

**Original Article:**

**Evaluation of Human Resources Planning within the Framework of Turkey's Health Transformation Program (HTP) with regards to Principles of Justice**

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**Abstract**

**Objective:** Health Transformation Program (HTP) which is a health sector reform began in 2003 in Turkey has changed many parameters within the health sector. In the years when the reform was proposed, it can be said that most of the limitations of the health system are related to the insufficiency of resources and the inability to organize them properly. It is clear that the limitations of human resources, like all resources, bring out the justice problem in distribution. Justice requires fair participation to the resources that will be used in the field of health and fair, honest, and equal distribution of the allocated resource according to needs. Our study will evaluate the human resources policy of the Health Transformation Program in terms of need, equality, utilitarianism, and equity which are the sub-principles of justice. **Materials and methods:** This research is an example of retrospective study. The health justice principle has been tried to be tested as a new health policy, the Health Transformation Program, was declared in Turkey in 2003 by comparing human resources data between the beginning and end of the process up to 2013. The data acquired in our country will be compared with the data of the world and OECD countries before and after the program. Human resources data will be obtained from the Ministry of Health, State Planning Organization, WHO, WB and OECD. **Results and discussion:** As a result of the evaluations, it is observed that the principles of justice are generally pursued in the planning and implementation of the Health Transformation Program. On the other hand, it is possible for people to have access to health services according to their needs, as the program claims, by applying the need principle. However, the lack of tangible criteria to determine needs and the ambiguity of the definition of need delimitate the usage of this sub-principle of justice. **Conclusion:** It is difficult to fully observe the principle of justice in health policies. Fair planning human resources as well as physical resources is significant for both patients and health care workers themselves.

**Keywords:** Human resources, Health Transformation Program, justice, healthcare management

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**Introduction**

The aim of health services is to increase the health level of the society. The way to increase health level is to protect the society from health risks and to provide the best health service to those in need.<sup>1</sup> The problems that arise in accessing health services are related to the principle of justice in medicine. Therefore, justice requires fair participation to the resources that will be used in the field of health and fair, honest, and equal distribution of the allocated resource according to needs.<sup>2</sup>

The distribution of health resources is provided in two ways. This macro and micro distribution is based on individual distribution and general

distribution. Accordingly, *micro-level distribution* is the transfer of the resources allocated for a particular treatment in relation to clinical ethics by choosing among the candidates for this treatment. And this brings with it certain ethical problems. *Macro-level distribution* is the distribution of the share allocated from the general budget in the health sector within the framework of health policies.<sup>3</sup>

Justice appears to work in two directions in macro distribution; horizontal and vertical justice. The distribution of costs and benefits among those with similar socio-economic or health structures is called *horizontal justice* and the distribution of

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those belonging to different structures is called *vertical justice*. Ensuring vertical justice in the society depends on ensuring justice in the areas of access, finance, expenditure and health indicators.<sup>4</sup> Pluralistic justice theorists acknowledge that justice is composed of various elements that cannot be reduced to one another. By applying this theory to health services, a number of sub-justice principles can be reached in the literature. Cookson and Dolan, who concentrated their work on health inequality, speak of three basic principles. The principle of need, utilitarianism (upgrading to the highest level), and equality. *The principle of need* envisages the distribution of health services at the rate of need, *the principle of utilitarianism (the principle of upgrading to the highest level)* stipulates the distribution of health services for the highest benefit, and *the principle of equality* foresees the distribution of services to minimize inequalities.<sup>5</sup> Apart from these, we include the principle of equity which can be considered as the fourth principle in the classification. *The principle of equity* is the absence of socially unjust and unjustified health differences.

