

## Urbanization in *Gebze* and Its Effects on Health Indicators

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**Abstract:** This article deals with urbanization process in *Gebze* and its effects on health indicators. For this aim, in the introduction the various definitions of urbanization will be given and the urbanization fact in Turkey will be examined briefly. A photograph of urbanization process in *Gebze* will be taken in the second part. In the third part, the system of Healthcare in Turkey will be mentioned and whether there is interaction between health and urbanization will be dwelled upon.

**Key Words:** Urbanization, Rapid Urbanization, Immigration, Population, and Health Indicators

### 1. Introduction

Urbanization in the narrow meaning, reflects the characteristics of demographic dimension of urbanization, expresses an increase in the number of cities and in the population living in the cities. Urban population increases by migration and as a result of the decrease in the difference between birth and death. Since fertility tends to decrease in the cities of developing countries, the migration is the major cause of urban population growth (Keleş, 2000: 19). In other words, the increase in the cities doesn't stem from rate of natural increase, which is the rate at which a population is increasing in a given year due to a surplus of births over deaths. Similar definition was made by Vlahov and Galea. To them, urbanization refers to change in size, density, and heterogeneity of cities (Vlahov and Galea, 2002: 51). From these definitions, it can be said that urbanization is the expansion of a city or metropolitan or the rate at which the urban population increases in a given period relative to its own size at the start of that period.

Nearly half the world's population now lives in urban settlements (Moore, Gould and S.Keary, 2002: 269). The modern societies had completed their industrialization process until the beginning of 20<sup>th</sup> century. On the other hand, traditional societies

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had not yet started their industrialization process after the World War Two. One of the dominant characteristics of growth of developing countries and undeveloped countries since World War II has been rapid urbanization. Turkey is one of the countries with the most rapid process of urbanization in the world (Işık, 1999). The rapid growth is commonly referred to as either overurbanization or hyperurbanization terms that prejudice the effects of urbanization on development as being unfavorable on balance (Erkan, 2002: 21; Frankman, 1971). The population of Turkey has been undergoing a rapid process of urbanization since the 1950s. In 1970, only 32.3% of the population was living in urban settlements with at least 20.000 population, however, by 1990, this grew to 51.4%. The population growth rate, while 0.54% in rural areas, has reached to 3.38% in urban centres because of the massive migration over the past few years (Turkish Government and UNICEF, 1998). The rapid urbanization created by the population coming from the rural areas increases the number of large cities on the one hand, and causes serious problems from the viewpoint of sound urbanization in the large metropolises, on the other.

According to the Population Census held in 2000, The Republic of Turkey, as one of the developing countries, had population of 67.8 million. 65% of the population in Turkey lived in urban areas and the remaining in the countryside. Urbanization has been proceeding very rapidly. The percentage of the population living in the urban areas was 44% in 1980, 32% in 1960, 25% in 1950 and 20% in 1923. In Turkey, the urban population has been increasing rapidly due to great migration into the cities from rural areas. The poverty that has become commonplace in the rural areas in Turkey caused many to flock to urban centers in search of an improvement in schools, health care facilities, cultural institutions, and other amenities far superior to those available in rural areas. Even if decreases have been observed in the birth rate and the mortality rate over time, the migration movement did not lose much momentum. The principal cause of rapid urban growth has been the attraction to the rapid expansion of economic opportunities. The population is concentrated especially in the large provinces and industrial regions. Kocaeli and its district, Gebze, are industrial or trade centers and they are the densest populated areas.

The current written materials pertaining to Gebze deal with historical, economic, administrative structure of Gebze. No specific attention in written materials has been given to urbanization process in Gebze. So these materials are not comprehensive analysis of its urbanization aspects. Not merely have the relationships between health and urbanization been neglected but the urbanization process in Gebze that underlie these relationships have been largely ignored. Therefore in this paper, ur-

banization process and its affects on health will be tried to be examined. The scope of the study is restricted to Gebze and its periphery.

