impaired and 73.3% in walking-impaired people.

According to the results of the survey, all (100%) of the wheelchair dependents, 85.8% of visually impaired and 90.6% of walking-impaired people think that there are not enough usage and spaces intended for leisure time activities where the disabled people can meet the other segments of the society.

Lastly in this part of the survey, the disabled people were asked whether or not they felt excluded from the other segments of the society. 40.3% of the visually-impaired, 32.3% of the walking-impaired and 71.9% of the wheelchair dependents answered that they felt themselves excluded from the society they live in.

### Priorities with respect to accessibility to the built environment and participation to social life

In the last part of the survey, priorities of the disabled

**Table 8.** Opinions of the disabled about pedestrian movement.

Pedestrian movement	Score	Impairment (%)									General	
		Visual			Walking			Wheelchair Dep.				
		M	W	T	M	W	T	M	W	T		
Sidewalk heights are generally suitable for usage by the disabled	*1	2.6	-	2.6	-	-	-	-	-	-	-	0.8
	2	14.3	1.3	15.6	1.6	3.9	5.5	-	-	-	-	8.4
	3	-	1.3	1.3	-	-	-	-	-	-	-	0.8
	4	10.4	31.2	41.6	18.1	33.1	51.2	6.3	31.3	37.5	45.8	
	5	26.0	13.0	39	19.7	23.6	43.3	25.0	37.5	62.5	44.1	
Materials used to pave sidewalks are generally suitable for usage by the disabled	1	2.6	-	2.6	-	-	-	-	-	-	-	0.8
	2	9.1	-	9.1	-	1.6	1.6	-	3.1	3.1	4.2	
	3	1.3	1.3	2.6	0.8	2.4	3.1	-	12.5	12.5	5.0	
	4	14.3	23.4	37.7	18.1	28.3	46.5	6.3	21.9	28.1	40.8	
	5	26.0	22.1	48.1	20.5	28.3	48.8	25.0	31.3	56.3	49.2	
Sidewalks have generally been designed close enough to facilitate usage by the disabled	1	2.6	-	2.6	-	-	-	-	3.1	3.1	1.3	
	2	3.9	1.3	5.2	0.8	0.8	1.6	-	3.1	3.1	3.8	
	3	10.4	6.5	16.9	4.7	1.6	6.3	6.3	6.3	12.5	10.5	
	4	13.0	31.2	44.2	16.5	26.0	42.5	3.1	31.3	34.4	41.6	
	5	23.4	7.8	31.2	17.3	32.3	49.6	21.9	25.0	46.9	42.9	
Sidewalk heights have generally been lowered to facilitate usage by the disabled	1	2.6	-	2.6	-	-	-	-	3.1	3.1	1.3	
	2	14.3	3.9	18.2	0.8	2.4	3.1	-	-	-	8.4	
	3	-	2.6	2.6	2.4	0.8	3.1	-	-	-	2.5	
	4	20.8	35.1	55.8	15.7	22.8	38.6	3.1	15.6	18.8	41.2	
	5	15.6	5.2	20.8	19.7	34.6	54.3	28.1	50.0	78.1	46.2	
Changes of height / falls posing danger and difficulties of usage by the disabled people are generally not seen on the sidewalk	1	2.6	-	2.6	-	-	-	-	6.3	6.3	1.7	
	2	6.5	-	6.5	1.6	1.6	3.1	-	-	-	3.8	
	3	-	2.6	2.6	-	-	-	-	-	-	0.8	
	4	23.4	31.2	54.5	15.7	27.6	43.3	3.1	9.4	12.5	43.3	
	5	20.8	13.0	33.8	22.0	30.7	52.8	28.1	53.1	81.3	50.0	
Walls, steps, trees, waste baskets, street lights, etc. posing danger and difficulties of usage by the disabled are generally not seen on the sidewalks	1	2.6	-	2.6	0.8	1.6	2.4	-	3.1	3.1	2.5	
	2	6.5	1.3	7.8	1.6	3.9	5.5	-	-	-	5.5	
	3	-	-	-	0.8	1.6	2.4	-	-	-	1.3	
	4	14.3	31.2	45.5	15.0	22.8	37.8	9.4	15.6	25.0	39.1	
	5	29.9	14.3	44.2	20.5	30.7	51.2	21.9	50.0	71.9	51.3	
Motorcars, omnibuses etc. posing danger and difficulties of usage by the disabled are generally not seen on the sidewalks	1	-	-	-	0.8	-	0.8	-	3.1	3.1	0.8	
	2	1.3	-	1.3	-	4.7	4.7	-	-	-	2.9	
	3	-	1.3	1.3	0.8	1.6	2.4	-	3.1	3.1	2.1	
	4	14.3	23.4	37.7	12.6	18.9	31.5	9.4	12.5	21.9	32.8	
	5	37.7	22.1	59.7	25.2	35.4	60.6	21.9	50.0	71.9	61.3	
Sidewalks and pedestrian crossings have been equipped with enough signals intended for the disabled	1	2.6	-	2.6	0.8	0.8	1.6	-	3.1	3.1	2.1	
	2	1.3	-	1.3	-	2.4	2.4	-	-	-	2.1	
	3	3.9	15.6	19.5	1.6	3.1	4.7	3.1	9.4	12.5	10.5	
	4	13.0	7.8	20.8	10.2	23.6	33.9	6.3	9.4	15.6	26.9	
	5	32.5	23.4	55.8	26.8	30.7	57.5	21.9	46.9	68.8	58.4	
Necessary measures intended for the disabled have been taken in underground and on overhead crossings	1	2.6	-	2.6	-	-	-	-	3.1	3.1	1.3	
	2	6.5	-	6.5	1.6	1.6	3.1	-	-	-	3.8	
	3	5.2	2.6	7.8	1.6	6.3	7.9	3.1	12.5	15.6	8.8	
	4	22.1	33.8	55.8	17.3	29.1	46.5	12.5	31.3	43.8	49.2	
	5	16.9	10.4	27.3	18.9	23.6	42.5	15.6	21.9	37.5	37.0	