We chose the Health Transformation Program (HTP) which was in force between the years 2003-2011 in Turkey as the field of application to practice the principles of justice. Turkey set out in the health care system in 2003 and foresaw a major change with the conversion program as a public health reform. The HTP is defined as a structured, planned and sustainable system based on the "people-centered" ethical approach, which aims to ensure equal access to quality health services for citizens, in line with the socioeconomic realities of the country.<sup>6</sup> The HTP has designated its main objectives as effectiveness, efficiency and equity. Health care workers are the main actors for the labor intensive health sector. The quality, safety and success of the service depend on the effective and efficient use of human factor. The focus of our study will be on the creation of human resources in health care during the HTP period and the analysis of its distribution within the framework of the above-mentioned sub-principles of justice. When we say human resources or health professionals in health, we are talking about employees who are involved in the delivery of all health services, who have received prior training for this complex and collaborative service and who

are bound by legal and ethical principles. Within this framework, we put specialist physicians, general practitioners, dentists, nurses, midwives, and pharmacists assigned in Turkey under a microscope in our study.

Issues related to health workforce planning, one of the basic principles of the Health Transformation Program, have taken their place as a component.<sup>7</sup> The planning of human resources is based on systematic analysis of total resources, predetermining in terms of quality and quantity with regards to future and planning how much of the needs can be met.<sup>8</sup> While creating a future perspective, it is necessary to collect and analyze today's and yesterday's data accurately and securely.

The Health Transformation Program which aims to organize, finance, and provide health services in an effective, efficient and equitable manner has made the same claims in human resources management. It is planned to reduce the cost by using the resources appropriately and to produce more services with the same resource. In addition, it was among the aims of people to have access to health services according to their needs. The Health Transformation Program has promised to introduce voluntary policies that encourage the distribution of health care workers across the country. As a result of this approach, abolishing mandatory service is aimed. Measures will be taken to encourage more willing and efficient work in public enterprises.<sup>9</sup>

### **Methodology**

This research is an example of retrospective study. The health justice principle has been tried to be tested as a new health policy, the Health Transformation Program, was declared in Turkey in 2003 by comparing human resources data between the beginning and end of the process up to 2013.

### **Findings**

When it comes to human resources in health, the number and density of physicians should be examined first. We will analyze the distribution of physicians in Turkey and the world by data acquired from the Ministry of Health, OECD, and World Bank (WB).

**Table1: Total Number of Physicians per 100.000 People by Region, 1993 - 2013**

|                       | 1993 | 1996 | 2000 | 2002 | 2013 | (Source)                                 |
|-----------------------|------|------|------|------|------|--|
| Western Anatolia      |      |      |      | 228  | 274  | MoH (2014) <sup>10</sup>                 |
| Aegean                |      |      |      | 155  | 191  | “  |
| Istanbul              |      |      |      | 193  | 184  | “  |
| <b>Turkey</b>         | 101  | 110  | 125  | 138  | 174  | SPO (1997) <sup>11</sup> ,<br>MoH (2014) |
| Central Anatolia      |      |      |      | 117  | 164  | “  |
| Mediterranean         |      |      |      | 123  | 161  | “  |
| Eastern Black Sea     |      |      |      | 113  | 160  | “  |
| West Marmara          |      |      |      | 105  | 154  | “  |
| Middle East Anatolia  |      |      |      | 95   | 146  | “  |
| Southeastern Anatolia |      |      |      | 68   | 124  | “  |

Although physician deficit in Turkey has been tried to be closed for many years, it can be said that this, as a problem, has affected all policy processes. It is possible to talk about the increase in the number of physicians per population while moving from 1993s to 2002s and from 2002s to 2013s. This increase is around 36% for the first period, while it is around 24% for the second period in which the HTP is in force. Looking at the whole country in general, the number of physicians per population

in Western Anatolia, Aegean, and Istanbul is over the average while remaining regions are below the average of Turkey. According to the data, the lowest number of physicians is in the Middle East and Southeastern Anatolia regions. However, even in regions that can be considered low in terms of physician density, it is outstanding that the number of physicians has almost doubled in the 11-year period.