The purpose of study in this article is to create a satisfactory schematization of urbanization process in Gebze, to provide of overview of the dynamics of urbanization pertaining to immigration from other cities to Gebze, to understand the real effects of rapid urbanization over health care indicators. But most of the important factors that affect health can be considered within three broad themes: the social environment, the physical environment, and access to health and social services. Therefore the development of “urban health” as a discipline like ecology doesn’t exist currently. Its formation as a separate discipline necessitates some time. Cross-national research may provide insights about the key features of cities and how urbanization influences population health (Vlahov and Galea, 2002: 51).

## **2. Urbanization Process in Gebze**

### **2.1. Ottoman Period**

Gebze, which is located between Istanbul and Kocaeli, having a rich historical past, of which economy is based on industry, is a rapidly enhancing and extending district of Turkey (The Municipality of Gebze, 2003: 16). Today Gebze is located at an important junction where land, sea, railway and airport intersect each other. Gebze has a long history. After the war between Ottomans and Byzantine in 1330, the region was conquered by Ottomans in the early years of Ottoman Empire. The founder of the present Gebze was Orhan Ghazi who was second sultan of Ottomans.

The administrative structure of Gebze in 17<sup>th</sup> and 18<sup>th</sup> centuries was based on sub-district (nahiye), since state (eyalet) structure had prevailed until 1864 year in Ottoman Empire. With the new arrangement in 1864, the province (vilayet) structure took place the state structure (Ortaylı, 1990: 67). According to that arrangement, Gebze was administrative district (kaza) until 20 April 1924. In other words, Gebze had maintained its feature of being an important place as a district associated sometimes to Istanbul and usually to Kocaeli along the years up to recent times of Ottoman Empire. After announcement of Republic, it was announced to be a district in accordance with the new Cities Act (Chamber of Gebze Commerce, 1993: 100).

There were 21 villages in Gebze at the beginning of 16<sup>th</sup> century. *Çoban Mustafa Pasha Mosque* in the complex and Caravanserai, which had a great role in the distribution of population, was constructed in 1523 year. (Tuğlacı, 1985: 132-133). The foundation of this mosque caused a little settlement areas to shift towards the north.

For instance, though Güzeller quarter that was located on the north of present settlements had 28 households in 1530 year, it became the most crowded quarter of Gebze with the 28 households in 1844/45. After Güzeller quarter, Mustafa Pasha quarter, Sultan Orhan quarter, Hacı Halil quarter, Küçükkmescit Quarter and Karabakkal quarter were lined up respectively in population. In the 16<sup>th</sup> century 28.38% of total population was living in urban center and the rest in the villages and arable fields (mezraa), the 19.91% of total population in 1844/45 years was living in urban center and the rest in the villages and arable fields. The existing production and opportunities of transportation technology, assignment (tahsis) politics and the necessities of the grooming system were some reasons beyond the population increase in urban centers against rural areas (Çelik, 2003: 120-121).

The economy of Gebze in Ottoman Empire was mostly based on agriculture. The %67 of population working in urban center in the middle of 19<sup>th</sup> century was directly busy with agriculture (Çelik, 2000: 30). As the region was located on transportation way and close to Sultanate, the commerce and industry were also important. Those factories were not so big. Hereke textile factory as the first big industrial management was established in 19<sup>th</sup> century (Tuğlacı, 1985: 132). That institution was followed by first cement factory founded by a foreigner in 1910 in Darıca, which was the village of Gebze.

## 2.2. Turkish Republic Period

Gebze became a district associated to Kocaeli Province in Turkish Republic period, with the aforementioned Cities Act. In the early years of Republic, the economy of Gebze was based on again agriculture like that in the Ottoman Empire (Çelik, 2004: 25). In other words, neither development in industry nor in agriculture was recorded in Gebze before 1950s. Also the urban population in Gebze hadn't increased so much until 1950s. Even though the rate of urban population was 7,52% in 1927 census, it was able to reach to 18,49% rate in 1950s. While the rate of urban population in Turkey in 1927 was %24,22 it was 17,42 in Kocaeli (Aynural, 2002: 22).

