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The Evaluation of DRG Application from The Point of Healthcare Managers in Turkey

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ABSTRACT

The Diagnosis Related Groups (DRG) have been commonly used by the hospitals to calculate the cost and as a reimbursement model by the paying institutions since 1970s. There has been some research on the DRG since 2005, and in 2010, the Ministry of Health in Turkey adopted it as the reimbursement model. In order to conduct a successful DRG research, it is important to analyse research findings worldwide, and determine the DRGs and relative values in accordance with the conditions of the country and carry out a continuous monitoring and evaluation.

The study at hand aims to understand the healthcare managers' attitude towards the DRG practice, which has been widely used in state hospitals since 2005. In this study, in order to establish an evaluative process, a questionnaire was given to 72 healthcare managers who work in state hospitals and under Istanbul North Anatolian Region State Hospitals General Secretary between the dates February 15 and April 1, 2017. The data have been analysed and the healthcare managers reported positive attitudes towards DRG reimbursement system.

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INTRODUCTION

DRG; is an inpatient classification system which includes a group of diseases using clinical and cost data and assigning similar diseases to similar group (Balanlı, 2010). DRG groups the disease procedures. Treatment costs are determined as a relative value (Öztürk, 2014). Source data are distributed fairly according to the type and case intensity (Ayanoğlu, Beylik, & Orhan, 2014). The DRG system encourages to the hospitals to increase efficiency and effectiveness and helps to collect meaningful clinical data (Başara, 2015). These are shown in figure 1 and is grouped under 4 headings as pre-evaluation, assignment of major diagnostic classification (MTS), field assignment, and determined DRG system (Başara, 2015).

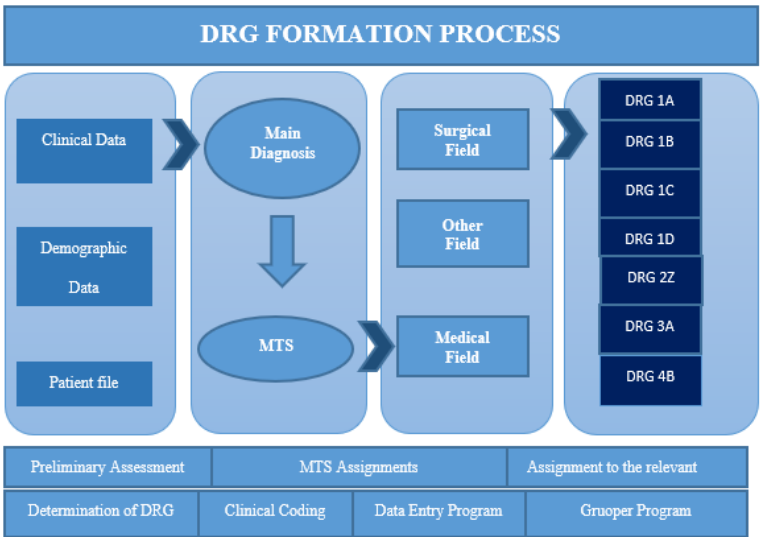

Figure 1: DRG Formation Process (Başara, 2015).

During the preliminary assessment, the data are collected and analysed in detail. This consideration is divided into 3 titles, such as patient file, demographic data, and clinical data. The patient file should be examined to the smallest details, and the coding should be started

after the file is fully evaluated. One of the most important points is to be considered in this section must not be based on a document referred to, such as epicrisis or patient summary reports when examining the patient file.

All file data should be carefully examined. Information about the principal diagnosis, treatment of diagnosis, and coding of procedures can be found in the file data, except epicrisis files. Clinical data becomes ready for coding after the detailed examination (Başara, 2015). All the fields such as demographic data, gender, age of the patient, length of hospital stay, type of hospital stay, number of days in intensive care unit, number of days of leave, and the weight of hospitalization must be filled. These data have an important role in determining the appropriate DRG code to the case.

In the MTS assign, it includes the steps that run through the Data Entry Program of the system after the cases to be coded in the pre-evaluation section.

As a result of the coding of other factors affecting diseases and health conditions, in accordance with the main diagnosis, these are assigned to 25 MTS. This is done by an algorithm based on additional diagnosis and procedures.

Site assignment is based on the type of procedure performed for existing diagnoses or other conditions detected in the patient. In the DRG data set, there are 3 different fields such as medical, surgical, and others. The medical field consists of patient groups that do not involve surgical intervention and hospitalizations for the treatment of internal organs of the body. The surgical field is the case which surgical operations such as repairing the structural disorders in the body by surgery, cutting and healing the diseased organ are performed. The other area is the procedure that involves simple non-operative interventions performed on the same day (Başara, 2015).

The main diagnoses assigned to related areas such as detection of DRG and field assignment are then assigned to the relevant DRG groups considering the presence of

additional diagnoses, complications, and comorbidities. Each DRG generic code structure is divided into the first section, the second section, and the third section.