**Table2: Number of Applications to Physicians per Person by Region, All Sectors, 2002-2013**

|                       | 2002 | 2013 | (Source)   |
|-----------------------|------|------|------------|
| Eastern Black Sea     | 4.1  | 9    | MoH (2014) |
| Western Black Sea     | 4    | 8.9  | “          |
| Aegean                | 3.9  | 8.8  | “          |
| East Marmara          | 3.2  | 8.7  | “          |
| Mediterranean         | 3.4  | 8.7  | “          |
| Western Anatolia      | 3.5  | 8.7  | “          |
| <b>Turkey</b>         | 3.1  | 8.2  | “          |
| Central Anatolia      | 3.3  | 8    | “          |
| Istanbul              | 2.3  | 7.6  | “          |
| Southeastern Anatolia | 2.3  | 7.6  | “          |
| Middle East Anatolia  | 2.5  | 6.7  | “          |

The number of applications per person per physician in Turkey has increased more than double. When looked at the regions, the highest increase is seen in Southeastern Anatolia. An approximately equal number of applications can be mentioned when all

regions are compared. Although the increase in the number of applications shows that access to the physician is easier, it is clear that it cannot be an indicator of health.

**Table3: Changes in the Number of Physicians in Turkey between the Years 1994-2002-2013**

|                            | 1994   | 2002   | 2013    | 2002-2013<br>Change (%) | Source                          |
|----------------------------|--------|--------|---------|-------------------------|---------------------------------|
| Specialist Physician       | 27 564 | 45 457 | 73 886  | 62                      | MoH (2002 <sup>12</sup> ; 2014) |
| General Practitioner       | 38 268 | 30 900 | 38 572  | 24                      | “                               |
| Resident Physician         |        | 15 592 | 21 317  | 36                      | “                               |
| Total Number of Physicians | 65 832 | 91 949 | 133 775 | 45                      | “                               |

The most important factor of the change in the total number of physicians between 2002 and 2013 is the increase in specialist physicians. The increase in the number of experts in 11 years is more than 60%. On the other hand, the numerical

increase of general practitioners is only 24%. This reveals that the number of specialist physicians per population has increased, but that of general practitioners has decreased. Thus, it is possible to say that physicians tend to specialize more.

**Table4: Proportion of General Practitioners and Specialist Physicians to the Total Number of Physicians**

|                           | 1995 | 2006  | 2013 | OECD 2013 | Source                    |
|---------------------------|------|-------|------|-----------|---------------------------|
| General Practitioner      | 60   | 34    | 31   | 22.5      | OECD (2017) <sup>13</sup> |
| Specialist Physician      | 40   | 66    | 69   | 62        | “                         |
| Pediatry                  |      | 5.22  | 5.28 | 4.67      | “                         |
| Gynecology and Obstetrics |      | 5.44  | 5.13 | 4.52      | “                         |
| Psychiatry                |      | 1.99  | 2.46 | 4.98      | “                         |
| Total Surgical Branches   |      | 21.96 | 23.5 | 18.7      | “                         |

Examining the specialization trends in Turkey, this table reveals that according to the ratio of 1995, the ratio of 2013 of general practitioners and specialist physicians has almost replaced. According to the data we can reach, there is a significant increase in the proportions of surgical branches and especially psychiatric expertise.

Nevertheless, there is a decrease in the obstetrics specialty, which is one of the risky professions. When compared with the OECD average, the rate of pediatric and obstetrics departments is almost the same among all physicians, but the psychiatry department is half.

**Table5: International Comparison of the Total Number of Physicians per 100,000, 2013**

|                                    | 2000 | 2013 | (Source)                            |
|------------------------------------|------|------|-------------------------------------|
| WHO European Region                |      | 331  | MoH (2014)                          |
| European Union                     | 320  | 325  | MoH (2014), WB (2017) <sup>14</sup> |
| High-Income Group Countries        |      | 294  | MoH (2014)                          |
| Turkey                             | 130  | 174  | MoH (2014), WB (2017)               |
| Medium-High Income Group Countries |      | 155  | MoH (2014)                          |
| World                              | 130  | 141  | MoH (2014), WB (2017)               |
| OECD                               | 250  | 280  | WB (2017)                           |

When Turkey's health human resources in proportion to the population is compared with the OECD and European countries' data, it is conferred that the number of physicians per population of 100.000 people is significantly lower. However, it is noted that it is slightly above the world average. Compared to 2000 and 2013, the increase in physician density in Turkey will be recognized as high in comparison with the other regions. While 8% in the world, 12% in OECD countries, 1% in the EU, this increase rate is 25% in our country.