\*1-I Absolutely Agree, 2-I Agree, 3- I Have No Idea,, 4-I Don't Agree, 5-I Absolutely Don't Agree.



**Table 9.** Opinions of the disabled about accessibility to open and closed built environments.

Built environments	Score	Impairment (%)									General
		Visual			Walking			Wheelchair Dep.			
		M	W	T	M	W	T	M	W	T	
Necessary measures intended for usage by the disabled have generally been designed at shops, shopping centers, arcades etc.	*1	2.6	-	2.6	-	-	-	-	3.1	3.1	1.3
	2	6.5	1.3	7.8	3.1	2.4	5.5	-	-	-	5.9
	3	1.3	-	1.3	-	1.6	1.6	-	6.3	6.3	2.1
	4	20.8	27.3	48.1	22.0	49.6	71.7	12.5	21.9	34.4	58.4
	5	22.1	18.2	40.3	14.2	7.1	21.3	18.8	37.5	56.3	31.9
Necessary measures intended for usage by the disabled have generally been designed at public institutions, banks, hospitals etc.	1	2.6	-	2.6	-	-	-	-	-	-	0.8
	2	9.1	1.3	10.4	0.8	2.4	3.1	-	-	-	5.0
	3	2.6	3.9	6.5	1.6	-	1.6	-	6.3	6.3	3.8
	4	15.6	20.8	36.4	22.8	45.7	68.5	18.8	25.0	43.8	54.6
	5	23.4	20.8	44.2	14.2	12.6	26.8	12.5	37.5	50.0	35.3
Necessary measures intended for usage by the disabled have generally been designed at school and university buildings and campuses	1	2.6	-	2.6	-	-	-	-	-	-	0.8
	2	11.7	1.3	13	2.4	2.4	4.7	-	3.1	3.1	7.1
	3	7.8	9.1	16.9	3.1	7.9	11.0	-	6.3	6.3	12.2
	4	9.1	20.8	29.9	21.3	38.6	59.8	12.5	18.8	31.3	46.2
	5	22.1	15.6	37.7	12.6	11.8	24.4	18.8	40.6	59.4	33.2
Necessary measures intended for usage by the disabled have generally been designed at movies, theaters, concert halls etc.	1	-	-	-	-	-	-	-	-	-	-
	2	7.8	3.9	11.7	1.6	1.6	3.1	-	-	-	5.5
	3	13.0	10.4	23.4	4.7	9.4	14.2	9.4	15.6	25.0	18.5
	4	10.4	11.7	22.1	22.8	38.6	61.4	9.4	28.1	37.5	45.4
	5	22.1	20.8	42.9	10.2	11.0	21.3	12.5	25.0	37.5	30.7
Necessary measures intended for usage by the disabled have generally been designed at restaurants, cafeterias etc.	1	2.6	-	2.6	-	-	-	-	-	-	0.8
	2	2.6	3.9	6.5	0.8	0.8	1.6	-	-	-	2.9
	3	7.8	-	7.8	0.8	3.9	4.7	-	-	-	5.0
	4	18.2	23.4	41.6	25.2	47.2	72.4	15.6	40.6	56.3	60.1
	5	22.1	19.5	41.6	12.6	8.7	21.3	15.6	28.1	43.8	31.1
Necessary measures intended for usage by the disabled have generally been designed at recreational spaces such as parks, picnic areas etc.	1	2.6	-	2.6	-	-	-	-	-	-	0.8
	2	3.9	-	3.9	3.9	2.4	6.3	-	3.1	3.1	5.5
	3	3.9	-	3.9	3.1	1.6	4.7	3.1	9.4	12.5	5.5
	4	20.8	29.9	50.6	21.3	48.8	70.1	12.5	28.1	40.6	59.2
	5	22.1	16.9	39.0	11.0	7.9	18.9	15.6	28.1	43.8	29.0