Gebze entered the 1950s with the superiority of rural population. In 1950s, there were five quarters in the center of city, which were Güzeller, Osman Yılmaz, Mustafaapaşa, Sultan Orhan and Hacı Halil. Osman Yılmaz Quarter that is one of the central settlements today was the most planned quarter at that time, since the houses assigned by the governor of district Osman Yılmaz to Crimean Tatars and Romanians in 1935 was consisting of one-floor with gardens. Therefore, today sometimes some people call O.Yılmaz Quarter as "Tatar Quarter" (Ukuşlu, 2004: 66). To better un-

derstand the conditions of Gebze in 1950s, let us take a short look at the newspaper 'Gebze'nin Sesi' dated 28 October 1954. To this newspaper, Gebze, which had been a tranquil city until 1960's years, didn't have electricity in 1950s. The water need of the city dwellers was mostly provided by fountains because of the lacking two water supplies. Therefore the city didn't have modern water supply. The roads connected the city to its villages were inadequate (Yakup, 1954: 1-2). The electricity produced by two generators firstly was being provided in 1950s.

The outstanding fact of modern society is the growth of great cities (Burgess, 1977: 177). But Gebze had become a tranquil small city until the early 1960s. After 1960s, it started to be industrialized due to some reasons. The city started to take the population from the other cities in the parallel to migration process in Turkey and developed to be urbanized rapidly with the effect of industrialization. In republic period, first industrial establishment, Çayırova Cam Fabrikası (Glass Plant), was founded in 1961 in Gebze. This industry was followed by Polisan Kimya (Chemistry). In 1968, Arçelik, one of Turkish biggest industrial establishment started to operate in Gebze (The Education Foundation of Gebze, 2001: 196-198).

The Gebze has faced an intensive urban migration such Turkish three big metropolitan cities as Istanbul, Ankara, and İzmir after 1970s (Çelik, 2004: 26). It has become magnets for immigrants. It has long been a centre attracting diverse groups of people, a haven for intense economic activity. The urban population doubled between 1960-1970, increasing from 8.018 to 18.773 inhabitants. At the beginning of 1980s, the urban population reached to 58.318. That meant the population within boundaries of municipality was about three fold greater than that in 1970. These population shifts have had tremendous consequences on the city. The high rate of population growth necessitated continuous new housing constructions. Since urban population was unable to afford even the cheapest housing with basic services, such as running water and sewage connections. Having no resources, the newcomers built temporary shelters on undeveloped land on the outskirts of city. City center was surrounded by shantytowns inhabited by immigrants. In the meaning, shantytown houses built on government land are called *gecekondus*. This word literally means "built overnight". The shell of a shantytown house is built "overnight" by its owner, with the help of friends and relatives (Keleş, 2000: 385). As the great part of population of Gebze was made up of immigrants coming from the rural areas of the other cities, the government land in periphery of city started to be invaded by *gecekondus* and agricultural lands was sold for the construction of *gecekondus* by parceling. The *gecekondus* on government lands and houses constructed without permission on parcels constituted 70% of residences at the late 1970s (Kurt, 1995: 39). The infra-

structural services such as sanitation and water supply in these illegal settlements were in short supply and inadequate in condition. After the mid-1980s, the allocation of government land among newcomers was determined by the so-called "real estate Mafia". Present-day *gecekondus* are different from the previous ones in some respects. Before 1970s, it was evident that squatting was based on the concept of self-help and mutual aid. Building a squatter dwelling was a joint effort of family members, relatives and friends, with no assistance from public authorities. The structures were built mainly for self-use, and renting out was an exceptionally rare phenomenon. During the late 1960s and into the 1970s, the squatting process gradually became more commercialized as squatters began renting out their units - the squatter became an entrepreneur. While the owners and constructors of previous *gecekondus* were same, this started to change after 1980s with advent of the liberal economy in Turkey. From the late 1970s onwards, the process became even more commercialized as private firms and developers took on the responsibility of securing the land, designing the project, and constructing the units. The self-help nature of squatting was replaced by the profit motive (e.g. Kurt, 1995: 39). Hence, they have been produced and sold by "real estate Mafia" as apartment blocks. Previous *gecekondus* mostly had one floor house with small garden.