The primary health care service is the area where the citizen has first contact with the health system. Significant progress has been made in this area, in which the HTP is particularly concerned. The family medicine system, which is the primary health care model of the HTP, is designed to cover the country in terms of prevalence and accessibility. Although human resources and examination will be examined in a separate section at primary health care, the number of examinations in particular is exhibited here.

**Table6: Annual Number of Examinations per Physician 2002-2013**

|   | 2002 | 2013    | (Source)        |
|---|------|---------|-----------------|
| Number of annual examinations per physician in first step | 3734 | >10.000 | MoH (2007;2014) |
| Total number of examinations per physician in our country | 3200 | 8200    | “               |
| Number of patients per physician in OECD countries        | 6462 | 6960    | “               |

Between 2002 and 2013, considering the decrease in the density of general practitioners mentioned earlier, the number of examinations per physician in primary health care increased 3 times. In addition, there were 10,317 examinations per polyclinic room in 2002 and 10,000 examinations in 2013. This number is 45% of the number of polyclinic rooms in the primary health care, while it is 100% in 2013. This change enabled physicians who were idle due to lack of space to provide more active services. The increase in the number of examinations per physician in primary health care by 3 times in 11 years is an indication

of the public's demand for primary health care and access to health care services.

The introduction of family medicine system can be considered as the most important development in primary health care. Family Medicine practice started in Düzce for the first time in 2005 as a pilot scheme. After 2009, it has become widespread in Turkey. While the average number of populations per family physician is 3,400 in Turkey among the countries applying family medicine this figure is around 1,200.<sup>15</sup> This necessitates the increase of family medicine units in the medium and long term.

**Table7: The Dentist Ratio between the Years 1991-2002-2013 in Turkey and OECD Countries**

|      | Total Number of Dentists | Number of Dentists per 100.000 People |      | Source                  |
|------|--------------------------|---------------------------------------|------|-------------------------|
|      | Turkey                   | Turkey                                | OECD |                         |
| 1991 | 10 623                   | 19                                    | 59   | OECD (2017)             |
| 2002 | 16 371                   | 25                                    | 65   | MoH (2014), OECD (2017) |
| 2013 | 22 295                   | 29                                    | 68   | MoH (2014), OECD (2017) |

When we look at dental health, which is another field of service, we can say that the increasing trend in the number of dentists in the country since 1991 has partially decreased in 2002-2013. We can see that when we compare the Turkey and OECD average of the number of dentists per population. Although partial increase has been detected, the density of dentists in Turkey is less than half of the OECD average. And this reinforces the thesis

that serious measures should be taken in this field. Ensuring quality patient care is possible with the presence of a sufficient number of qualified nurses. The difference between the health services provided in hospitals and those offered in other areas is the nursing services. Therefore, the increase in the quality of nursing services is directly proportional to the increase in the efficiency of hospitals.<sup>16</sup>

**Table8: The Number of Nurses and Midwives in the world, Turkey, and OECD Countries between the years 1991-2013**

|      | Total Number of Nurses | Total Number of Midwives | Number of Nurses and Midwives per 100.000 People |        |      | Source                   |
|------|------------------------|--------------------------|--|--------|------|--------------------------|
|      |                        |                          | Turkey   | Turkey | OECD |                          |
| 1991 |                        |                          | 150  | 644    |      | WB (2017)<br>OECD (2017) |
| 1994 | 56 280                 | 35 604                   | 160  |        |      | MoH (2002)               |
| 2002 | 72 393                 | 41 479                   | 171  | 700    | 236  | MoH (2014), WB (2017)    |
| 2013 | 139 544                | 53 427                   | 252  | 770    | 292  | MoH (2014), WB (2017)    |

It can be said that a 25% increase is observed from 1990s to 2000s in the number of nurses and midwives in Turkey. This increase is around 70% for the 11 years that the HTP is in force. Comparing the number of nurses and midwives per population with the world and OECD countries, it can be said that the situation in our country is not heart-

warming. The density of nurses and midwives, which are in a continuous upward trend, is slightly lower than the world average and even less than one third of the OECD average. According to these figures, questions arise about the effective and quality maintenance of patient care.