\*1- Absolutely Agree, 2-I Agree, 3- I Have No Idea,, 4-I Don't Agree, 5-I Absolutely Don't Agree.

people with respect to increased accessibility to the built environment and more participation to social life have been sought. For this purpose, firstly their priorities relevant to the problems disturbing them while using the spaces for pedestrians have been asked (Table 11). For 86.1% of all impairment groups "barriers such as steps, walls, fences, trees, waste baskets, banks, barriers, street lights etc. which impede movement on the sidewalks" and "vehicles parked on the sidewalks" stand out as problems with priority causing difficulties for the disabled people in pedestrian spaces. Non-existence of measures intended for disabled people in pedestrian crossings (79%), height of the sidewalks (74.8%) and sudden rises and falls on the sidewalks (71.8%) have

been found as other barriers.

Finally, the disabled people were asked to specify 3 issues to be resolved with priority so that they could have more access to the built environment and participate more to social life (Table 12). According to the findings of the survey, common issue expected by all impairment groups to be resolved with priority has been found to be "bringing suitable solutions to usage of sidewalks and pedestrian crossings by the disabled" (60.9%) (Table 13). This issue stands out as the issue of first priority agreed on most with 75.3% in visually-impaired and 52.8% in walking-impaired people. 59.4% of wheelchair dependents agree on this opinion while the issue of first priority agreed on most (68.8%) for this impairment group is

**Table 10.** Participation of the disabled to social life.

Participation of the disabled to social life	Score	Impairment (%)									General	
		Visual			Walking			Wheelchair Dep.				
		M	W	T	M	W	T	M	W	T		
	*1	-	-	-	-	-	-	-	-	-	-	-
Consciousness and understanding in the society towards disabled have generally developed	2	6.5	2.6	9.1	11	16.5	27.6	3.1	6.3	9.4	19.3	
	3	2.6	-	2.6	0.8	-	0.8	-	-	-	1.3	
	4	18.2	27.3	45.5	15.7	32.3	48.0	3.1	12.5	15.6	42.4	
	5	26.0	16.9	42.9	10.2	11.8	22.0	25.0	50.0	75.0	36.1	
	1	9.1	1.3	10.4	3.1	4.7	7.9	-	3.1	3.1	8.0	
I can come together with other segments of the society in areas and spaces open to public	2	20.8	7.8	28.6	25.2	24.4	49.6	3.1	15.6	18.8	38.7	
	3	2.6	-	2.6	-	-	-	-	-	-	0.8	
	4	11.7	29.9	41.6	9.4	24.4	33.9	12.5	21.9	34.4	36.1	
	5	9.1	7.8	16.9	1.6	7.1	8.7	15.6	28.1	43.8	16.4	
	1	-	1.3	1.3	3.1	3.1	6.3	-	-	-	3.8	
There are necessary sensitivity and efforts for participation of the disabled to social activities	2	14.3	5.2	19.5	8.7	9.4	18.1	3.1	-	3.1	16.4	
	3	2.6	2.6	5.2	0.8	1.6	2.4	-	-	-	2.9	
	4	13.0	19.5	32.8	17.3	35.4	52.8	3.1	28.1	31.3	43.3	
	5	23.4	18.2	41.6	9.4	11.0	20.5	25.0	40.6	65.6	33.6	
	1	2.6	1.3	3.9	-	-	-	-	-	-	1.3	
There are enough usage and spaces intended for leisure activities where the disabled can meet with other segments of the society	2	9.1	1.3	10.4	2.4	5.5	7.9	-	-	-	8.0	
	3	-	-	-	-	1.6	1.6	-	-	-	0.8	
	4	18.2	20.8	39.0	20.5	38.6	59.1	6.3	25.0	31.3	48.3	
	5	23.4	23.4	46.8	16.5	15.0	31.5	25.0	43.8	68.8	41.6	
	1	7.8	2.6	10.4	10.2	6.3	16.5	-	3.1	3.1	12.6	
As a disabled I don't feel excluded from the other segments of the society	2	29.9	15.6	45.5	21.3	29.1	50.4	12.5	9.4	21.9	45.0	
	3	-	-	-	-	-	-	-	3.1	3.1	2.5	
	4	6.5	9.1	15.6	7.1	16.5	23.6	12.5	31.3	43.8	23.5	
	5	9.1	15.6	24.7	-	8.7	8.7	6.3	21.9	28.1	16.4	