These squatter settlements or *gecekondus* after 1980s soon became permanent neighborhoods, albeit these lacked urban amenities such as piped water, electricity, and paved streets. Eventually, some quarters such as Güzeller, Arapçeşme that were ones of *gecekondus* areas at 1970s, were incorporated into the cities after 1990s. At the late years of 1970s and at the beginning of 1980s new *gecekondus* settlements such as Yavuz Selim, Mimar Sinan, Adem Yavuz, Hürriyet, Ulus, Cumhuriyet, Çayirova at west of city, all seven of which would become the new city quarters in 1989, started to be formed. At the mid-1980s, the residence of Gaziler, Arapçeşme at north; Beylikbağı and Yenimahalle at west; Sırasöğütler, Tatlıkuyu, Köşklüçeşme at south as new quarters was added to previous city quarters which were Osman Yılmaz, Mustafa Pasha, Sultan Orhan, Güzeller and Hacı Halil in 1980s. Even though İnönü settlement, which is today one of *gecekondus* areas, became a quarter by separating from Gaziler quarter in the mid-1990s and but present Kiraz Pınar, Mevlana and Yeni Kent peripheral settlements were able to become new quarters after the local elections held in 28 March 2004. Today, there are twenty-six quarters in Gebze (Ukuşlu, 2004: 79).

The high population increase in Gebze stems from different resources. The main reason behind high population growth in Gebze after 1980s is that the waves of new migration were wanted to be absorbed in here since the population of Istanbul was

approaching ten million. Also its proximity to İstanbul has had an important role in the boost of the city population. Moreover, it has carried out the great part of its commercial relations with İstanbul (Çelik, 2004: 173).. Besides, it is located on the industrial region and is located at an important junction where land, sea, railway and airport intersect each other. Lastly, the people like Tatars in 1935 and Balkan Turks coming from foreign countries due to various reasons in the years of 1951, 1971, 1978 and 1989 had the effect on the increasing of city population.

The total population of Gebze was 421.932 according to the results of the general population count made in November 2000. The population within the boundaries of municipality was 253.487. For instance, since 1927, the city has grown in population from 38.079 persons to close to 421.932 persons by the 2000s. Whereas the population density was 73 persons per sq. km for Turkey in 1990, 258 for the Province of Kocaeli, it was 426 persons in Gebze at same year (Müsiad, 1997: 17). To 2000 census, the population density increased to 88 persons per sq. km for Turkey, 241 persons in Marmara Region, 334 persons in Kocaeli and 521,9 persons in Gebze (DİE, 2002: 61). While Gebze's population was increasing at the rate of 4.65% annually in 1990s, annual growth in Kocaeli at same year was 2.53% (DİE, 2002: 43). This rate is more than twice as high as the rate of growth of Kocaeli's population. In the meantime, the annual rate of population of Kocaeli was 2.73% in 1965s, 4.29 in 1970s, 4.45 in 1975s and 4.35 in 1980s. So we can say that Kocaeli's population increase started to get slowly while the population growth in Gebze has been going up.

In summary, Gebze, which is today on the area of Turkey' s most densely populated regions, takes place the fourth position among 100 most developed counties of the country after Şişli, Bakırköy of İstanbul and Çankaya of Ankara in population sense (Gebze Belediyesi, 2003: 102). Although it is a district, its population is higher than that of 51 provinces of Turkey. Meanwhile, there are 81 provinces in Turkey. The city exploded from the late 1960s onwards with the establishment of big industrial institutions. The population in Gebze has increased with the immigrants rather than the natural rate. In other words, increase in city stems from immigration rather than the excess of the birth rate over the death rate. The typical process of the expansion of city was towards the east in 1970s. Today the tendency of the most highly urbanized and industrialized city to expand is towards the north.