The first section consists of a letter and shows the MTS group to which DRG belongs. The second section shows which domain the DRG belongs to. It consists of numbers ranging from 01 to 99. The third section shows the degree of resource utilization. It consists of letters A, B, C, D, and Z (Başara, 2015).

Even though the DRGs have always been regarded and widely used as a reimbursement system, the main reason why it was developed is to compare and contrast cost-based performance. In Reimbursement by Payment Per Transaction Model, a fixed amount of money is paid for each service; however, in the Reimbursement by Case Model, which is primarily adopted by the DRG, a predetermined amount according to relative value is paid per case or illness covering all services included in the treatment process. The main reason behind this is the assumption that once treatment processes are similar in cases, it is likely to use a similar amount of resources for the treatment services. Therefore, the confusion brought about by thousands of procedures has been minimized, and a model has been developed for hundreds of cases. On the other hand, reducing the number of reimbursement actions is not the only change brought by the DRG.

It takes into consideration that hospitals offering services on a variety of cases would have higher cost rates per case and it makes more reimbursement to the hospitals offering services on more variety of cases than the hospitals offering less variety of cases using case complexity index. This is achieved by a parameter called the case complexity index (Akdağ, 2011).

DRG Studies in Turkey

There had been different social security systems available to workers, tradesmen, and civil servants in Turkey until the year 2006. However, Reimbursement by Payment Per Transaction

Model was being used across social security systems. Government Retirement Fund, which reimbursed the retired civil servants, used to use a reimbursement model called Budget Practice Direction (BPD). As a part of the Health Transformation Program (HTP), Social Security Institution (SSI) was founded in 2006, and all public reimbursement institutions were gathered under the SSI (Aksoy, 2017). In 2006, the social insurance law number 5510 was introduced, and all individuals (even though they have separate private health insurance) are offered social security through General Health Insurance (GHI) (Tükel, 2010). In order to manage provisions more easily, an electronic provision system called MEDULA was developed by SSI and was put in use in 2007 (*Official Gazette*, 2009).

Along with HTP, there were actions not only to unite reimbursement systems but also to overhaul reimbursement models. In line with this, Ministry of Health, Ministry of Finance, Ministry of Labour and Social Security and Hacettepe University signed on a protocol of cooperation in 2005 and started to work through the research project (HURP) (Arslan, 2015).

In this project, there had been a meticulous work to gather and enter clinical data in 8 different hospitals, to group clinical data under DRGs, to model cost and resource data use for each available DRG as well as training and dissemination. Along with the process, 40 more hospitals were included in the DRG research. In the following stage of the project, 15 hospitals were chosen out of 48 hospitals, and DRG was begun to be piloted (Balanlı, 2010). As one of the first outcomes of this project, in accordance with Budget Practice Direction (BPD), starting from 01.07.2015, it became compulsory to specify 'Name of the Class and Code of Disease,' which are given in the International Statistical Classification of Diseases and Health Related Problems ICD-10, on the healthcare bills. Up until February 9 in 2005, healthcare services covered by SSI had been paid by BPD. For the same purpose, a new budget direction to reimburse health institutions was published in the official gazette in the

issue 27532 on February 9, 2005. This direction was called Health Application Communique (HAC) (Kaptanoğlu, 2011).

Even though the compulsory ICD-10 classification system and development of HAC were important improvements, the ultimate goal of HURP was to determine a set of diagnosis-related group specific to Turkey and decide on a relative value calculated according to local costs for the localized use of DRGs. As HURP failed to establish a DRG system specific to Turkey, the SSI reimbursement system MEDULA had to continue making payments based on HAC. However, the Ministry of Health set off the search for alternative solutions as the Reimbursement by Payment Per Transaction Model was becoming more difficult to manage by day. This intensive work by the Ministry of Health in 2009 was carried out in the DRGs Branch Office. Eventually, in the same year (2009) through the law number 5510 and 'the agreement on lump sum services purchase' signed by the Social Security Institution and Ministry of Health, the Global Budget was carried into practice. The funding given to state hospitals for healthcare services was transferred to the budget of the Ministry of Health In Lieu of Social Security Institution. In the DRG research carried out by the Ministry of Health, the Australian model was adopted. For the diagnosis classification, ICD10-AM (International Classification of Diseases, Australian Modification) 4th Update was used. As for the DRG algorithm, AR DRG (Australian Refined DRGs: algorithm assigning the groups) version 5.1 was used. As of April 2014, purchase of licenses for ICD-10 AM (7.0) and AR-DRG (6.0) versions have been verified (Akdağ, 2011). In the year 2012, under the roof of Health Services General Directorate, Department of DRGs was founded to continue the work.