\*1- Absolutely agree, 2- I agree, 3- I have no idea,, 4- I don't agree, 5- I absolutely don't agree.

“bringing solutions intended for usage of the means of mass transport by the disabled”. The issue of “bringing solutions to usage of the closed entertainment spaces and recreational areas by the disabled people” has been found to be the issue without priority agreed on most (69.7%) in all impairment groups.

According to the findings of the survey, priorities of wheelchair dependents and visually-impaired people have preferences and ratios closer to each other, while walking-impaired people show differences in this respect. For example, “efforts intended to increase the consciousness and sensitivity towards the disabled people” is considered as the issue of first priority agreed on most with 51.9% by visually-impaired people and 59.4% by wheelchair dependents, while it was considered among issues without priority by walking-impaired people with 47.2%. Likewise, “bringing solutions intended for usage of the stops and stations of means of mass transport by the dis-

abled people” was preferred as the issue of first priority by the visually-impaired people with 55.8% and by the wheelchair dependents with 68.8%, while it was agreed on by 39.4% of the walking-impaired.

Another conspicuous issue is that visually-impaired men and women have similar rates of preferences while preferences show great differences by gender among walking-impaired and wheelchair dependents. For example, 40.3% of the men and 35.1% of the women with visual impairment share the same opinion as to the choice of “bringing solutions intended for usage of sidewalks and pedestrian crossings by the disabled people”, while 17.3% of men and 35.4% of women with walking impairment and 12.5% of men and 46.9% of women wheelchair dependents agree on the same opinion.

When all impairment groups are considered, the issue with first priority chosen by women is “bringing solutions intended for usage of sidewalks and pedestrian crossings

**Table 11.** Opinions of the disabled about problems causing difficulties in usage of the pedestrian spaces

Problems causing difficulties in usage of the pedestrian spaces	Score	Impairment (%)									General
		Visual			Walking			Wheelchair Dep.			
		M	W	T	M	W	T	M	W	T	
Height of the sidewalks	*1	32.5	37.7	70.1	27.6	49.6	77.2	25.0	56.3	81.3	74.8
	2	20.8	9.1	29.9	11.8	11.0	22.8	6.3	12.5	18.8	25.2
Lack of measures at pedestrian crossings intended for the disabled	1	42.9	35.1	77.9	31.5	48.8	80.3	25.0	56.3	81.3	79.0
	2	10.4	11.7	22.1	7.9	11.8	19.7	6.3	12.5	18.8	21.0
Sudden falls and rises on the sidewalks	1	37.7	39.0	76.6	21.3	45.7	66.9	25.0	59.4	84.4	71.8
	2	15.6	7.8	23.4	18.1	15.0	33.1	6.3	9.4	15.6	28.2
Barriers such as steps, walls, fences, trees, waste baskets, banks, street lights etc.	1	49.4	42.9	92.2	29.9	52.8	82.7	31.3	56.3	87.5	86.1
	2	3.9	3.9	7.8	9.4	7.9	17.3	-	12.5	12.5	13.9
Motorcars parked on the sidewalks	1	49.4	37.7	87.0	27.6	55.9	83.5	31.3	62.5	93.8	86.1
	2	3.9	9.1	13.0	11.8	4.7	16.5	-	6.3	6.3	13.9
Other											
		1.3	2.6	3.9	0.8		0.8				1.2
						0.8	0.8				0.4
					0.8	0.8	1.6				0.8
						0.8	0.8				0.4
					0.8		0.8				0.4
								-	3.1	3.1	3.1