### **3. The Healthcare Services and Some Health Indicators in Gebze**

The provision of healthcare along with the necessary infrastructure and services remains a top priority in Turkey. Article 56 of the Turkish Constitution states that the

state is responsible for protecting individual and public health in order to provide the continuation of physical, psychological and social well-being of everybody's lives. For this purpose, to make plans and programs covering the country, implement them and make them to be implemented, to take all the measures related to health, to make the necessary organizations are among the responsibilities of Ministry of Health (MoH). Besides, to give preventive services by fighting against communicable, epidemic and social diseases, to give curative services by treating the ill person and to give rehabilitative services by bringing services to elderly and disabled people are also the duties of the MoH. Of course, the responsibilities of MoH are not limited to these. It is incumbent upon the State therefore, to take the necessary steps. The Ministry of Health has established organizations and institutions in order to carry out its responsibilities mentioned above and have realized a widespread organization throughout the country.

Healthcare and related social welfare activities in the 2000s remain the responsibility of MoH, which was established in 1920. At the central level, MoH is responsible for the country's health policy and health services and supervises all medical and health care personnel in the public sector; at the local level, provincial directorates manage health services provided by MoH. Health services in Turkey are provided mainly by the Ministry of Health, universities, the Social Insurance Agency, and the private sector (Ateş, 2004: 36). MoH is the major provider of primary and secondary care and the only provider of preventive health services. It employs 195,000 staff and operates 691 hospitals with a 79,632-bed capacity in 2002 (MoH, 2002). Now, we can look at the some health indicators in Gebze.

### **3.1. The Population Per Health Center**

The healthcare in Gebze is provided at two levels. At the first level, there exist the active 20 Health Centers, a Maternal and Child Health/Family Planning Center (MCH-FP), a Tuberculosis Combat Dispensary, and a Public Health Laboratory of District, those of which constitute the fundamental part of Primary health care in the district. Besides these, there are 104 Health Houses formed under the structure of Health Center including 8 Village Health Station in its rural villages. The Health Center can be defined as a medical and social institution at which the primary health services in a given area are provided under the light of the science and art of Public Health. Normally, a health center has to be established for 5 or 10 thousand people living in a given area (MoH, 2001: 30). As seen in Table 1, there was virtually huge



gab in health centers in Marmara Region and in the province of Kocaeli when compared to Turkey. This gap increases too much in Gebze.

**Table 1. The population per Health Center (\*)**

Year	Turkey	Marmara	Kocaeli	Gebze
2000	11.461	19.434	13.195	25.076
2001	11.752	19.344	12.033	23.639
2002	12.057	20.091	13.351	22.607

**Source:** Data from the web sites of MoH, 2000, 2001 and 2002

(\*) The Statistics for Gebze are obtained from the Presidency of Health Group in Gebze as crude raw and prepared by author.

### 3.2. The Population Per Health Personnel working in Health Center

There is not only inadequacy in number of health center in Gebze, but also in the numbers of health personnel. Normally, a practicing physician, a nurse/midwife and a health officer for 2000-2500 population must be employed in Health Centers providing primary health care services (Aksakoğlu, 1996: 56).

**Table 2. Population Per Health Personnel working in Health Centers, 2002**

	Turkey	Marmara Region	Kocaeli	Gebze
The Number of Practicing Physicians	14.956	2.395	286	53
Population for Per Practicing Physicians	4.708	7.651	4.448	8.105
Number of Midwives	19.177	3.290	274	67
Population for Per Midwife	3.672	5.569	4.643	6.411
Number of Nurses	11.364	1.593	233	45
Population for Per Nurse	6.196	9.382	5.460	9.545
Number of Sanitarian and Health Tech.	6.298	843	120	19
Population for Per Sanitarian	11.181	21.736	10.602	22.608

**Source:** Data from The Presidency of Gebze Health Group; The web sites of MoH.

As it's seen in Table 2 above, population for per practicing physicians working in the primary health care services in Gebze is twice as much as in Turkey, Marmara Region and Kocaeli Province. The burden over the shoulders of health personnel is seen among Health officers in comparison to Turkey. While the fullness of practicing physicians in Primary Health Services was 33 %, 26 % for both nurse and midwives, 19% for health services and lastly 25 % for village health midwife. These ra-

tios for Turkey were 43 %, 27-29%, 19%, and 25 % respectively. Since the “primary level” is not sufficiently strong for constructing the services, the desired level has not been achieved in the delivery of primary health care services. The infrastructure of the health centers is insufficient both in rural areas and in city center. On the other hand, the city settlers like the citizens in different parts of Turkey seem to be reluctant to get health services at this level.