**Table9: The Number of Pharmacists in the world, Turkey, and OECD Countries between the years 1991-2013**

|      | Total Pharmacists | Number of Pharmacies per 100.000 People |        |      |            | Source   |
|------|-------------------|---|--------|------|------------|--|
|      |                   | Turkey                                  | Turkey | OECD | WHO Europe |  |
| 1991 | 16 002            | 28                                      | 56     |      |            | OECD (2017)  |
| 2002 | 22 322            | 33.6                                    | 72     | 46   | ?          | MoH (2014), OECD (2017) WHO (2017) <sup>17</sup>               |
| 2013 | 27 012            | 35.2                                    | 85     | 55   | 60         | MoH (2014), OECD (2017), FIP (2012) <sup>18</sup><br>WHO(2017) |

The majority of pharmacists in the private sector had a 40% increase from 1991 to 2002, while this increase was only 21% between 2002 and 2013. The number of pharmacists per 100.000 people is 12% increase for the first period in all sectors and 4% for the HTP period. With these figures, Turkey is below the OECD, WHO, European region, and world average. When assessing the number of pharmacists in Turkey, it is noteworthy that most of the pharmacists work in the private sector and

outside the hospital.

It should be acknowledged that healthcare worker planning is more a matter of training providers than service providers. It is necessary to plan the training processes of the number and quality of health workers that should exist by considering the current situation, future population and need projections. Health education has come some stages in our country.

**Table10: The Situation of Health Education in Turkey between the Years 2002-2013**

|                 | Total Number |      | Number of Students |        | Number of Instructors |        | Number of Students per Instructor |      |
|-----------------|--------------|------|--------------------|--------|-----------------------|--------|-----------------------------------|------|
|                 | 2002         | 2013 | 2002               | 2013   | 2002                  | 2013   | 2002                              | 2013 |
| Medical Faculty | 44           | 75   | 31 719             | 54 455 | 7 172                 | 11 741 | 4.4                               | 4.4  |
| Dentistry       | 14           | 35   | 5 256              | 11 113 | 606                   | 1 151  | 8.7                               | 9.7  |
| Pharmacy        | 11           | 20   | 4 120              | 7 693  | 354                   | 526    | 11.6                              | 14.6 |
| Nursing         | 76           | 109  | 16 423             | 38 112 | 528                   | 574    | 31.1                              | 66.4 |

**Source:** Republic of Turkey Ministry of Health, General Directorate of Health Research. *Annual of Health Statistics 2013 [Sağlık İstatistikleri Yılı 2013]*, Ankara, 2014.

There has been a significant increase in the number of universities in Turkey in recent years. The number of universities increased from 73 in 2002 to 168 in 2012. Parallel to this increase, we see that the number of health schools has also increased. There has been a significant increase in the number of medicine, dentistry, and pharmacy faculties and nursing schools between 2002-2013 academic year in Turkey. Almost all of them reached a doubling number in the process.

There has been an increase in the number of students in the escalating health schools, but it is hard to say that the same rate of increase is observed in the number of teaching staff. The number of people per faculty member was preserved only in medical faculties, increased in faculties of dentistry and pharmacy, and doubled in nursing schools.

It seems that the increase in the number of faculty members despite the increase in the number of institutions will affect the quality of education. According to the available data, the number of students per faculty member in medical faculties was 2.73 in the world and 1.11 in the USA in 2001.<sup>19</sup> According to these data, it can be said that the figure in our country is very low. The fact that the number of teaching staff in nursing schools has not changed according to the increase in the number of institutions and students, this resulted in a doubled number of students, 66 students, per teaching staff.

### Discussion

We examined the change of health care workers employed in Turkey within the framework of the Health Transformation Program. In this section, we will try to evaluate personnel policy, which is one of the significant actors of health system,

on the basis of the principles of justice presented in the theoretical section. The variation and distribution of the number of specialist physician, general practitioner, dentist, midwife, nurse, and pharmacist will be examined in terms of the principles of need, equality, utilitarianism, and equity.