\*1-Yes, it is a problem, 2-No, it is not a problem.

by the disabled people”

## Conclusions

It is widely assumed that most disabilities impose considerable restrictions, such as lack of mobility, limitations in finding and holding employment, isolation and difficulty in integrating with able bodied people. People with disabilities do have to face all of these restrictions and others, but such restrictions are not imposed by their disabilities. They are imposed by a society which discriminates against people with disabilities, creating restrictions by denying people the means to exercise their capabilities (Sutherland, 1981).

A built environment not designed for all, can be full of disadvantages for another group. Especially, when assistance requirements of the disabled people and their individual faculties and capability of attention are not taken into consideration, the built environment becomes a series of spaces not suiting to the needs of, and not providing services to the individual (Seeland and Nicole, 2006). In organizing the urban spaces, “the human” must be taken as the dominant factor. However, arrangements made in Ankara in recent years encouraging speed and giving priority to the motorcars which are rapidly increasing in number, are the most important approaches

filling the city with barriers. Practices giving the possibility of a non-stop movement with a fixed speed to the motorcars within the city, lack of walking and pedestrian roads and underground and overhead crossings create suitable environments in the city not for the humans, but for motorcars (Uslu, 2008).

The agenda of urban design made with the aim of creating livable spaces in contemporary cities is the priority of creating social and physical environments freed from barriers and difficulties increasing independent movement possibilities of especially women, children, old and disabled people who are considered as “sensitive class” while designing. In fact, requirements of the people defined as disabled are not so much different from the requirements of the majority or the “standard user”. Findings of this study show that the physical environment in Ankara contains many difficulties and barriers with respect to the usage of the built environment by the disabled. Majority of the groups of the disabled people surveyed have expressed that they use such built environments every day in spite of the difficulties these spaces pose for the disabled people in terms of accessibility and usage.

Participation of the disabled people to social life depends on their ability to lead an independent life. Number of disabled people “who can help themselves” will increase to the extent of leading an independent life can be achieved. Provision of the possibilities of leading a life

**Table 12.** Distribution of priorities by impairment, gender and rank of priority with respect to accessibility for the disabled to the built environment.