2004-2006 (HÜAP)	7 Hospital
2006-2008 (HÜAP)	48 Hospital
2009 Ministry of Health	50 Hospital
2010	260 Hospital
2011	550 Hospital
2012	DRG Head of Departments
2013-2014	523 Hospital

Figure1: Ministry of Health DRG Process (Tengilimoğlu, Dilaver Akbolat and Işık, 2017)

As it can be seen in Figure 2, the Ministry of Health has been gathering hospital discharge data and determines the DRG group of the given services using the grouper program. The case complexity index calculated using the set of DRG data retrieved from DRG is employed to decide on the amount of payment to be made to the hospitals. In-patient diagnoses and treatments are recorded through clinical codes in the DRG system. In addition to this system, a unified structure has been developed to gather data from outpatients and day patients encompassing all the medical services provided. Besides DRG based reimbursement system, other groups have been defined, i.e., for outpatients in clinics 'Outpatients Specialty Clinic Groups' (OSCG) and for day patients who have been treated with a prescribed treatment plan 'Treatment-based Outpatient Groups' (TBOG) (Akdağ, 2011). It is observed that there is no research or action regarding the DRG in the private healthcare sector as the DRG research in the public sector continues. Private health insurance sector seemed to have gone through a period of stagnation and regression between the years of 1999 and 2000.

In order to resolve the regression and induce private health insurance, 'the Bank and Insurance Transaction Tax' on private health insurance was revoked by law number 4697 on

07.11.2011. Thus, the insurance premium paid by the insurance holder was reduced by 5%. In line with these improvements, the number of private health insurance holders increased between the years 1997 and 2002 (İstanbulluoğlu, Güleç and Oğur, 2010). According to the statistics in 2015, there were 912.792 registered private health insurance holders in Turkey.

As for the reimbursement model, in the private health insurance sector, provision-based Reimbursement by Payment Per Transaction Model has been used. In order to determine and price the services items, they refer to nationwide used services and price lists (including Turkish Medical Association services and price list, Health Application Communique [(HAC) and so on] as well as current account lists of private hospitals. As the private health insurance sector adopts the provision per services rule, it will require some essential changes in the provision procedures when the DRG is put into practice in the private sector as well because this model of reimbursement operates on a set of data after a patient is discharged.

There was a lot of academic research carried out on the DRG in order to support the developments in the public and private health sector. Some of this research was devoted to cost analysis (Ayanoğlu et al., 2014, Arslan, 2015, Arık Özer, 2016, Yiğit, 2015) and others were about the use of DRG on the comparative performance assessment (Avcil, Beylik and Doluküp, 2012, Demir, Beylik, Öztürk and Doluküp, 2012, Bulut, 2016, Demir et al., 2012 of COPD cases. There was also survey research in 2014 to gauge the health care managers' attitudes towards the DRG (Ersoy, 2014).

The article at hand continues as follows: in the methodology part of the article, the place of study, data collection, reliability of the questionnaire, and the analysis of the data were discussed. In the findings, the results retrieved from ANOVA, Mann-Whitney-U, Kruskal Wallis Test, and unpaired t-test were provided.

METHODOLOGY

This study at hand aims to understand healthcare managers' attitude towards the DRG practice, which has been widely used in state hospitals since 2005. In this part, the approach and methods employed are discussed.

The Place of Study

This study was carried out between the dates 15.02.2017 and 01.04.2017 in the state hospitals under the Istanbul North Anatolian Region State Hospitals General Secretary to find out the healthcare managers' attitudes towards the DRG reimbursement system using a questionnaire as the data collection tool.

Within the scope of this study, 72 healthcare managers in 10 different hospitals were given a questionnaire. The hospitals in this study are:

1. Beykoz State Hospital,
2. Üsküdar State Hospital,
3. Validebağ Hospital,
4. Erenköy Physiotherapy and Rehabilitation Center,
5. Fatih Sultan Mehmet Training and Research Hospital,
6. Haydarpaşa Numune Training and Research Hospital,
7. Ümraniye Training and Research Hospital,
8. Sultan Abdülhamid Han Training and Research Hospital,
9. Siyami Ersek Thoracic and Cardiovascular Surgery Training and Research Hospital,
10. Erenköy Mental and Neurological Disorders Training and Research Hospital,

Data Collection

While creating the format of questionnaire, the questionnaire employed in the unpublished master's thesis titled 'Diagnosis-related groups a retrospective payment model

(DRG) and evaluating the views of health managers about this method' by Zekiye Ersoy was utilized (Ersoy, 2014).

The questionnaire employed consists of two sections. In the first section, there were questions regarding age, gender, the title of position, years of employment, and training on the DRG, directed at 72 healthcare managers. In the second section, the questions were aimed to have healthcare managers to evaluate the DRG Reimbursement System, Clinical Activities, Clinical Coding, Health Policies, and Managerial Decisions as well as the Management of Healthcare Services. In order to evaluate the healthcare managers' attitudes towards the DRG under these five subsections, 5-point Likert (I do not agree, I agree a little, I agree moderately, I agree and I totally agree) scale to measure the level of agreement was used.