### *The Principle of Need*

Human resources planning is vital in the labor intensive health sector. The question of what planning will basically refer to is the main element of this importance. In this section, we draw attention to the principle of need in the planning of human resources.

The number of physicians has increased year by year since the early 1990s in Turkey. In order to compare the number of physicians with international standards, it is necessary to look at the number of physicians per person. It is clear that there is also an increase from year to year. It appears that there was less increase in the 11 years of the HTP compared to the previous 11 years. However, even after this increase, the OECD average is more than 1.5 times per capita in our country. According to the increase in the number of examinations per physician in our country in 11 years, the increase in the number of physicians is quite limited. Likewise, the fact that the rate of general practitioners falls in the total number of physicians in terms of both the number of examinations per physician and the services provided in primary health care makes the principle of need questionable.

Another area of human resource planning is the change in the number of specialist physicians. Obstetrics and gynecology specialists decreased in the proportion of all physicians, whereas

psychiatry and all surgical branches increased. In this case, we have not found any evidence that we can relate to disease burden or health need.

It can be said that there is no significant increase in the number of dentists per person compared to the increase in the number of applications in dental services. However, in addition to the knowledge that dentistry services are carried out mostly with the private sector in our country, the 100% increase in the number of physicians working within the Ministry of Health can be explained by the principle of need.

Another parameter is related to midwives and nurses providing care, which is considered as one of the main components of health services. It is seen that during the HTP period, when the number of midwives-nurses per capita increased from year to year, it was observed that this number increased more than the previous 11 years. However, the fact that this increase is much lower than both the world average and the OECD average gives the impression that it does not adequately meet our needs. However, the increase in HTP compared to the previous period coincides with the principle of need.

In Turkey, the basic approach related to the conduct of pharmacy services is free pharmacy. With this in mind, the increase in the number of pharmacists per capita both during the HTP period is less than in the previous period and despite this increase it is recorded that it is lower than OECD, WHO European and World average. The answer to the question of whether the increase in the previous period decreased because the needs decreased during the HTP period will show compliance with the principle of need.

The situation of health education is one of the serious problems and dilemmas in our country. While planning health education, on the one hand the number of health care workers in need of the country should be increased, but on the other hand, quality should not be reduced with more students and inadequate physical conditions and instructors. During the HTP period, a significant increase in the number of health institutions in Turkey is provided. This can be explained by the principle of need, but the number of students per instructor has increased, as well. And this raises questions about quality compared to the world average.

### ***The Principle of Equality***

We expect health care workers to be distributed to ensure equality in all regions. When we look at the number of physicians per capita in 2013, we notice that there is a difference between regions. While the Western Anatolia region had the highest average in 2002, it increased again in 2013 and maintained its highest rank. On the other hand, there is a decrease in Istanbul average. One of the data that draws attention here is that this region is the region that provides the highest increase in 11 years, although the physician density in Southeastern Anatolia is at least on both dates. In 2013, the ratio of increase is high in regions in which the number of physicians per population was lower than the average in 2002. Although the same physician density is not attained in all regions, it is seen that one of Rawls' principles of justice which is "the most disadvantaged ones benefit the most" is experienced.

As we have stated, although there is no absolute equality in the number of physicians per population, the average number of applications to physicians per capita is between 7 and 9. This shows that a standard is reached in the citizen's accessibility to the physician and that the principle of equality is more complied.

When we look at the change in the number of physicians in terms of sub-branches, we can assume that one family physician falls for 3800 population in Turkey. In this case, we can say that family physicians are equally distributed to all regions. On the other hand, there is no data on the distribution of sub-specialties of medicine in all regions.

Since family health personnel have to be included in the family medicine system together with family physicians, we can say that this group of employees is equally distributed throughout the country.

With the increase in health schools, the number of students increased considerably. We can express that this situation strengthens regional equality due to equality of opportunity and distribution of schools. However, in the theoretical framework, opportunities that are the basis of equality of opportunity, which is the previous process of equality, primary and secondary education processes should be considered.



### ***The Principle of Utilitarianism***

The principle of upgrading health is the manifestation of the classical utilitarian view in health. Therefore, the main approach we will take is how much services benefit us. An application is true if it yields benefits in total and it is false if it does not.

