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A Theoretical Assessment on the Relationship of Hospital's Quality and Accreditation Applications with Asymmetric Information

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ABSTRACT

Many governments try to control the hospital costs, make re-arrangements in health systems. Basic reasons of increased health expenditures are an increase in lifetime, development of health acknowledgement among people, problems due to asymmetric information also exists. At the same time in all over the world, both in public hospitals and private hospitals quality management systems are spreading wide. In this work, the effect of hospital quality costs to asymmetric information has been evaluated by analyzing publishes from foreign and internal releases by microeconomic model. A theoretical perspective in a short period analyses, limiting the supply by quality management systems because of the cost increase, the equilibrium service production level would decrease; in long term according to the increase of the information asymmetry the decrease will show up in equilibrium according to the demand that has been occurred by supply and only the price increase will be a result.

1. INTRODUCTION

Today, the concept of quality is generally defined as the level of satisfaction customer expectation on service or product. The satisfaction level of the customer's perception of the realized consumption of goods or services determines the quality level. Continuous improvement must be adaptive and sustainable in the sense that qualifications and requirements are changing over time (Büber and Başar, 2012), (Pakdil, 2004).

Studies have been conducted on the relationship between the quality and the final product price. Although there is a linear relationship between quality and price, there are some situations that quality level is ineffective on final product price. However, if the quality is determined, such as medicines are approved by the FDA, the medical devices are certified by CE, or if the systems are documented, an expectation of quality level also occurs on the customer side. In this case, it is expected that the quality work will be reflected in the price increase cause of the cost increase (Ding et al., 2010).

According to the sectors offering tangible products, there are many more factors related to meeting the healthcare expectation which is an intangible product. These factors are mainly; the behavior of the service providers, trust, information and bureaucracy. One of the most basic features that differentiate health production from other markets is the "information asymmetry" issue between buyers and sellers. Asymmetric information causes physicians and patients on the supply side of the health care market to be effective and even determinative in the consumption decisions of the patient on the demand side, treatment services are at the forefront of areas where this activity is at the highest level. Consumers of the services that hospitals or other healthcare providers produce have little knowledge of how to assess the technical side of the service. The patient delegates the procurement decision to the service provider, and the physician who moves with the motivation of the market maximizes the benefit or maximizes the profits of the health care institution (Bilgili and Ecevit, 2008), (Bloom et al., 2008).

In a market where the buyer's and seller's decisions are combined in the same person, for example in the hospital services market, manipulation of production towards producers' wants, an excessive use of resources and increased expenditures are inevitable. This result is defined in healthcare economy as supplier induced demand according to asymmetric information. The study examines the effect of the increase in quality and accreditation

practices in hospitals on costs by also adding the effect of information asymmetry and therefore results of the theoretical framework of the supply-demand model of the combination of these effects.

1.1 Quality Systems In Hospitals

1.1.1 Quality

Especially in the second half of the twentieth century, quality-of-care studies began to be reflected in patient care and care functions in the 1990s. There have been significant changes in the physical and functional structuring of hospitals. Diagnosis and treatment of diseases and developments in medical technology increase the availability of outpatient treatment while decreasing the length of stay of hospitalized patients and increasing the bed turnover rates (Mainz, 2003). Diagnosis and treatment plans of patients are gradually being transferred from outpatient services to clinics. This change in patient care and care functions also affects the structure of the hospital and its functions; the importance of providing a quality health care service in a short time is getting more important.

Efforts to provide quality at services, beginning at private hospitals and in a short period of time it is widespread in public hospitals, have been embodied in the practice of documenting quality by an external body in order to satisfy patients' health care needs at a satisfactory level (Belgian Healthcare Report 2008). The quality and performance of the hospitals are audited in five different ways: Statutory audits, patient surveys, 3rd party audits, statistical data and internal audits (WHO Report 2003).