Reliability of Data

The reliability of the given questionnaire was measured through Cranbach's Alpha coefficient, and it was found 0.790- 0.947. This value falls between the range of 0.60 <a <0.80 and 0.80 < a < 1.00, which is esteemed reliable (Ersoy, 2014).

Analysis of Data

Data was gathered between the dates 15.02.2017 and 01.04.2017, and it was analysed on IBM SPSS 22.0 data analysis program. The qualitative data in the questionnaire were evaluated as number (n) and percentage (%). In normally distributed data, while comparing two groups, unpaired t-testand more than two groups ANOVA test were used in order to test the hypotheses to understand whether the averages between groups are statistically significant or not. For the variables, which were not in the normal distribution curve, Kruskal Wallis Test was used. As for the paired comparison, Mann-Whitney-U Test was employed, and the criteria for statistical significance was adopted as p<0,05. Homogeneous distribution of data

Kolmogorov Smirnov test was used to see if it shows. The result of the test $p = 0.047$ was found. It was understood that the data did not show homogeneous distribution since $p < 0.05$.

RESULTS AND DISCUSSION

The results show that the number of female and male healthcare managers are equal, i.e., 50% male and 50% female. 33.3% of them are between the ages of 36 and 40. 63.9% works in Training and Research hospitals. As for the positions held by the managers in this study, 38.9% of them works as the deputy manager in the hospital. Finally, 52.2% of the participants work in the healthcare sector from 11 to 20 years. It is observed that 43.1% of 72 participants received training on DRG Reimbursement Systems. 30 (73.0) of 41 (56.9%) participants who did not receive any training reported a need for some training/educational sessions; however, 11 of those (27.0%) reported no need for training or educational sessions. It is also noted that when the positions and titles are considered, deputy chief physicians and deputy managers did not attend an educational session or receive any training, which can be explained by the fact that there was a chief physician who is in charge of DRG in each hospital and they were the ones who had received training.

Table 1: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG as Reimbursement System and Clinical Activities with Regard to Type of Hospitals

	Hospital Type	n	Average ($\bar{x}$)	Standard Deviation (sd)	F	p
Evaluation of DRG System in terms of Reimburse ment	**Public Hospital**	**20**	**31,20**	**4,420**	**1,208**	**0,305**
	Training and Research Hospital	**46**	**28,89**	**6,019**		
	University Hospital	**6**	**29,00**	**5,932**		
	Total	**72**	**29,54**	**5,634**	**1,208**	**0,305**
Evaluation of the DRG System in terms of Clinical Activities	**Public Hospital**	**20**	**25,25**	**6,858**	**1,580**	**0,213**
	Training and Research Hospital	**46**	**22,78**	**5,936**		
	University Hospital	**6**	**26,00**	**4,604**		
	Total	**72**	**23,73**	**6,171**	**1,580**	**0,213**

Table 1 shows the distribution of the level of participation in the questions regarding the Evaluation of the TIG System in terms of Reimbursement and Clinical Activities.

When the type of hospitals is considered for the level of agreement with the statements evaluating the DRG as Reimbursement System and Clinical Activities, the highest level of agreement belongs to the healthcare managers in the universities. This is followed by healthcare managers in State Hospitals ($\bar{x}$ =25.25, sd=6.858), and finally, the lowest level of agreement belongs to the healthcare managers in Training and Research Hospitals. In order to understand whether there is a statistically significant difference between the type of the hospitals and the level of agreement with the statements evaluating the DRG as Reimbursement System and Clinical Activities, the evaluation of DRG Reimbursement System and Clinical Activities is addressed, ($p>0,05$). Therefore, no statistically significant difference is observed between the responses to two main set of questions with regard to groups (types of hospitals).

Table 2: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG Reimbursement System in Terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with Regard to Type of Hospitals

	Hospital Type	n	Mean Rank	KW	p
Evaluation of in terms DRG Medical Coding	**Public Hospital**	20	41,70	7,301	**0,026***
	Training and Research Hospital	46	31,61		
	University Hospital	6	53,60		
Evaluation of the DRG System in Terms of Health Policies and Managerial Decisions	**Public Hospital**	20	45,53	10,269	**0,006****
	Training and Research Hospital	46	30,67		
	University Hospital	6	51,08		
Evaluation of the DRG System in terms of Health Services Management	**Public Hospital**	20	42,43	3,407	0,182
	Training and Research Hospital	46	33,09		
	University Hospital	6	42,92		
*p<0,05 **p<0,01					

Table 2 shows the distribution of the level of agreement with the statements evaluating the DRG Reimbursement System in terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with regard to Type of Hospitals. There found a statistically significant difference between the level of agreement with the statements regarding Clinical Coding, Health Policies, and Managerial Decisions, and the type of hospitals as the p values were lower than 0.05 (0.026 – 0.006). As for the level of agreements with the statements regarding the Management of Healthcare Services and the type of hospitals, there was no statistically significant difference as p-value was higher than 0.05.