### 3.3. The Manpower

Quantitative deficiencies of human resource and quality problems are among the main problems in health sector in *Gebze*. The root of health problem faced in *Gebze* goes to the hierarchical and complex structure of health administration in Turkey. Planning, training and utilization of human resources have been carried out by different institutions. Planning has been performed by State Planning Organization (SPO), training has been performed by universities and employment has been performed by the Ministry of Health and Social Security Organization. Since there is no effective coordination between these institutions, the planning of services and investments cannot be carried out in parallel with the social needs and problems like inadequacy of skilled manpower and health institutions arise.

**Table 3. Manpower, 2002**

	Turkey	<i>Gebze</i>
Number of Physicians (*)	90.957	256
Population for Per Physician	773	1.662
Number of Dentists	15.866	24
Population for Per Dentist	4.432	17.729
Number of Pharmacists	22.922	5
Population for Per Pharmacist	3.068	85.101
Number of Sanitarian and Health Technicians	45.560	61
Population for Per Sanitarian	1.543	6.976
Number of Nurses	75.879	206
Population for Per Nurse	927	2.066
Number of Midwives	41.158	120
Population for Per Midwife	1.708	3.546

**Source:** State Institute of Statistics (DPT), 2002; Data from The Presidency of Health Group in *Gebze*, 2002

(\*) It includes all practicing physicians and specialized physicians

As it's seen in Table 3, while population per physician was around 300 in European Countries, this ratio was 773 in Turkey and 1662 in Gebze. Again, population per physician in Turkey and Gebze was 927 and 2066 respectively while being 200 in European Countries.

### 3.4. The Number of Beds Per Population

The Gebze State Hospital with the capacity of 80 beds and the Hospital of Social Insurance Institution (SSK) with the capacity of 120 beds are medical institutions offering curative services in the district of Gebze. In addition to these state-owned institutions, three private hospitals providing curative health services were existent in the district in 2002. With the establishment of private of Merkez Hospital in 2003, the number of private curative hospitals increased to four.

**Table 4. Number of Beds Per 10.000 Population, 2002**

	General				Ministry of Health			
	A	B	C	D	B	C	D	
Turkey	69.749.000	1.114	162.235	23,26	654	88.827	12,74	
Marmara	18.073.374	317	49.655	27,47	111	20.751	11,48	
Kocaeli	1.253.754	17	2.194	17,50	6	875	6,98	
<b>Gebze</b>	429.544	5	279	6,50	1	80	1,86	

**Source:** The MoH General Directorate of Curative Services; The dates from State Hospital and Social Insurance Institution Hospital in Gebze

**Note:** Number of hospitals and beds of public and private do not cover military hospitals.

A: Population

B: Number of Hospitals

C: Number of Beds

D: Number of Beds per 10.000 Populations

As seen in Table 4, out of Hospitals of Ministry of National Defence, while the number of beds per 10.000 populations in Turkey was about 23, this number was around 6. When compared the bed capacity of the District of Gebze and Turkey with those of some European Countries, it can be more easily seen what a huge gab existed in the number of beds for a given quantity of people in the district. For instance, in 2001 there existed 79 beds for 10.000 in France, 40 beds in Spain, 43 in Norway, 44 Italy, 70 in Belgium, 73 in Finland, and so on.