Third party audits (ISO, accreditation…etc.), which are one of these types of audits, are defined as audits of systems that are voluntarily accepted by firms that implement quality management systems. A hospital that has been accredited by an international institution has the advantage of providing assurance to institutions (insurance firms, etc.) that may be potential customers acting on behalf of their patients or members, thus giving assurance about patient care processes (Litty, 2005).

1.1.2 Accreditation

The purpose of the accreditation system is to ensure that health care facilities provide accessible health care services and to evaluate the organization in terms of patient-oriented

and performance-oriented. Quality work began in 1951 with the United Nations Commission on Accreditation of Healthcare Organizations (JCAHO) in the United States, which has doubled every five years on a global scale since 1990. WHO identified 36 different accreditation programs in a global study in year 2000. Accreditation is defined as "the voluntary process by which a public or private institution voluntarily gives recognition, acceptance and fulfills certain standards that are required to be continuously developed in the structures, processes and outputs it gives to health institutions" (Shaw, 2003). In practice, the accreditation process requires a number of standards needed to improve patient care quality, to be certificated by an international independent organization that does not intend to profit (Yıldırım, 2011).

There are various social and economic factors behind the need for certification of health care quality by an impartial external body. The main factors are; the efforts of multinational corporations increasingly globalized to provide safe and effective health services to their employees in different countries, the desire to improve the state's treatment services, the development of overseas planned patient travel and health tourism, and the tendency to privatize health services (Etöz, 2008).

Accreditation standards recognized throughout the world as an effective management and operation model that have been established by JCI; is defined as the commitment of the health care institution to improve patient care quality at the optimum level, to provide a reliable patient care environment, to reduce the risks of patients and service providers, and to ensure the continuation of improvement and development activities (Joint Commission Facts Report), (Rooney, 1999). The JCI accreditation program evaluates under the country's social, economic and political position (Donahue and Ostenberg, 2000), (JCI Patient Safety Report).

Today, many countries seeking high quality health care services have established different accreditation systems, by taking into account national criteria and social life criteria. Civil society organizations such as America-JCI, Australia-ACHS, Canada-CCHSA, UK-KFOA, Netherlands-CBO, New Zealand-QHNZ, France-ANAES and South Africa-COHSASA best known for their systems to find and improve the weaknesses and problems of hospitals that has formed (Tabrizi et al., 2011).

1.2 Quality Costs

Quality cost; costs incurred due to activities carried out in order to prevent possible errors, planned quality inspections and faults occurring during the production of the product or after the delivery of the customer. In other words, the costs that the enterprises have to pay for quality production and to keep the quality level at a certain point are called quality management costs. Quality costs have become even more important with the understanding of the quality of the qualification (Sailaja et al., 2015).

Quality management costs are classified into three subheadings: prevention costs, measuring-evaluation costs and failure costs (Toraman, 2010).

1.3 Asymmetric Information and Quality Applications

Whereas one of the two components of the market (the producers) has knowledge about the product, the production process and the production technology, the ignorance about all of these other components (consumers) is called "information asymmetry". Consumers on the health market is lack of information on the type, quantity, timing, need for severity of consumption needs and effectiveness of treatment (Ünal, 2013).

The information asymmetry is higher in the health market where the supplier has more knowledge (physicians and health care institutions) then the consumers (patients and their relatives, insurance institutions). Knowledge of the process of disease development, its outbreak, and possible outcomes requires intensive knowledge. It is unexpected that large masses of society have this knowledge. On the other hand, the resulting product is heterogeneous, not homogeneous. Therefore, it requires advanced knowledge to make an accurate assessment of both types of services and those that supply them. Moreover, in the face of a rapidly developing scientific literature and in the healthcare environment, the difficulty and cost of informing is growing even more in cases of sudden uncertainty.

Since there is no standard doctor behavior model in the health service provision, the service delivery and treatment methods of the physicians may differ. This can be disadvantage to both the patient and the healthcare provider that deals with the healthcare of the patient. Asymmetric information is a major cause of market disruptions in the healthcare sector, especially financially based insurance system. The disruptions that the information asymmetry reveals in the health services market can be listed as follows: Health insurance

leads to moral hazard, adverse selection between the ones covered by the insurance on the private health insurance market, the demand for supply in the health services market (supplier-induced demand) (Atella et al., 2016).