Priorities with respect to accessibility to the built environment	Score	Impairment (%)									General
		Visual			Walking			Wheelchair Dep.			
		M	W	T	M	W	T	M	W	T	
Bringing solutions intended for usage of sidewalks and pedestrian crossings by the disabled	1st priority	40.3	35.1	75.3	17.3	35.4	52.8	12.5	46.9	59.4	60.9
	2nd priority	5.2	-	5.2	3.9	5.5	9.4	6.3	3.1	9.4	8.0
	3rd priority	2.6	6.5	9.1	4.7	3.1	7.9	-	3.1	3.1	7.6
	Not with priority	5.2	5.2	10.4	13.4	16.5	29.9	12.5	15.6	28.1	23.5
Bringing solutions intended for usage of open and green spaces by the disabled	1st priority	15.6	15.6	31.2	5.5	17.3	22.8	-	18.8	18.8	25.2
	2nd priority	2.6	3.9	6.5	3.9	3.1	7.1	-	12.5	12.5	7.6
	3rd priority	-	-	-	3.9	5.5	9.4	6.3	3.1	9.4	6.3
	Not with priority	35.1	27.3	62.3	26.0	34.6	60.6	25.0	34.4	59.4	60.9
Bringing solutions intended for usage of the buildings of public institutions by the disabled	1st priority	27.3	10.4	37.7	15.0	18.1	33.1	9.4	25.0	34.4	34.9
	2nd priority	2.6	2.6	5.2	1.6	5.5	7.1	3.1	3.1	6.3	6.3
	3rd priority	5.2	-	5.2	3.1	4.7	7.9	-	-	-	5.9
	Not with priority	18.2	33.8	51.9	19.7	32.3	52.0	18.8	40.6	59.4	52.9
Bringing solutions intended for usage of buildings of educational institutions and campuses by the disabled	1st priority	26.0	23.4	49.4	12.6	11.0	23.6	25.0	28.1	53.1	36.1
	2nd priority	1.3	-	1.3	4.7	7.9	12.6	3.1	3.1	6.3	8.0
	3rd priority	1.3	-	1.3	3.1	1.6	4.7	--	6.3	6.3	3.8
	Not with priority	24.7	23.4	48.1	18.9	40.2	59.1	3.1	31.3	34.4	52.1
Bringing solutions intended for usage of closed entertainment and recreation spaces by the disabled	1st priority	11.7	13.0	24.7	2.4	6.3	8.7	3.1	9.4	12.5	14.7
	2nd priority	1.3	1.3	2.6	3.9	3.9	7.9	3.1	3.1	6.3	5.9
	3rd priority	5.2	3.9	9.1	3.1	7.9	11.0	3.1	3.1	6.3	9.7
	Not with priority	35.1	28.6	63.6	29.9	42.5	72.4	21.9	53.1	75.0	69.7
Bringing solutions intended for usage of shopping centers, market places, arcades etc. by the disabled	1st priority	15.6	13.0	28.6	3.1	14.2	17.3	-	6.3	6.3	19.7
	2nd priority	6.5	5.2	11.7	11.0	6.3	17.3	3.1	9.4	12.5	14.7
	3rd priority	3.9	1.3	5.2	4.7	3.9	8.7	-	3.1	3.1	6.7
	Not with priority	27.3	27.3	54.5	20.5	36.2	56.7	28.1	50.0	78.1	58.8
Bringing solutions intended for usage of the stops and stations of means of mass transport by the disabled	1st priority	16.9	15.6	32.5	11.8	18.1	29.9	6.3	18.8	25.0	30.3
	2nd priority	5.2	2.6	7.8	3.1	3.1	6.3	-	3.1	3.1	6.3
	3rd priority	1.3	-	1.3	2.4	1.6	3.9	3.1	3.1	6.3	3.4
	Not with priority	29.9	28.6	58.4	22.0	37.8	59.8	21.9	43.8	65.6	60.1
Bringing solutions intended for usage of means of mass transport by the disabled	1st priority	24.7	31.2	55.8	15.0	24.4	39.4	21.9	46.9	68.8	48.7
	2nd priority	6.5	1.3	7.8	7.1	15.0	22.0	9.4	3.1	12.5	16.0
	3rd priority	1.3	-	1.3	0.8	2.4	3.1	-	-	-	2.1
	Not with priority	20.8	14.3	35.1	16.5	18.9	35.4	-	18.8	18.8	33.2
Creating spaces, areas and activities where the disabled can meet with other segments of the society	1st priority	20.8	15.6	36.4	12.6	32.3	44.9	3.1	25.0	28.1	39.9
	2nd priority	1.3	2.6	3.9	7.9	3.9	11.8	3.1	-	3.1	8.0
	3rd priority	1.3	7.8	9.1	-	4.7	4.7	-	-	-	5.5
	Not with priority	29.9	20.8	50.6	18.9	19.7	38.6	25.0	43.8	68.8	46.6
Efforts intended to increase the consciousness and sensitivity towards the disabled	1st priority	27.3	24.7	51.9	12.6	25.2	37.8	21.9	37.5	59.4	45.4
	2nd priority	1.3	6.5	7.8	7.1	4.7	11.8	3.1	3.1	6.3	9.7
	3rd priority	5.2	1.3	6.5	1.6	1.6	3.1	3.1	3.1	6.3	4.6
	Not with priority	19.5	14.3	33.8	18.1	29.1	47.2	3.1	25.0	28.1	40.3
Taking measures intended for safety of the disabled in urban traffic	1 <sup>st</sup> priority	14.3	15.6	29.9	18.9	23.6	42.5	3.1	31.3	34.4	37.8
	2 <sup>nd</sup> priority	6.5	5.2	11.7	3.1	0.8	3.9	-	-	-	5.9
	3 <sup>rd</sup> priority	2.6	-	2.6	3.1	2.4	5.5	-	-	-	3.8
	Not with priority	29.9	26.0	55.8	14.2	33.9	48.0	28.1	37.5	65.6	52.5
Other	Audible warning	1.3	1.3	2.6							0.8
	Car parks for the disabled				-	0.8	0.8				0.4
	WC for the disabled				-	0.8	0.8				0.4

**Table 13.** Distribution of the issues with first priority for the impairment groups with respect to the built environment (bold figures show 3 priorities agreed on most by each of impairment groups).