Table 3: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG Reimbursement System and Clinical Activities with Regard to Title of Positions in the Hospital

	Job Title	n	Average ($\bar{x}$)	Standard Deviation (sd)	F	p
Evaluation of DRG System in terms of Reimbursement	**Chief Physician and Chief Physician**	22	30,36	4,685	0,501	0,683
	Hospital Director	10	30,1	5,665		
	Hospital	29	28,55	6,050		

	Job Title	n	Average (x̄)	Standard Deviation (sd)	F	p
	Assistant Manager					
	Unit Responsible	11	30,00	6,557		
Evaluation of the DRG System in terms of Clinical Activities	**Chief Physician and Chief Physician**	**22**	**23,03**	**6,487**	0,121	0,947
	Hospital Director	10	24,10	6,806		
	Hospital Assistant Manager	29	24,10	6,166		
	Unit Responsible	11	23,72	5,693		
*p<0,05 **p<0,01						

Table 3 shows the distribution the level of agreement with the statements evaluating the DRG Reimbursement System and Clinical Activities with regard to Title of Positions in the hospital. The highest average of the level of agreement with the statements about DRG Reimbursement System belongs to Chief Physicians/Deputy Chief Physicians (x̄ =30.36, sd=4.685). The following highest averages belong to Managers of University Hospitals (x̄=30.1, sd=6.557), Unit Supervisors (x̄ =30.0, sd=6.557), and the lowest average belongs to the Hospital Deputy Managers (x̄=28.55, sd=6.050). Once the evaluation of DRG with regard to Clinical Activities is addressed, the highest average belongs to Hospital Manager and Hospital Deputy Managers (x̄ =24.10, sd=6.806). This is followed by the average belonging to Unit Supervisors (x̄ =23.72, sd=5.693), and the lowest average belongs to Chief Physicians/Deputy Chief Physicians (x̄ =23.03, sd=6.487). When the evaluation of DRG Reimbursement System and Clinical Activities is addressed, p values (0.683- 0.947) are higher than 0.05. Therefore, no statistically significant difference is observed between the groups.

Table 4: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG Reimbursement System in Terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with Regard to Title of Positions in the Hospital

	Job Title	**n**	**Average Order**	**K W**	**P**
Evaluation of in terms DRG Medical Coding	**Chief Physician and Chief Physician**	22	32,45	1,094	**0,778**
	Hospital Director	10	39,39		
	Hospital Assistant Manager	29	36,69		
	Unit Responsible	11	38,50		
Evaluation of the DRG System in Terms of Health Policies and Managerial Decisions	**Chief Physician and Chief Physician**	22	39,07	2,082	**0,556**
	Hospital Director	10	42,75		
	Hospital Assistant Manager	29	33,14		
	Unit Responsible	11	34,55		
Evaluation of the DRG System in terms of Health Services Management	**Chief Physician and Chief Physician**	22	37,20	1,870	**0,600**
	Hospital Director	10	39,85		
	Hospital Assistant Manager	29	32,83		
	Unit Responsible	11	41,73		

Table 4 shows the distribution level of agreement with the statements evaluating the DRG Reimbursement System in terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with regard to Title of Positions in the hospital. For the level of agreements with the statements regarding the Clinical Coding, Health Policies and Managerial Decisions, and the Management of Healthcare Services and the title of the positions, there is no statistically significant difference as p values are higher than 0.05 (0.778 – 0.556 – 0.600).

Table 5: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG Reimbursement System in Terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with regard to Years of Employment

	Operation Time	**n**	**Average ($\bar{x}$)**	**Standard Deviation (sd)**	**F**	**p**
Evaluation of DRG System in terms of Reimbursement	**1-10 Year**	11	27,81	6,867	1,534	0,213
	11-20 Year	39	28,92	5,926		
	21-30 Year	17	31,88	4,075		
	31-40 Year	5	30,20	3,114		
	Toplam	**72**	**29,54**	**5,634**	**1,534**	**0,213**
Evaluation of the DRG System in terms of	**1-10 Year**	11	23,00	6,449	**0,184**	0,907
	11-20 Year	39	23,84	6,523		
	21-30 Year	17	24,35	5,894		
	31-40 Year	5	22,40	4,827		

Clinical Activities	**Total**	**72**	**23,73**	**6,171**	**0,184**	**0,907**
Evaluation of in terms DRG Medical Coding	**1-10 Year**	11	20,81	2,143	1,473	0,230
	11-20 Year	39	24,15	0,792		
	21-30 Year	17	23,88	1,242		
	31-40 Year	5	21,00	2,529		
	Total	**72**	**23,352**	**0,644**	**1,473**	**0,230**
Evaluation of the DRG System in Terms of Health Policies and Managerial Decisions	**1-10 Year**	11	19,36	6,004	1,426	0,243
	11-20 Year	39	23,10	5,660		
	21-30 Year	17	22,17	4,333		
	31-40 Year	5	24,20	8,814		
	Total	**72**	**22,38**	**5,725**	**1,426**	**0,243**
Evaluation of the DRG System in terms of Health Services Management	**1-10 Year**	11	22,00	5,385	1,731	0,169
	11-20 Year	39	26,00	5,316		
	21-30 Year	17	26,17	6,287		
	31-40 Year	5	23,20	8,348		
	Total	**72**	**25,23**	**5,873**	**1,731**	**0,169**

Table 5 shows the distribution the level of agreement with the statements evaluating the DRG Reimbursement System in terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with regard to Years of Employment.