Nowadays, the quality phenomenon, an indispensable element of every production process, affects information asymmetry in two ways: Firstly the quality increases and intensifies the degree of asymmetric information; secondly quality of service can curb medical quality. As a co-result of both effects, the position of the physician in which the consumer delegates the decision of demand is strengthened. Only the "supplier induced demand" will be mentioned here, since the influence of the information asymmetry on the demand will be examined in the study.

1.4 Supplier Induced Demand In Healthcare

There are opinions and judgments about the quality and suitability of many goods and services that consumers will consume. So the consumer decides on the type and amount of consumption itself. However, in health care, the consumer has little knowledge of the suitability and quality of treatment applied to him. At this point, the consumer is literally addicted to physician. It is shaped by the physician that the patient will consume what, in what quantity and quality. This situation puts the physician in the position of demanding both the for service provider and the service demander (Keyvanara et al., 2014).

This position that physicians are facing is named in literature as supplier induced demand. Because, in some cases, health professionals who are effective in determining the demand pattern and quantity can increase the demand for services and cause excessive consumption even though it may not be necessary. There is also the question of the existence of the physician, the health-care provider, and of the claim itself, according to the absence of it. In other words, the formation of demand for that service depends on the physician's presence. Therefore, although the number of producers on the supply side increases in the health sector, the demand for the service produced does not decrease and can increase on the contrary. The most important consequence of the requesting party's ability to make a demand is that the service provider can act in the direction of increasing consumption depending on the payment method (Schmid, 2015).

2. METHODS

The study was based on a theoretical evaluation; literature review was taken as a method. In order to examine the relationship between quality costs and information asymmetry, basic keywords were first determined; accreditation, quality costs, asymmetric information. With the guidance of keywords, the literature on google scholar and EBSCO database was searched. Both, benefits and challenges of the topic is searched and been reviewed in literature. While making a literature review objectivity and being updated was the most caregiving facts. In addition to the national literature, international literature has also been searched. Previously, only the effect of quality costs has been shown in the supply-demand mode which take place in literature, while the effect of quality costs and information asymmetry in the study has been aimed to be adapted to the microeconomic dynamic analysis method and in that way the theoretical framework has been evaluated.

According to Harrod (1939), "Economic dynamics is the study of an economy in which rates of output are changing". While static analysis is to depict the economic situation, dynamic analysis shows the change of equilibrium. Baumol (1959) says "Economic dynamics is the study of economic phenomenon in preceding and succeeding events". Dynamic analysis is a method of showing a new equilibrium from a previous equilibrium. While static analysis aims to show simply the relation between two variables by assuming the other variables constantly, dynamic analysis, multivariate and temporal change in the form of taking a closer approach to the reality. Cerqueira (2006), analysis the effect of quality and asymmetric information separately in the microeconomic model. Afterwards a new model has been set up by us that show the compound effect of these two factors interacting with each other. The process that begins with quality and accreditation ends up by resulting in the form of concentrating in information asymmetry. It would have been an inadequate analysis without showing these two factors both affecting the supply side and the demand side in the supply-demand model together. In this work, it is aimed to complete analysis by using assumptions of microeconomic theory.

3. RESULTS AND DISCUSSION

3.1 The Impact of Quality Applications on Costs

In a doctoral dissertation written by Irvin (Irvin, 2008), information asymmetry, quality and patient output have been discussed. In dissertation, hospitals were evaluated in two different

groups as profit-oriented and nonprofit-oriented. According to the results of the study, information asymmetry is experienced more intensely in patients in profit-oriented than in nonprofit-oriented. It has been stated that hospitals which are profitable, do improvements in areas related to car parking area, appointment system, decor and waiting time under the name of quality, but they do not have much quality in clinical aspect. It was emphasized that the consumer who does not have the ability to evaluate clinical data is responsible for looking at the showcase features. It has been noted that these types of non-clinical improvements are ultimately reflected in additional costs (Rashdi, 2011).