One of the benchmarks of our study is the OECD averages. Considering welfare focus, which is one of the three basic elements of classical utilitarianism, approaching the OECD average will put the action into the category of beneficial action as it will increase the welfare level. In other words, if the rate of increase between the years is higher than the rate of increase in the OECD average, we can say that we are approaching the high standard of welfare.

The increase in the number of physicians per capita in Turkey when considered together with the increase in the OECD average, the difference in 2013 is less than difference in 2000. The available data show that there is an increase in the density of physicians in our country and according to the first data, our country is converging to the OECD average. Hence, we can say that our progress towards achieving the OECD standard welfare level has improved. On the other hand, the significant increase in the number of examinations per physician as a data showing the availability of physicians, and even higher levels compared to the OECD, coincide with results-oriented and cumulative factors of utilitarianism.

Since 1991, there has been an increase in the number of midwives and nurses per capita in our country. The rate of increase between the years of 2002-2013 in particular, when the HTP was in force, is higher than the rate of increase in the OECD average. Therefore, it can be mentioned that a useful policy is applied in the number of nurses and midwives.

It is difficult to mention that the same level of pharmacist numbers is maintained. In 2002-2013, the rate of increase in the number of pharmacists in our country is below the OECD. Although the partial increase recorded seems to be beneficial for the outcome, it distances us from the principle because it moves away from the high welfare level.

We will evaluate the principle of utilitarianism by comparing the number of students with the number

of schools opened in health education. Our data relate to medical school, dentistry, pharmacy, and nursing schools between 2002-2013. There is an increase between periods in all four educational institutions. However, the highest increase in the number of students according to the number of institutions opened was seen in nursing schools. The most beneficial investment in terms of results seems to be in nursing schools. However, it is not possible for the medical faculties or the faculties of dentistry to increase to the same level as nursing schools due to the difficulty of both the educational processes and the capacity to create physical facilities.

### ***The Principle of Equity***

We said that the number of physicians increased with the HTP. We have some data to see if this increasing number is distributed in accordance with the principle of equity. In Eastern Black Sea, Middle East Anatolia, and Southeastern Anatolia regions, which are known as geographically disadvantaged regions, the number of physicians per capita has increased more than other regions in order to provide "equal opportunities". The number of applications, which are around 2% in terms of the result, approached the country average and remained around 7%.

We do not have access to the data as to whether it is equitable increase in the number of specialist physicians in Turkey. There is no supportive data to suggest that the ratio of practitioners/specialists in 1995 increased in favor of specialists in 2013 and decrease in some basic branches and increase in others is to provide "equal opportunities".

In general, based on the data obtained from physicians, dentists, pharmacists, midwives, and nurses, we can say that there is an increase in per capita numbers. This increase also affects the distribution. It can be said that especially compulsory service practice leads practitioners and specialist physicians to less advantageous areas and thus the principle of equity is complied with. However, although this practice is not the case for health professionals other than physicians, we know that there are some incentives for working in those regions.

### **Conclusion**

It would be appropriate to say that the main component of the health sector is human resources. While the need for manpower is expected to

decrease with the development of technology, today we see that even more specialized manpower is needed. We can say that there are big problems in the distribution of human resources as well as the distribution of physical facilities. These problems which can be addressed within the ethical framework will increase the defensibility in practice. In this study that examines the creation and distribution of human resources within the HTP, we can only estimate that the principle of need is complied with. Because we have not reached clear criteria to determine what is needed. According to the principle of equality, it is possible to say that the planning is done correctly. The increase in the total number and the increase in the per capita distribution of

human resources in particular corresponds to the principle of utilitarianism. Finally, we can say that we have obtained data in line with the principle of equity, as the HTP initially claimed. The subject of the study is to determine concrete criteria such as disease burden especially in determining the need. Otherwise, the lack of reference in the increase or decrease in the number will also affect the defensibility.

In general, it is difficult to fully implement the principle of justice in health policies. However, especially in human resource planning, applying this principle together with the sub-principles is vital for both beneficiaries and healthcare providers.

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