<b>Priorities with respect to accessibility to the built environment</b>	<b>Visually impaired (%)</b>	<b>Walking impaired (%)</b>	<b>Wheelchair dependents (%)</b>
Bringing suitable solutions to usage of sidewalks and pedestrian crossings by the disabled	75.3	52.8	59.4
Bringing solutions intended for usage of open and green spaces by the disabled	31.2	22.8	18.8
Bringing solutions intended for usage of the buildings of public institutions by the disabled	37.7	33.1	34.4
Bringing solutions intended for usage of buildings of educational institutions and campuses by the disabled	49.4	23.6	53.1
Bringing solutions intended for usage of closed entertainment and recreation spaces by the disabled	24.7	8.7	12.5
Bringing solutions intended for usage of shopping centers, market places, arcades etc. by the disabled	28.6	17.3	6.3
Bringing solutions intended for usage of the stops and stations of means of mass transport by the disabled people	32.5	29.9	25.0
Bringing solutions intended for usage of means of mass transport by the disabled	55.8	39.4	68.8
Creating spaces, areas and activities where the disabled can meet with other segments of the society	36.4	44.9	28.1
Efforts intended to increase the consciousness and sensitivity towards the disabled	51.9	37.8	59.4
Taking measures intended for safety of the disabled in urban traffic	29.9	42.5	34.4

“as normal as can be” is linked to removal of the physical and social barriers (Tufan and Arun, 2006). In Turkey, especially in big cities, there are problems with respect to participation of the disabled people to social life since there are not enough solutions and measures intended for providing and/or facilitating usage of the physical environment by the disabled. Due to the approaches in organizing the built environment giving priority to motorcars, accessibility of many of the disabled people to urban usage becomes either very hard or impossible without help from someone else. Physically and visually impaired people constitute the group of disabled people facing difficulties most in this respect. According to the findings of the survey, about 35% of the physically and visually impaired people do not want to be in the built environment other than reasons such as going to school or work, or for meeting their bare necessities etc. This makes it hard for the disabled people to participate in social life and to feel that they belong to the society.

Findings of this survey support the existence of serious problems with respect to accessibility of all impairment groups included in the survey to the built environment

and their equal participation to social life due to various barriers impeding particularly pedestrian movement and lack of arrangements and measures intended for usage of means of mass transport by the disabled people. The fact that accessibility to the built environment harbors many difficulties for the disabled people leads them to stay away from participating to social life except for bare necessities and to live as a community separated from the rest of the society. 78.5% of the disabled people surveyed thinks that social consciousness and understanding towards themselves have not developed enough and 40% of them feel themselves excluded from the other segments of the society.

In urban design, it must be taken into consideration that the disabled groups are not homogenous communities. That means, disability can comprise one or more than seeing, hearing and movement limitations, difficulty in learning and chronic diseases. Coverage and definition of urban design decisions must be kept broad and blood pressure, diabetes, obesity, etc. must also be considered as disability and universal design approach must be adopted. Furthermore, space organization must be made

so as to allow sharing of the same space by individuals with different physical and cognitive faculties. Errors made in urban design and barriers symbolize the pressures on independence and human rights of particularly the disabled people.

Concluding, two basic issues that must be avoided in disabled-friendly approach are social isolation and stigmatization. Today, as is the case in many societies, the biggest problem for especially old and disabled people in Ankara, too, is limitation of possibilities of participation to social life. Furthermore, some practices such as "Park for Visually-Impaired People", "Park for Disabled Children" etc. which can be considered as "stigmatization" and which are widespread in Ankara and also in other big cities of the country do not fulfill the expected and desired function despite the good will they harbor and are approaches fostering the idea that disabled people are a separate community. Common spaces within the city must make it possible for all to share the same activity in the same space. Living environment suitable not only for the disabled but also for all people living in the cities will have been created when universality of urban design and "creation of and accessibility to spaces suitable for all" approach is preferred.

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