The highest average of the level of agreement with the statements about DRG as the Reimbursement System belongs to the healthcare managers working between 21 and 30 years ($\bar{x}$ =31.88, sd=4.075). This is followed by the healthcare managers with 31 to 40 years of experience ($\bar{x}$=30.20, sd=3.114), the healthcare managers with 11 to 20 years of employment ($\bar{x}$ =28.92, sd=5.926) and the lowest average belongs to the healthcare managers working 1 and 10 years ($\bar{x}$ =27.81, sd=6.867). Once the evaluation of the DRG as Reimbursement System in terms of Clinical Activities and the years of employment is addressed, the highest average belongs to the healthcare managers with 21 to 30 years of employment ($\bar{x}$ =24.35, sd=5.894). This is followed by healthcare managers working between 11 and 20 years ($\bar{x}$ =23.84, sd=6.523), healthcare managers who have from 1 to 10 years of experience ($\bar{x}$ =23.00,

sd=6.449) and the lowest average belong to the healthcare managers with 31 to 40 years of employment ($\bar{x}$ =22.40, sd=4.827).

As the evaluation of the DRG as Reimbursement System in terms of Clinical Coding and the years of employment is considered, the highest average belongs to the healthcare managers with 11 to 20 years of employment ($\bar{x}$ =24.15, sd=0.792). This is followed by healthcare managers with 21 to 30 years of employment ($\bar{x}$ =23.88, sd=1.242), the healthcare managers working between 31 and 40 years ($\bar{x}$ =21.00, sd=2.529) and the lowest average belongs to the healthcare managers who have from 1 to 10 years of experience ($\bar{x}$ =20.81, sd=2.143).

As for the evaluation of the DRG as Reimbursement System in terms of Management of Healthcare Services and the duration of employment, the highest average belongs to the healthcare managers with 21 to 30 years of employment ($\bar{x}$ =26.17, sd=6.287). This is followed by healthcare managers with the employment of 11 to 20 years ($\bar{x}$ =26.00, sd=5.316), healthcare managers with the employment of 31 to 40 years ($\bar{x}$ =23.20, sd=8.348) and finally the lowest average belongs to the healthcare managers with 1 to 10 years of employment ($\bar{x}$=22.00, sd=5.385). When the evaluation of Reimbursement, Clinical Activities, Clinical Coding, Health Policies, and Managerial Decisions and the Management of Healthcare Services are analysed, there found no statistically significant difference between the groups as the p values (0.213- 0.907- 0.230- 0.243 – 0.169) are higher than 0.05.

Table 6: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG Reimbursement System and Clinical Activities with Regard to Receiving Training on the DRG

	Participation in Information Meeting and Training /Non-Participation Status	n	Average (sd)	Standard Deviation	T	P
Evaluation of DRG System in terms of Reimbursement	**I attended training / I got training**	31	28,70	6,111	1,091	0,279
	I did not attend training / I didn't get training	41	30,17	5,234		
Evaluation of the DRG System in terms of Clinical Activities	**I attended training / I got training**	31	22,16	5,190	1,918	0,059
	I did not attend training / I didn't get training	41	24,92	6,634		

Table 6 shows the distribution level of agreement with the statements evaluating the DRG as a Reimbursement System and Clinical Activities with regard to Receiving Training on the DRG. When the Reimbursement is considered, p values (0.279) are higher than 0.05. Thus, there is no statistically significant difference found between the groups.

Table 7: Analysis of (Healthcare Managers) Participants' Level of Agreement with the Statements Evaluating the DRG Reimbursement System in Terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with Regard to Receiving Training on the DRG

	Participation in Information Meeting and Training /Non-Participation Status	n	Average Order	U	P
Evaluation of in terms DRG Medical Coding	**I attended training / I got training**	31	3,25	532,500	0,335
	I did not attend training / I didn't get training	41	38,01		
Evaluation of the DRG System in Terms of Health Policies and Managerial Decisions	**I attended training / I got training**	31	35,31	598,500	0,673
	I did not attend training / I didn't get training	41	37,40		

Evaluation of the DRG System in terms of Health Services Management	**I attended training / I got training**	31	34,87	585,000	0,565
	I did not attend training / I didn't get training	41	37,73		

Table 7 shows the distribution level of agreement with the statements evaluating the DRG as a Reimbursement System in terms of Clinical Coding, Health Policies and Managerial Decisions and Management of Healthcare Services with regard to Receiving Training on the DRG.