### 3.5. Bed Occupancy Rate

In 2002, while 50% of the patients in Turkey were stayed at medical institutions at MoH, 24.7% were accommodated at the hospitals of Social Insurance Institutions. On the other hand, these ratios were 31% and 43% in Gebze respectively. *Bed occupancy rate* shows to what proportion the beds of hospitals were employed by the patients in a period of time. It is calculated by the following formula.

$$\text{Bed Occupancy rate (\%)} = \frac{\text{Total Patient Days} * 100}{\text{Number of Existing Days} * (3 \text{ or } 12 \text{ monthly})}$$

**Table 5. Bed Occupancy Rate (%) in Gebze, 2002**

	Staff Bed Capacity	Existing Bed Capacity	Total Patient Days	Bed Occupancy Rate (%)
Private Bayramođlu Tevfik Kuşođlu Hospital	19	19	210	3,0
The Municipality of Gebze Private Sümeyya Hatun Hospital	40	20	3.210	44,0
Private Yeni Yüzyıl Hospital	40	40	4.793	32,8
Social Insurance Institution Hospital	120	120	27.344	65,1
Gebze State Hospital	100	80	17.652	60,0
<b>Total</b>	<b>319</b>	<b>279</b>	<b>53.209</b>	<b>41</b>

**Source:** The Presidency of Health Group in the District of Gebze

The bed occupancy rate of the district of Gebze shown above was lower than that of Turkey average that was 57%. This differed in the ratios 80-85% in European Countries. For instance, it was 86.5% in Germany, 86.7% in Belgium, 80.4% in France, and so on (Kurtulmuş, 1998: 242). Like this, average length of stay at the hospitals in the district, which shows that how efficient a bed is used, was too low in comparison to the average of Turkey and developed countries. Whereas the average length of stay (day) was 2.82 days in Gebze and 5.8 in general Turkey, it was around 20 days in the developed countries (e.g., 16.6 days in Germany, 18.1 in Finland, 20 in Sweden, 25 in Switzerland, 52.1 in Japan, etc.). Also the other indicators pertaining to bed in the hospitals such as speed of discharge from bed (patient), Unemployed period for bed (day) and Rate of Stayed Patient (%) were also too low, com-

pared with the average of Turkey. The rate of Stayed Patient shows us in what percent the patients applying in the polyclinics for the examination are stayed. While it was 4.4% in general Turkey in 2002, 4.1% in the province of Kocaeli, it was 2.3 % in the district of Gebze. The fact that the rate of Stayed Patient was much lower in Gebze, in Kocaeli and in Turkey shows that the health institutions providing curative health services operate like the primary health services.

#### 4.6. Infant and Under 5 Years Child Mortality Rates

There is high infant mortality rate in Gebze. Although this rate was reduced to 72 for 1000 live birth in 2003 compared to more than 96 in 1000 alive birth in 2001, Gebze was worse than the average of Turkey, which was 36 ‰ and developed countries in Europe, the infant mortality rate of whose were lesser than 8 for 1000 live birth. For instance, according to 2002 UNICEF statistics, the rate of infant mortality for Polonium was 6 %, 5 % for Austria, 6 % for Australia, 6 % for New Zealand, 5 % for Belgium, 5 % in Canada, 4 % in Finland, 3 % in Sweden, 4 % in France, 4 % in Germany and etc. Factors such as insufficient follow up of pregnant women, medical intervention during and after birth and insufficiency of care are some of the reasons of high infant mortality. Besides that, the child mortality rate under 5 years with 92 per 1000 child under-5 years was also very low in comparison to the rate of Turkey average and the developed countries. For example, according to the statistics of World Health Organization (WHO) for 2002, under 5 ages mortality rate was 7 ‰ in the Great Britain, 6 % in Belgium, 6 % in Switzerland, 5 % in Germany, 5 % in Spain, 5 % in Norway, 4 ‰ in Finland, 4 ‰ in Sweden and so on. Among the reasons of death under the age of 5, perinatal reasons constitute the highest rate. When we look at the immunization rates for different vaccines in Gebze, which constitute an important place within the preventive health services, we see that the immunization rates in the district of Gebze are amazingly very high in accordance with the average of Turkey and some developed countries.