In the article compiled by Cerqueira (2008), the advantages and disadvantages of quality assurance systems have been investigated by the supply-demand model. Accordingly, since the accreditation will limit the number of institutions that can achieve these standards, the supply will narrow and the supply curve will shift to the left. Thus, an increase in prices reflected at the new equilibrium point (b) will be observed.

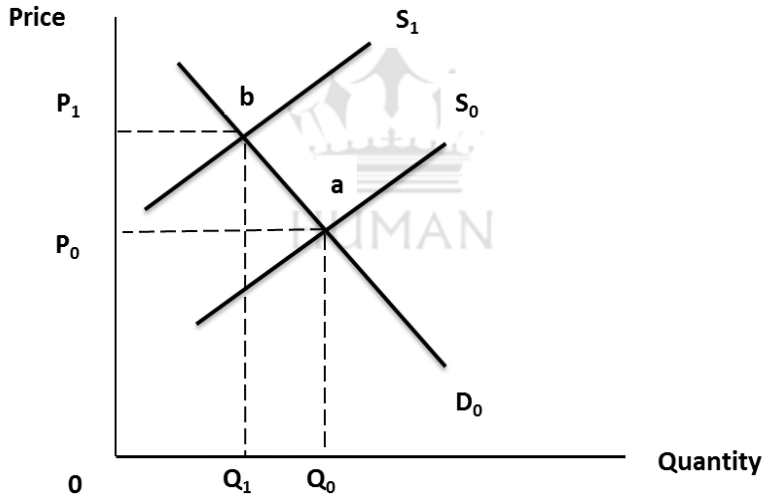

Figure 1: Influence of Accreditation on Costs

Source: Markus Cerqueira, A literature review on the benefits, challenges and trends in a accreditation as a quality assurance system, Ministry of Children and Family Development

In the new case, the equilibrium production level decreases from Q_0 to Q_1, while the equilibrium price level increases from P_0 to P_1 (Figure 1). This situation is in accordance with the increase in costs due to accreditation work.

3.2 The Induction of Demand by Asymmetric Information

According to the survey conducted by Amporfu (2011) in Ghana, creating demand in supplier side is higher in private hospitals, which are particularly accredited. In these hospitals, the visit of the patient is requested by the doctor even though it is not necessary. In addition, the majority of patients who come to accredited private hospitals have private health insurance which is also an increasing demand from information asymmetry. While the impact of quality-accreditation on information asymmetry is assessed, it is critical to consider hospitals as either profit-seeking or nonprofit-seeking. The fact that the informational asymmetry is triggered by the requesting service provider depends, of course, on the existence of a market that will generate profits or profit from the increase in output that will arise in this case.

A study similar to this was made by Almoajel (2012) and it was stated that accredited hospitals have high performance data which have already high data, but the ones with low clinical data performance did not show any change in the patients. It is also emphasized that there is a complex relationship between quality indicators and accreditation and that they have a linear relation.

We mentioned above that quality and accreditation practices bring about an increase in information asymmetry and concentration. Accordingly, the change in the amount and price of equilibrium and the increase in the demand created by the supply side are shown in Figure 2.

