



Letter to editor: about criticisms regarding manuscript entitled “assessment of the impact of public hospital associations (PHAs) on the efficiency of hospitals under the Ministry of Health in Turkey with data envelopment analysis”

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1 Introduction

In the letter written to the editor, it was indicated that it would be more appropriate to use “public hospitals unions – PHUs” rather than “public hospital associations – PHAs” as a criticism.

However, the justification of why it should be such has not been explained. As a matter of fact, when the literature related to the subject in Turkey is examined, it could be seen that there are studies that use the concept of “public hospital associations” [1, 2] and also the concept of “public hospital unions” [3, 4]. Therefore, suggesting that the concept “association” has never been in any other scientific study other than this paper and presenting the concept of “union” instead of this as if that was an established single concept, is not a correct approach. Together with this, if it could be demonstrated with sound justifications that the etymologic, administrative and legal meaning of the concept “union” reflects the practice in Turkey better, no problem is encountered in making a revision in this direction although the concept “association” has passed from the language editing service. However, if this opinion could not be evidenced, saying that the concept “union” should be used in place of “association” will not have any meaning other than saying that “we use in this way, you also should use this way”, which is an imposition and arbitrariness.

In another criticism written to the editor, it was indicated that all Ministry of Health Hospitals were not covered under the

umbrella of PHU after 2012, that despite the hospitals were affiliated to Turkish Public Hospitals Administration under the umbrella of union, small scaled integrated district hospitals were managed by Turkish Public Health Institution, that when the year 2015 specified by the authors is examined, 692 out of 865 MoH Hospitals were under the umbrella of PHU, that 173 hospitals affiliated to Turkish Public Health Institution were not covered under the union umbrella, and it was suggested that the assessment of the authors for post-2012 lead to efficiency scores which were not correct at provincial level.

However, since General Directorate of Health Researches of the Ministry of Health, from where the study data was obtained, did not consider it appropriate to give hospital level data due to corporate sensitivity and provided the data aggregated at the level of provinces, it is not possible to separate the input and output data pertinent to integrated district hospitals and to know the change in the hospitals affiliated to PHAs over years.

Apparently since both inputs and outputs of the integrated district hospitals are very little, it is not considered that this will lead to an important and significant difference in the relative efficiency scores of the provinces. For example, when examined from the point of view of inputs; the total number of beds of integrated district hospitals for 2014 (1763) constitutes 1.4% of the total number of beds of the Ministry of Health (123,690). From the point of view of other input variables, the number of physicians working in integrated district hospitals constitute 9 thousandth of the total number of physicians in this study [5]. Therefore, taking into account the fact that the inputs of integrated district hospitals are around 1% of the total inputs used in this study, it is considered that the fact that the inputs of the integrated district hospitals were not separated from the data of this study will not have a shadowing effect on the relative efficiency scores of the provinces. The nurse + midwife number, which is another input variable other than the number of physicians and beds as covered in this study, does not include

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the nurse + midwife number in the integrated district hospitals. Taking into account the fact that, in the data obtained from the Ministry of Health, the total number of nurses + midwives for 2014 is 102,092 and the number of nurses + midwives working in hospitals affiliated to Public Hospital Associations for year 2014 in the Public Hospitals Annual Statistics published by Public Hospital Institution was 103,788 [5], it could be derived that the number of nurses + midwives used in this study does not cover the number of nurses + midwives working in integrated district hospitals. In relation to the number of other health professionals, which is the fourth and last input variable used in the study, no comparison was made with the number (60,907) used in this study since there was no data in the Public Hospitals Annual Statistics.