**Table 6. Immunization Ratios of The District of Gebze, 2002**

Vaccines	BCG	DTP-3	OPV	Measles	HBV-3	TT 2
Turkey	77	78	78	82	72	37
Marmara	82	79	79	86	73	25
Kocaeli	92	88	91	92	88	52
<b>Gebze</b>	94	93	93	97	92	46

Source: The Presidency of Health Group in Gebze

As a result, rapid urbanization confronts Gebze with many problems in health sector like in others. The capacity of city to respond to rapid urbanization is especially felt in the healthcare sector. The health facilities in Gebze are unable to cope with the increased demands on their services. The dearth of physical inadequacy in health sector with the lacking health personnel made situation even more serious. It is a fact that the health status of Gebze is not at a good level when compared to the average of Turkey, the Marmara Region, the Province of Kocaeli and the other countries. It doesn't seem possible to reach the perfection in the health services in the close future.

### **Conclusion**

In this paper, the urbanization pace that the city of Gebze has undergone has been tried to be investigated. As stated before, the paper has several limitations. Bearing these in mind, the study may be the base of further studies relating with social studies of the city. It might be useful to summarize the urbanization process that Gebze has faced. Gebze, which had been a tranquil city until 1960's years, started to take the population from the other cities in Turkey in parallel to migration process in Turkey and developed to be urbanized rapidly with the effect of industrialization. The urbanization process in Gebze, which is the most industrialized region of the country, has been carried out in three stages. In 1970's years, since the ways run in directions of east to west the urban and industry of district improved in the same direction. In 1980's, the settlement shifted towards the north of the district, while the industry developed in the eastern areas away from the district center. Towards 1990's years that is third and last stage, the habitation was inclined in the center settled before by natives and around peripheral centers. On the other hand, the industrial organizations have been forced to be established in Organized Industrial Zone (OIZ).

Rapid urbanization in Gebze has increasingly impacted on the urban environment and the health of the growing urban population. The rapid urbanization that Gebze has experienced 1960s onward has resulted in the emergence of large areas of *gecekondus*. An increasing number of *gecekondus* have been putting a strain on the existing services and infrastructure, and creating demand for new health, education, and other basic services. Problem encountered in health service offering is one of these rapid urbanization problems, which are especially based on quantitative criteria like population. The basic health indicators in Gebze like Under-5 mortality rate, Infant

mortality rate (under 1), Hospital beds per 100.000 population are too low according to the averages of Turkey and developed countries.

The immigration to Gebze is the most important and devastating social force since it has caused illegal occupation and illegal use of the urban sites as a result of an unbelievable amount of speculative profit over the land, and thus making the cities unlivable and unbearable. The city dwellers have rights to expect that conditions in urban areas meet certain minimum standards. These are not consisting of basic services such as health clinics, housing, water, electricity, roads, and sanitation but also fresh air, clean water and green spaces. A committee must be created to tackle vital issues anywhere in the Gebze. But to date almost no comprehensive and coordinated efforts have been made in Gebze in this area. Presently, the city has not responded adequately to the problems posed by five thousand residents. To find solutions to urban environmental issues, the Governor of district (kaymakam) and mayor of district with people from the private sector and NGOs should come together to develop the strategies and put into practice. This committee through the active participation of a wide range of central and municipal government departments, non-governmental organizations, academic institutions and the private sector can also serve as an important vehicle for building capacity and technical assistance for sustainable urban development. When this is realized, the other problems in health care, education can easily be sorted out.

### **Gebze'de Kentleşme ve Sağlık Göstergelerine Olan Etkisi**

**Özet:** Bu makale, Gebze'deki kentleşme süreci ve bu sürecin sağlık göstergelere olan etkisiyle ilgilidir. Bu amaçla, girişte kentleşme kavramları verilecektir ve Türkiye'deki kentleşme olgusu kısaca açıklanacaktır. İkinci bölümde Gebze'deki kentleşme sürecinin fotoğrafını çekilecektir. Üçüncü bölümde Türkiye'deki sağlık sisteminden kısaca bahsedilecektir ve kentleşme ile sağlık arasındaki etkileşimin olup olmadığı ele alınacaktır.

**Anahtar Kelimeler:** Kentleşme, Hızlı Kentleşme, Göç, Nüfus, Sağlık Göstergeleri

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