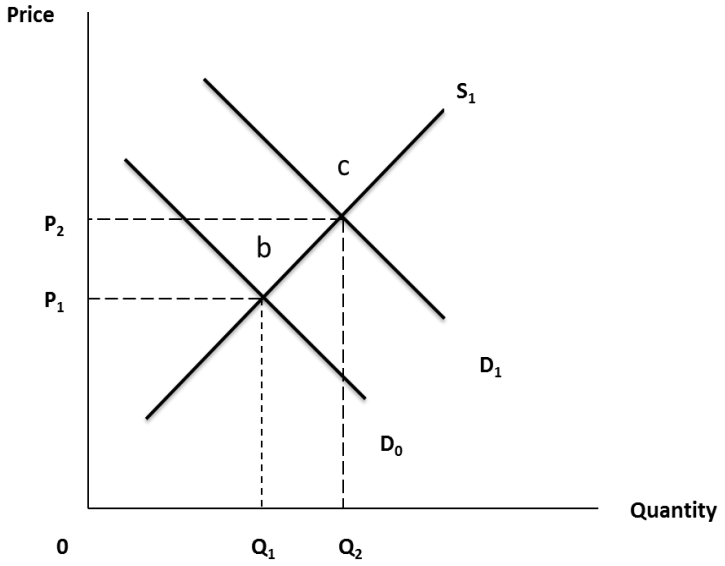

Figure 2: The effect of Asymmetric Information

Source: Markus Cerqueira, A literature review on the benefits, challenges and trends in a accreditation as a quality assurance system, Ministry of Children and Family Development

The fact that quality and accreditation cause an increase in the information asymmetry will lead to the demand amount generated by the supply side being even greater. In the microanalytical model, the effect of this expansion on demand is shown by sliding the demand curve to the right (D_1) (Figure 2). However, according to the absence of quality and accreditation, the right shift in demand is greater; resulting in an increase in the amount of balance produced quantity and an increase in the price.

We have modeled the following effect on the total effect of changes that occur as a result of sliding supply and demand curves in the model used by Cerqueira in his work.

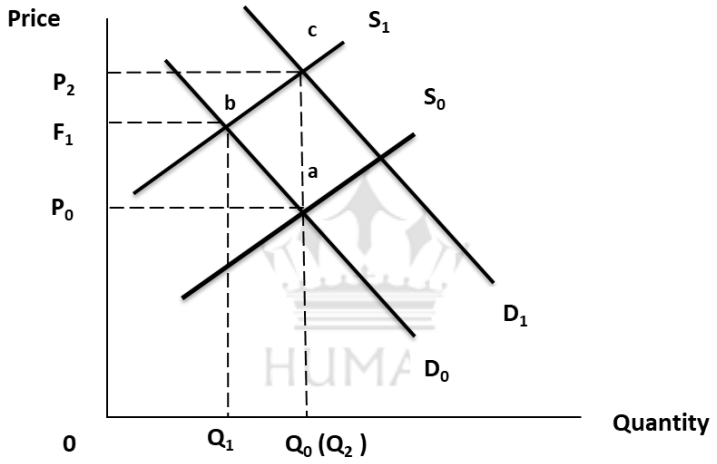

Figure 3: Total effect of changes

Accordingly, the first effect of accreditation practices is the reduction of supply and the shift of the supply curve to the left, where the equilibrium goes from point "a" to point "b", production amount decreases from Q_0 to Q_1 and price increases to P_1. After accreditation, the demand curve shifts to the right as a result of the increase in supply-side demand creating and the equilibrium occurs at the point "c". In this case, the price increase will continue while the amount of equilibrium goes back to its previous level. As a result, it is observed that the equilibrium production point has reached Q_2 (the first equilibrium quantity level, Q_0 point), whereas the price has risen further towards P_2 point.

4. CONCLUSION

Social development process leads to increase of health consciousness and expectation of qualified service. Institutions seeking to respond to this expectation are more likely to apply to quality systems or accreditation. The current knowledge of asymmetric information in the healthcare market is increasing, and in other words, the information gap between buyers and sellers is growing.

According to short-term microeconomic analysis, while quality and accreditation practices increase costs, equilibrium will reduce the level of quantity. However, it is foreseen that in the long run, due to the increase in the number of information asymmetries, this decrease can be compensated by the increase in supply demand, which will return to the starting point of the amount of produced and consumed service. The applied quality-accreditation system, on the one hand, causes the supply curve to shift to the left on the cost increase; on the other hand, the healthcare institutions have already increased the information asymmetry that is already available for their output, leading to a stronger increase in demand created by the supply side. The resultant effect of these trends is that prices only rise without a significant change in the amount of balanced service quantity.

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