When the evaluation of Reimbursement, Clinical Activities, Clinical Coding, Health Policies, and Managerial Decisions and the Management of Healthcare Services are analyzed, no statistically significant difference was found between the groups as the p values (0.335- 0.673- 0.565) are higher than 0.05.

CONCLUSIONS

The research findings retrieved from the questionnaire-based study conducted in 72 hospitals in İstanbul in 2017 bore a major resemblance to the study conducted in 80 hospitals in Sivas in the year 2014 by Ersoy. These findings are significant as they indicate there was no change in the healthcare managers' attitude towards DRG in the almost 4 years passed. There is no comparison with other studies.

The study within the scope of the research is compared with the study conducted by Ersoy in 2014. This comparison consists of four parts. This parts are expressed as Evaluation of DRG System in terms of Reimbursement, Evaluation of the DRG System in terms of Clinical Activities, Evaluation of in terms DRG Medical Coding, Evaluation of the DRG System in Terms of Health Policies and Managerial Decisions, Evaluation of the DRG System in terms of Health Services Management.

In the first part, in the study conducted in 2014, participants were asked 8 questions. 70.5% of the administrators participated in the statement "The DRG-based reimbursement system has a more flexible structure than other payment methods", 29.5% disagreed with this statement. The participation rates in other questions ranged between 78.2% and 92.3% (Ersoy, 2014). As for in the study in 2017, participants were asked 8 questions in this section. 74% of the administrators participated in the statement "The DRG-based reimbursement system has a more flexible structure than other payment methods" participated in the statement, 25% disagreed with this statement. The participation rates in other questions ranged between 82% and 98.1%. The two studies were compared in terms of Evaluation of DRG System in terms of Reimbursement and this conclusion was reached. Considering the content and participation rate of the questions in this dimension, the participants thought that the DRG Reimbursement System was not flexible in both studies. In addition, considering the other questions, it is seen that they use health care expenditures in hospitals to control costs.

In the second part, in the study conducted in 2014, participants were asked 6 questions. The degree of participation of the questions contained herein varied between 75.6% and 91.1% (Ersoy, 2014). As for the study in 2017, participants were asked 6 questions in this section. The degrees of participation in all other expressions other than “The desire of service providers to increase their revenue can lead to a more complex diagnosis than the patient has.” are between 61.1% and 83.4%. The two studies were compared in terms of Evaluation of the DRG System in terms of Clinical Activities and this conclusion was reached. In a study conducted in 2017, it was seen that hospital administrators did not think that the service providers' desire to increase their income could cause them to make a more complicated diagnosis than they had. Considering the content and participation rate of the other questions, it was observed that the medical coding quality was improved, and the health analysis became more reliable in the implementation of the DRG System in both studies.

In the third part, in the study conducted in 2014, Participants were asked 7 questions in this section. The participation rate of the executives participating in the survey was between 52.6% and 66.7% (Ersoy, 2014). As for the study in 2017, participants were asked 7 questions in this section. In the survey study, participation rates for these statements were between 68% and 87.2%. The two studies were compared in terms of Evaluation of in terms DRG Medical Coding and this conclusion was reached. Considering the content and participation rate of the questions in this dimension, it was concluded that the health expenditures will be more balanced in the health expenditures by the DRG system according to the answers of the participants in both studies. In addition, it was concluded that the DRG will allow comparison between countries and the available resources will be appropriately distributed.

In the fourth part, in the study conducted in 2014, participants were asked 7 questions in this section. In the survey study, the rate of participation in these statements was between 21.8% and 62.8% and participation rates were quite low (Ersoy, 2014). As for the study in 2017, participants were asked 7 questions in this section. In the survey study, the rate of participation in these statements was between 12.5% and 38.9% and participation rates were quite low. The two studies were compared in terms of Evaluation of the DRG System in Terms of Health Policies and Managerial Decisions and this conclusion was reached. Considering the content and participation rate of the questions in this dimension, it was seen that the cost of increasing productivity increased with the participants' DRG System in both studies.

In the fifth part, in the study conducted in 2014, participants were asked 7 questions in this section. In the survey study except for the statement "This system is very complex and difficult in terms of management and implementation" the participation levels of the managers are 60.3% with 83.3% among all other statements (Ersoy, 2014). As for the study in 2017, participants were asked 7 questions in this section. In the survey study except for the

statement "This system is very complex and difficult in terms of management and implementation" the participation levels of the managers were 58.3% with 70.8% among all other statements. The two studies were compared in terms of Evaluation of the DRG System in terms of Health Services Management and this conclusion was reached. Considering the content and participation rate of the questions in this dimension, it was seen that the cost of increasing productivity increased with the participants' DRG System in both studies.