When the impact of not separating the outputs of integrated district hospitals from the outputs used in the study is examined; it could be seen that the number of polyclinic admissions at provincial level also includes the polyclinic admissions of integrated district hospitals in those districts, however that the number of polyclinics of integrated district hospitals for 2014 (2,819,083) constitutes only 9 thousandth of the total number of polyclinics (292,100,331) [5]. From the point of view of the inpatients, the total number of inpatients was taken as 7,396,239 for 2014 in the data obtained from the Ministry of Health, and it was indicated in the Public Hospitals Annual Statistics for 2014 of Ministry of Health Public Hospitals Institution that the number of inpatients in hospitals affiliated to Public Hospital Associations was 7,546,269 [5]. Therefore, it could be understood that the inpatient data used in this study does not cover the number of inpatients in integrated district hospitals (3616 patients for 2014). Since the number of operations, which is the third output variable of the study, involved only group A, B and C operations and these operations are only performed in hospitals affiliated to Public Hospital Associations and not done in integrated district hospitals [5], this will not constitute a problem in the calculation of efficiency scores at provincial level. Similarly, the crude mortality rate, which is an last output indicator of the study, will not cause a problem on the relative efficiencies of the provinces since this covers only the patients who died in hospitals affiliated to Public Hospital Associations [5] and did not cover the patients who died in integrated district hospitals.

As a conclusion, since the data could be obtained from the Ministry of Health at province level, it is not possible to separate the data of integrated district hospitals. On the other hand, as could be understood from the remarks indicated above, taking into account the facts that only the number of polyclinic admissions out of the four output variables used in the study included the number of polyclinic admissions of integrated district hospitals and the polyclinic numbers of integrated district hospitals are below even 1% of the total number of polyclinics, and that the data related to the number of inpatients, number of operations and crude mortality rate of the study did not include the data of the integrated district hospitals, it is considered that

these will not cause any problem in the efficiency scores calculated at the level of provinces. In relation to input variables of the study, since the number of beds and number of physicians, which are among the four input variables, included the numbers of beds and physicians in the integrated district hospitals and that the number of beds and physicians in the integrated district hospitals was around 1% of the total number of physicians and beds, that the study data related to nurse + midwife variable did not include the data of the integrated district hospitals, and that there was no data in the published report in relation to the number of other staff, it is understood that it is not clear whether the data of the study related to other health staff variable includes data on other health staff working in integrated district hospitals. Besides, since the integrated district hospitals are present in 81 provinces overall Turkey, namely there is no situation wherein these are present in some provinces and not present in the others, it is not possible that this could play a confounding factor role on the results of the study.

In another criticism communicated to the editor in relation to the paper was as follows: It was indicated under the scope of the study that there were 865 hospitals affiliated to MoH, however, this was not possible periodically. Despite the fact that there were 865 hospitals managed by MoH in 2015, it was stated that this number was 840 in 2011 and 832 in 2012. As a conclusion, it was indicated that the methodology of the study was problematic, and when 89 PHU is considered instead of province as the decision making unit, a healthier evaluation could be made both before and after PHAs (which although the critics indicated that they did not consider it suitable to use PHAs, they have also used the concept PHAs while making this criticism).

Although this criticism seems to be a fair criticism at first sight, since the data obtained from the Ministry of Health is at the level of provinces, namely included the data for years 2010–2015 pertinent to the study variables in 81 provinces in Turkey, it is not possible to separate the integrated district hospital data from this data and to see the change in the number of hospitals over years. For that reason, it was sufficient to indicate only that the study covered 865 MoH [6] hospitals.

Besides, it was recommended that the study methodology was problematic and PHAs should be taken into account rather than the provinces as the decision making unit in the study in order to reach to healthier results. However, Malmquist Total Factor Efficiency Index has been calculated in order to compare the efficiency scores of provinces in accordance with the purpose of this study over consecutive years. According to this, in order to calculate the relevant index, the number of decision units should be equal over years. If the situation was that PHAs would be taken, not the provinces, as the decision making unit upon the recommendation of the critic, it would not have been possible to make such a comparison since there was no PHAs practice in 2010–2012 period. Besides, if PHAs were taken as the decision making unit, since there was no

PHAs implementation in 2010–2012 period, comparing the period 2013–2015 when there were 89 PHAs with 2010–2012 period (making the analysis in Table 5 in the paper) would not be possible, namely it would not be possible to demonstrate the impact of PHAs implementation on efficiency. In fact, if hospitals had been taken as the decision making unit, a stronger study would have been done from methodological perspective. As a matter of fact, the authors of this manuscript had designed such a study at the beginning and tried to acquire data on the level of hospitals from the Ministry of Health, however, since the data could not be obtained at hospital level, they directed towards designing a study in which the decision unit is the provinces.

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