REFERENCES

Aksoy, K. (2017). EURODRG ve Dünyadaki Diğer TİG Uygulamaları Işığında Türkiye'deki TİG Uygulamaları ve TİG Üzerinde Sağlık Yöneticilerin Görüşlerinin İncelenmesi. İstanbul Medipol Üniversitesi, Sağlık Bilimler Enstitüsü, İstanbul.

Aslan, H. (2015). Ankara Numune Eğitim ve Araştırma Hastanesi'nde İşlem Maliyetleri, Fatura Bedelleri ve Teşhis İlişkili Gruplara Dayalı Maliyet Analizi, Hacettepe Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara

Avcil, M., Beylik, U., Doluküp, İ. (2014). Sağlık hizmetlerinde teşhisle ilişkili gruplar: KOAH vakaları üzerine karşılaştırma. Sağlıkta Performans ve Kalite Dergisi, 7, 21-42.

Ayanoğlu, Y., Beylik, U., Orhan, F. (2014). Tanı İlişkili Gruplara (DRG) Göre Hastaneler Ve Ülkeler Arası Karşılaştırma: Bir Vaka Örneği. Elektronik Sosyal Bilimler Dergisi, 13, 273-290

Bakanlığı, S. (2011). TIG Uygulama Rehberi. Tedavi Hizmetleri Genel Müdürlüğü Performans Yönetimi ve Kalite Geliştirme Daire Başkanlığı. Ankara: Pozitif Matbaa.

Balanlı, M. (2010). Ödeme Kuruluşları Açısından TİG (DRG) ve Önemi Ödeme Modelleri. Sosyal Güvenlik Kurumu. https://docplayer.biz.tr/12509881-Odeme-kuruluslari-acisindan-tig-drg-ve-onemi.html
Başara, Ü. (2015). 2015_TİG Nedir? Sosyal Güvenlik Uygulamaları. https://tig.saglik.gov.tr/TR,6269/teshis-iliskili-gruplar-tig.html

Bulut, Ö. (2016). Hekim performansının teşhis ilişkili gruplara dayalı ödemesi. Atılım Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Demir, M., Beylik, U., Öztürk, M., Doluküp, İ. (2013). Sağlık hizmetlerinde teşhisle ilişkili gruplar (TİG): Diyabet vakaları üzerine karşılaştırma. Sağlıkta Performans ve Kalite Dergisi, 6, 1-23.

Ersoy, Z. (2014). Geri Ödeme Modeli Olan Teşhis İlişkili Gruplar (TİG) Ve Bu Model Üzerinde Sağlık Yöneticilerinin Görüşlerinin Değerlendirilmesi. Gazi Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

İstanbulluoğlu, H., Güleç, M., Oğur, R. (2010). Sağlık Hizmetlerinin Finansman Yöntemleri. Dirim Tıp Gazetesi, 85, 86-99.

Kaptanoğlu, A. Y. (2011). Birinci Basamak ve Yataklı Kamu Sağlık Kurumlarının Gelirlerinden Yapılan Ödemelerde Performans Yönetimi Kavramı. Journal of Higher Education & Science/Yükseköğretim ve Bilim Dergisi, 1, 142-151

Özer, A., İleri, Y. Y. (2016). Sağlık hizmetlerinin finansmanında Türkiye'de yeni yaklaşım; teşhis ilişkili gruplar (TİG). SDÜ Sağlık Bilimleri Dergisi, 7, 45-50

Öztürk, A., 2014. Geçmişten Günümüze Türkiye'de TİG Uygulamaları. Sağlıkta Verimlilik, Kalite ve Akreditasyon Daire Başkanlığı, http://webcache.googleusercontent.com/search?q=cache:-

QFmYpWehwoJ:dosyamerkez.saglik.gov.tr/Eklenti/3209,1baslangicindangunumuzeturkiyedetigingelisimsurecivesondurumpptx.pptx%3F0+&cd=2&hl=tr&ct=clnk&gl=tr, 19.10.2016.

Resmi Gazete (2009). 27393, Sosyal Güvenlik Kuruluşları. p. 62 https://www.resmigazete.gov.tr/eskiler/2009/11/20091101M1-1.htm

Tengilimoğlu, M., Akbolat, D., Işık, O. (2017). Sağlık İşletmeleri Yönetimi (8.baskı). Ankara: Nobel Akademik Yayıncılık

Tükel, R. (2010). Sağlıkta Dönüşümde Son Aşamaya Doğru: Hastanelerin Yeniden Yapılandırılması ve Yeni Finansman Modeli. Toplum ve Hekim Dergisi, 25, 230-236.

Yiğit, P. (2015). Kamu Hastanelerindeki TİG (Teşhisle İlişkili Gruplar) Verilerinin Sağlık Analitiği Yaklaşımı ile İncelenmesi. İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul.