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# Factors Affecting Patient Satisfaction With Healthcare System Of Turkey

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FACTORS AFFECTING PATIENT SATISFACTION WITH HEALTHCARE SYSTEM OF  
TURKEY

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## DEDICATION

This dissertation is dedicated to my wife Sema, who has supported me through all my academic life. I could have never dreamed this if it were not for her help and encouragement.

## ACKNOWLEDGEMENTS

It is my pleasure to acknowledge and thank the members of my dissertation committee for their extreme cooperation, supervision and availability. In particular, I would like to express my sincere appreciation to Dr. M.Mahmud Khan for his support and direction. This work would not have been possible without their constant guidance and persistent help.

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My special thanks also go to my brother Dr. Necati Aydin and my cousins Mazhar Aydin and Ercan Aydin, who never left me alone in this journey.

## ABSTRACT

The World Health Organization (WHO) defines health system as comprising of all the organizations, resources, and institutions dedicated to improving health. Health systems have a responsibility not just to improve the health of the population they serve but to provide financial protection against the costs of illness and to respond to people's expectation with dignity. Besides, healthcare satisfaction and consumer satisfaction have become the latest trend in measuring quality to have a competitive advantage or best practice in the healthcare industry. Over the past 30 years, consumer satisfaction has gained widespread recognition as a measure of quality in many services and become an attribute of quality, a legitimate and desired healthcare goal. The measurement of the quality of care gives information on the provider's success at meeting patients' values and expectations, which is an important tool for researchers, administrators, and planners to evaluate the system. The main objective of this study is to identify factors affecting patient satisfaction with the healthcare system as well as to examine the trends in patient satisfaction as a result of purposed major healthcare reforms under Turkish healthcare transformation. The quantitative analysis will also analyze the changes in patient satisfaction level by years and will try to find out how individual and country level factors are important for satisfaction with healthcare system of Turkey.

This study will help to fill the gaps in our knowledge by examining factors that may be associated with patient satisfaction with the overall healthcare system. In this study, we would like to also investigate which factors play a role in determining patient

satisfaction with the healthcare system. Based on these findings, healthcare providers and planners can focus to improve at least one component of health system performance responsiveness.

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## LIST OF ABBREVIATIONS

ABRS .....	Address Based Registry System
ANOVA .....	Analysis of Variance
BAG-KUR .....	Social Insurance Agency of Merchants, Artisans, and the Self-employed
DWPSQ.....	DiTomasso-Willard Patient Satisfaction Questionnaire
GERF .....	Government Employees Retirement Fund
GLM.....	General Linear Model
HTP.....	Health Transformation Program
IOM.....	U.S. Institute of Medicine
JCAHO.....	Joint Commission on Accreditation of Healthcare Organizations
MoH .....	Ministry of Health
MOHSA .....	Turkish Ministry of Health and Social Affairs
NADB .....	National Address Database
NCQA .....	National Committee on Quality Assurance
PIMS .....	Profit Impact of Market Strategy
PSQ.....	Patient Satisfaction Questionnaire
SPSS.....	Statistical Package for Social Science
SSI.....	Social Security Institute
SSK .....	Social Insurance Organization
TDHS .....	Turkey Demographic and Health Survey
THS.....	Turkey Health Survey



TQM.....	Total Quality Management
TUIK.....	Turkish Statistical Institute
UHC.....	Universal Health Coverage
WHO.....	World Health Organization

## CHAPTER 1

### INTRODUCTION

Patient satisfaction is the judgment of the patient on healthcare services and healthcare system and is commonly used as an indicator of quality (R. Baker, 1997). To improve the health system and to ensure that patients receive quality service they need, patient satisfaction based analysis has become important to healthcare managers and policy analysis. This dissertation is an attempt to understand patient satisfaction with the overall healthcare system, and how population satisfied with the healthcare services in general without focusing on specific health facilities or healthcare providers. Since the respondents cannot be linked with specific healthcare facility or healthcare provider, the study will use population-based survey of satisfaction with healthcare system.

Patient satisfaction is usually measured in two ways; patient exit interviews that consist of asking the patients to fill out a questionnaire about the services they have just received at the point of patients' exit from a clinical consultation or healthcare facility. The technic is commonly used to assess patients' satisfaction with the healthcare providers and services received, allowing researchers to collect data about patient's experiences in a minimum recall period (Geldsetzer, Fink, Vaikath, & Bärnighausen, 2016). The second way to assess patient satisfaction is population-based surveys that use survey sampling methods to produce a collection of experimental subjects. The survey is commonly used to evaluate overall patients' satisfaction with healthcare system by asking 'how general were you satisfied with healthcare system?'. The larger and more

representative samples characteristics of population-based survey can provide the ability to observe general population thought about healthcare system than specific providers or services. (Mutz, 2011).

To better understand the degree of “satisfaction” of the population with the health system, the concept that need clear definition is the idea of “health system” itself. The main objective of a health system is to improve health that can be subdivided into two related components; goodness and fairness. Goodness implies that the health system responds well to people’s expectation while fairness means it responds well to all population without any discrimination (WHO, 2000). Socially valued outcomes of a health system are health attainment, responsiveness, fairness, and access to care (Murray & Frenk, 1999). Strong health systems are fundamental to improve health outcomes and to be able to address their own weaknesses and constraints (De Savigny & Adam, 2009).

The World Health Organization (WHO) defines health system as comprising of all the organizations, resources, and institutions dedicated to improving health (WHO, 2007). Health systems have a responsibility not just to improve the health of the population they serve but to provide financial protection against the costs of illness and to respond to people’s expectation with dignity. Because these responsibilities are not always met, public dissatisfaction with healthcare system is widespread. There are important measurements to assess the goal achievement of health system: the overall level of health, the distribution of health in the population, the overall level of responsiveness, the distribution of responsiveness, and the distribution of financial contribution (WHO, 2000, 2007). Among the five measurements proposed by the WHO to measure the outcome of a health system, responsiveness and distribution of

responsiveness appears to be directly related to consumer satisfaction. Because, responsiveness refers to how systems respond to people's expectations from the perspective of patient experience through its components, respect for dignity, confidentiality, autonomy, access to social support networks, and choice of provider (Bleich, Özaltin, & Murray, 2009). Therefore, the patient's reports and rating of the experience with their care is the necessary instrument of responsiveness asked to respondent to report their rating of satisfaction with overall healthcare system (Darby, Valentine, Murray, & De Silva, 2000).

Satisfaction with health systems has been a major concern for many countries. In order to evaluate healthcare system performance, the measurement of patient satisfaction is an essential part in terms of service quality and healthcare system responsiveness (Stepurko, Pavlova, & Groot, 2016). Across developed and developing countries, patient satisfaction is playing an increasingly crucial role in quality of care reforms and healthcare delivery. The increasing importance of patient experience can help to capture the 'responsiveness' of the health system, referring to the manner and environment in which people are treated when they seek healthcare (Bleich et al., 2009).

Patient satisfaction with healthcare system can reflect not only the perceived performance of healthcare services but also the health status of the individual. The literature and empirical evidence conclude that patient satisfaction is seen as both a consequence and a determinant of self-perceived health status and is also associated with self-perceived health status (Paul, Hakobyan, & Valtonen, 2016).

Reform and renewal are fundamental features of every health system to meet the needs and preferences of all its population. In strengthening healthcare system, the

complexity of whole system should be examined, monitored, and managed through understanding the linkages, interactions, feedbacks, and process between the elements comprising the system. Measuring each of the components provides their relationships with each other that gives the ability to observe healthcare system performance (Adam, 2014).

The views of general population satisfaction with health system is the measurement to provide useful insight into public opinion on healthcare system performance (Footman, Roberts, Mills, Richardson, & McKee, 2013). Thus, general population satisfaction with healthcare system is assuring the stability of a health system when measuring and assessing healthcare system as well as quality of care (Ali, Nikoloski, & Reka, 2015). Improving healthcare system performance often inquires understanding of factors that influence satisfaction variation. Researchers have provided that the measurement of patient satisfaction with healthcare system is more sensitive and reliable than measuring traditional measures like mortality, morbidity, and provider peer review (Park, Park, Kwon, Kang, & Noh, 2016). Therefore, more accurate and legitimate assessment of healthcare system performance can be done through considering the public/population views, experiences, and perceptions (Park et al., 2016). Being aware of the public's level of satisfaction with healthcare system can provide insights into how to manage the unique challenges of the service delivery (Vogus & McClelland, 2016). Evaluation of the services reflects the perceived value that the population ascribes to the health system, helping to measure and improve healthcare performance (Paul et al., 2016).

Satisfaction is one of the many life outcomes providing a value of understanding the environment and is fundamental particularly in the marketplace to the profits of firms that are supported through purchasing and patronization, to the well of individual consumers, and to the stability of social and political structures. In the consumer's perspective, satisfaction is a goal to be attained from the consumption of product and services as an individual pursuit. Satisfaction would be unimportant if firms' product or services were viewed as a one-time only purchase by consumers, which is against the purpose of firms in capitalistic societies to make a profit. Because, repeat purchasing is the essential to a continued stream of profitability for the firms. Societal perspective also reflects that the quality of life has strong relationship with satisfaction, and satisfied members of society demonstrate better life outcomes as well as better social and mental adjustment (Oliver, 2014a).

The role of satisfaction in consumer behavior study is considerable importance to marketing researchers and marketing managers to focus on consumer responses to products and services. The focus on the consumer satisfaction is the key contribution of marketing to business practice to compete effectively against firms that stay close to their customers (Kardes & Steckel, 1999). Consumer satisfaction theory and research that have consistently supported a strong relationship between product satisfaction and repeat purchasing intention show the level of contribution (Halstead & Page, 1992). Inherently, the inverse result of satisfaction, dissatisfaction, may influence complaining behavior that decreases the likelihood of repeat purchase while consumer satisfaction information serves as an critical feedback mechanics for organization to take position (Halstead & Page, 1992; Kardes & Steckel, 1999).

Research on health system satisfaction has identified ways to compete as improving health and reducing costs (Bleich et al., 2009). Patient satisfaction, which has become an important concept both as a metric to measure quality care (Donabedian, 1988) and as a desirable health outcome (Lo, 2014; WHO, 2000), is the one of ways to learn how well the population has been served in terms of the quality of healthcare (Donabedian, 1966). Besides, patient satisfaction is identified as an important outcome for healthcare services (Alexander, Sandridge, & Moore, 1993). The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Committee on Quality Assurance (NCQA) have required hospitals to evaluate healthcare by collecting outcome data, including data on patient satisfaction (Isenberg & Gliklich, 1999; Joint Commission on Accreditation of Healthcare Organizations, 2000). Thus, patient satisfaction is an important indicator that needs to be evaluated by public policy analysis, healthcare managers, and practitioners in order to maintain as well as improve the quality of care (Chunuan, 2002; World Health Organization, 2000).

In conclusion, better information regarding the factors that have affected satisfaction can assist healthcare providers, public policy analysis, healthcare managers, practitioners, and planners to improve the quality of the services they deliver to users (Rosemarie Crow et al., 2002). For instance, the physician's sensitivity to patient needs and experiences has been increasing and receiving better results on patient evaluations, which is accepted as a good indicator of quality (Dagdeviren & Akturk, 2004). Therefore, as a widely accepted study argued, without a better understanding of what causes patients to be more or less satisfied with the care they receive, it cannot be clear to evaluate the healthcare system (Ware, Davies, & Stewart, 1977).

## 1.1 PURPOSE OF STUDY

Purpose of the study is to examine satisfaction of the population with the health system and its components. A nationally representative survey conducted in Turkey since 2008 will be used for this purpose. The components of health system to be considered are health center, public hospitals, private health institutions, family doctors or general practitioners (GPs), specialists, dentists, health professionals, and home care services. Since Turkey has implemented healthcare reform, the analysis should be able to indicate possible effects of reform on satisfaction of population with healthcare system.

Patient satisfaction is commonly used as an indicator for measuring the quality in healthcare. Donabedian, the pioneer of the quality of care theory, describes that patient's satisfaction is a criteria to predict healthcare outcome, which is one of three-part approaches to quality assessment (Donabedian, 1988). Those three keys of the theory—structure, process, and outcome—work in tandem with each other; the structure of care relates to the process of care, and these in turn affect the outcomes of care. Besides, the 2000 World Health report has underlined the role of satisfaction in the three fundamental objectives of health systems (i.e. improving the health of the population they serve, responding to people's expectations, and providing financial protection against the costs of ill-health) to meet with public expectation (World Health Organization, 2000).

Although some outcomes are generally easy and unmistakable to measure, mostly objective instruments such as death and income, others can be difficult to measure. Patient satisfaction is one of them being difficult to measure (Donabedian, 1966). Satisfaction can be measured indirectly by asking users to rate the quality of services that they have received or experienced (Rosemary Crow et al., 2002). The most widely used



measure of patient satisfaction is a five-point Likert scale or seven-point Likert scale, which is the most widely used approach to scaling responses in survey research asked “In general, how satisfied are you with the health care you received?” (Argyle, 2013; Carey & Seibert, 1993; Chunuan, 2002; Oliver, 2014a; Yellen, Davis, & Ricard, 2002).

Some questions arise when studying patient satisfaction as a variable in social science, such as: What is it? What are its determinants? Does it link to outcome, and how does it lead to better health outcomes for patients? These are questions that the relevant studies have considered when determining the sources of patient satisfaction (Jackson, Chamberlin, & Kroenke, 2001; Senić & Marinković, 2013; Thiedke, 2007; Yellen et al., 2002).

Patient satisfaction also represents a complex mixture of perceived need, expectations and experience of care as well (Smith, 1992). The literature appears mixed on the importance of patients’ demographics, social factors, and structural factors that scholars have concluded play a role in varying degrees of determining patient satisfaction. The prior expectations of a patient entering the care setting (Thiedke, 2007; Thompson & Sunol, 1995), and demographics such as age, gender, ethnicity, socioeconomic status, and health status, as well as patients’ involvement in the decision-making process, and the time a physician spent with the patient are also considered to be important determinants of patient satisfaction (Thiedke, 2007).

Although many studies have been conducted to identify patient satisfaction factors associated with either satisfaction with care delivery (Chunuan, 2002; Jacox, Bausell, & Mahrenholz, 1996), health outcomes after hospitalization (Lo, 2014; Zineldin, 2006), physician’s ownerships type (Shivaji, 2012), or physician’s communication style

(Wang, 2010), there is no particular study on patient satisfaction with overall Turkish healthcare system to evaluate the success of major health reforms witnessed in the past fifteen years, and to try to find how country characteristics might be crucial in determining satisfaction with overall system. For this reason, the purpose of this study has been set to identify individual (social-demographic) and country level (structural characteristics of the healthcare system) factors associated with patient satisfaction with healthcare system of Turkey.

This study will help to fill the gaps in our knowledge by examining factors that may be associated with patient satisfaction with overall healthcare system. In this study, we would like to also investigate which factors play a role in determining patient satisfaction with the healthcare system. Based on these findings, healthcare providers and planners can focus to improve at least one component of health system performance responsiveness.

## **1.2 SIGNIFICANCE OF STUDY**

Nowadays, healthcare satisfaction and consumer satisfaction have become the latest trend in measuring quality to have a competitive advantage or best practice in the healthcare industry (Sinha, Camgöz-Akdag, & Zineldin, 2010). Over the past 30 years, consumer satisfaction has gained widespread recognition as a measure of quality in many services and become an attribute of quality, a legitimate and desired healthcare goal (Shaw & Shaw, 1986). The measurement of the quality of care gives information on the provider's success at meeting patients' values and expectations, which is an important tool for researchers, administrators, and planners to evaluate the system (Donabedian, 1980).

Patient satisfaction has been used for four related but noticeably different purposes (Locker & Dunt, 1978): (1) comparing different healthcare systems or programs; (2) assessing the quality of care (Donabedian, 1966; Sinha et al., 2010; Ware et al., 1977); (3) recognizing which type of service is supposed to be changed to increase patient satisfaction (Jackson & Kroenke, 1997); and (4) helping organizations in describing consumers likely to disenroll (Weiss & Senf, 1990).

Although the increased focus on satisfaction as an outcome measure resulted in a growing body of research, the factors affecting patient satisfaction remain largely unknown (Jackson et al., 2001). Most of the studies that focused on measuring predictors of satisfaction have explained only a small portion of satisfaction variance, which doesn't pass more than 20% (Jackson & Kroenke, 1997). Linder-Pelz underlined that due to the lack of good models of satisfaction, most models still have little power to explain satisfaction (Linder-Pelz, 1982). The results demonstrate that there are still important gaps in our understanding of which factors affect patient satisfaction that necessitate further study.

There are several reasons to study patient satisfaction with the healthcare system. Patient satisfaction is an important outcome for healthcare services and healthcare organizations in terms of monitoring and maintaining the quality of care (Alexander et al., 1993; Bear & Bowers, 1998; Williams, 1994; Zineldin, 2006). Patients' view should be sought in order to improve the responsiveness of healthcare to match with their needs (al-Mandhari, Hassan, & Haran, 2004), and responsiveness is the one of three main goals of the WHO to improve national health systems' performance (WHO, 2000). Health systems have three fundamental objectives which are supposed to be met to prevent

public dissatisfaction with healthcare services: improving the health of the population they serve, responding to people's expectations, and providing financial protection against the costs of ill-health. According to the WHO, responsiveness is an alternative to satisfaction as a way to judge a health system's performance based on service users' expectations of the system. WHO defines responsiveness as a measure of how a health system performs to meet a population's expectations through the following elements of responsiveness: respect for dignity, confidentiality, autonomy, prompt attention, quality of amenities, access to social supports, and choice of provider (WHO, 2000). In the future, measures of patient experience and responsiveness of the health system developed by WHO are likely to receive greater attention while hospitals and physicians have a growing pressure to enhance patient satisfaction, lower the cost of services, and improve the quality of care (Bleich et al., 2009).

Patient satisfaction is used to predict future service utilization and intention to return for services (Kuosmanen, Hätönen, Jyrkinen, Katajisto, & Välimäki, 2006) and is also a marketing tool that can give healthcare agencies and providers a competitive edge (Bear & Bowers, 1998), which can be important for marketing perspectives as well (Chen, 1995). Numerous studies have also underlined the effect of satisfaction on loyalty, which also influences market share and profitability. Some models and hypotheses have been developed to focus on satisfaction, such as the Profit Impact of Market Strategy (PIMS) model (Buzzell & Gale, 1987; Nelson, Rust, Zahorik, & Rose, 1992).

The main objective of this study is to identify factors affecting patient satisfaction with the healthcare system as well as to examine the trends in patient satisfaction as a result of purposed major healthcare reforms under Turkish healthcare transformation. The

quantitative analysis will also analyze the changes in patient satisfaction level by years and will try to find out how individual and country level factors are important for satisfaction with healthcare system of Turkey.

Since 2003, Turkey has implemented the Health Transformation Program (HTP) to improve easily accessible, efficient, effective, and high quality healthcare services and achieve universal health coverage (OECD, 2014a; OECD/The World Bank, 2009; World Health Organization, 2012). Before the HTP launched, the Turkish healthcare system was characterized by its highly inefficient, fragmented provision financing structure and inequalities in access to healthcare for the population (Celik & Hotchkiss, 2000; Jadoo, Aljunid, Sulku, & Nur, 2014). There have been remarkable development and changes in the Turkish healthcare system including infrastructure of healthcare services and the structure of supply and demand. For example, number of physicians increased from 85,184 to 141,259 (The World Bank, 2017a), number of visits to the doctor per capita from 3.2 to 8.3 (OECD, 2017), number of medical institutions from 9,685 to 30,449, and total number of hospital beds from 164,471 to 209,648 in 2002, and 2015, respectively (Turkish Statistical Institute TUIK, 2017).

### **1.3 TURKISH HEALTHCARE SYSTEM CHARACTERISTICS**

Over the past decade, Turkey has implemented healthcare reform, which is reflected in the significant improvements across indicators such as maternal mortality, infant mortality, life expectancy, and accessibility. Turkey's success at improving healthcare coverage and system performance has been impressive (OECD, 2014a; World Health Organization, 2012). In the last century, Turkey implemented the infrastructures of its healthcare system on a step by step basis as seen in Box 1.1.

<p><b>1920–29</b></p> <ul style="list-style-type: none"> <li>• 1920: The Turkish Ministry of Health and Social Affairs (MOHSA) is established after the inauguration of the Turkish Grand National Assembly in 1920 (law no. 3) with a focus on public health</li> </ul> <p><b>1930–49</b></p> <ul style="list-style-type: none"> <li>• 1945: Social health insurance (Social Insurance Organization) is established for blue collar workers</li> <li>• 1946: The first national 10-year health plan is developed</li> <li>• 1949: Social health insurance for retired civil servants 1950–59</li> <li>• 1952: Mother and child health division established in the Ministry of Health</li> <li>• 1953: Mother and child health development center established, with support from WHO and the United Nations Children's Fund</li> <li>• 1953: The Turkish Medical Association is established</li> <li>• 1954: MOHSA assumes a role in the provision of curative services, initially with MOHSA-established model hospitals, and begins training of health workforce</li> <li>• 1954: Health facilities belonging to provincial and municipal administration are placed under MOHSA administration, managed by provinces</li> <li>• 1954: The first national 10-year health program is declared (which is the cornerstone for planning and organization of the Turkish national health service)</li> </ul> <p><b>1960–79</b></p> <ul style="list-style-type: none"> <li>• 1961: The Law on the Socialization of Health is adopted, promoting an integrated health service scheme, and establishing a three-tiered health system (health house, health center, and district hospital), managed by MOHSA</li> </ul>	<ul style="list-style-type: none"> <li>• 1965: The Law of Population Planning is adopted, with pro-natalist policies</li> <li>• 1971: Bağ-Kur (social health insurance for self-employed people, artisans, and organized groups) is established</li> </ul> <p><b>1980–89</b></p> <ul style="list-style-type: none"> <li>• 1982: The new constitution reconfirms the importance of the state in protecting the health of the population and in ensuring universal health coverage, including through a unified social health insurance system</li> <li>• 1987: Basic Health Law is enacted, prescribing a narrower role for the Ministry of Health in service provision and a focus on regulation, but is not fully implemented because of partial rejection of the law by the Constitutional Court</li> </ul> <p><b>1990–99</b></p> <ul style="list-style-type: none"> <li>• 1992: National Policy Forum is held, with broad stakeholder involvement</li> <li>• 1992: The Green Card scheme (health insurance for households outside the formal health insurance schemes) is introduced as an interim measure until the creation of a unified health insurance scheme</li> <li>• 1993: The Law of Health Law, Ministry of Health structure and responsibilities, Provincial Health Administration, General Health Insurance is developed</li> <li>• 1996: The laws on health financing institution establishment and process, primary care health services, and family medicine, hospitals, and health entities are developed</li> <li>• 1998: The law of personal health insurance system and health insurance administrative presidency is developed</li> <li>• 1999: The draft law of health fund institution is developed</li> </ul> <p>• However, the above laws are not enacted because of a political stalemate in the Turkish Grand National Assembly</p>
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**Box 1.1 Key developments in the Turkish Health system – a historical overview (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, & Ayar, 2013)**

**1.3.1 TURKISH HEALTHCARE SYSTEM**

Turkey is an upper-middle income country where the age composition is much younger than that of other OECD countries. Turkey has rapidly increased its demographic, epidemiological, economic, and social development in the last few decades. Economic development is generally associated with health outcome; consequently, the health outcome of Turkey has paralleled the rapid growth of the Turkish economy (Sulku, 2012).

While the population has doubled from 35 million to more than 78 million in the last 50 years, the reforms that Turkey has implemented in the last decade have undoubtedly been a success in several respects such as life expectancy at birth (see Figure

1.1), neonatal mortality, maternal mortality, and infant mortality. For instance, the infant mortality rate fell from 150 per 1000 live births to less than 10 per 1000, and life expectancy at birth for men and women combined has risen from 50 years to around 75 years within the time scale (The World Bank, 2017b). Life expectancy at birth is recorded as the second largest gain in the OECD, and the reduction of the infant mortality rate is the highest reduction per year in the OECD (OECD, 2014b). In additionally, Turkey's GDP also doubled from about \$5,000 (US) to \$10,000 per capita during the last decade. These results emphasize that in the past decade Turkey has successfully increased the volume of professionals, services, and productivity, as well as assuring universal access to healthcare (OECD, 2014b).

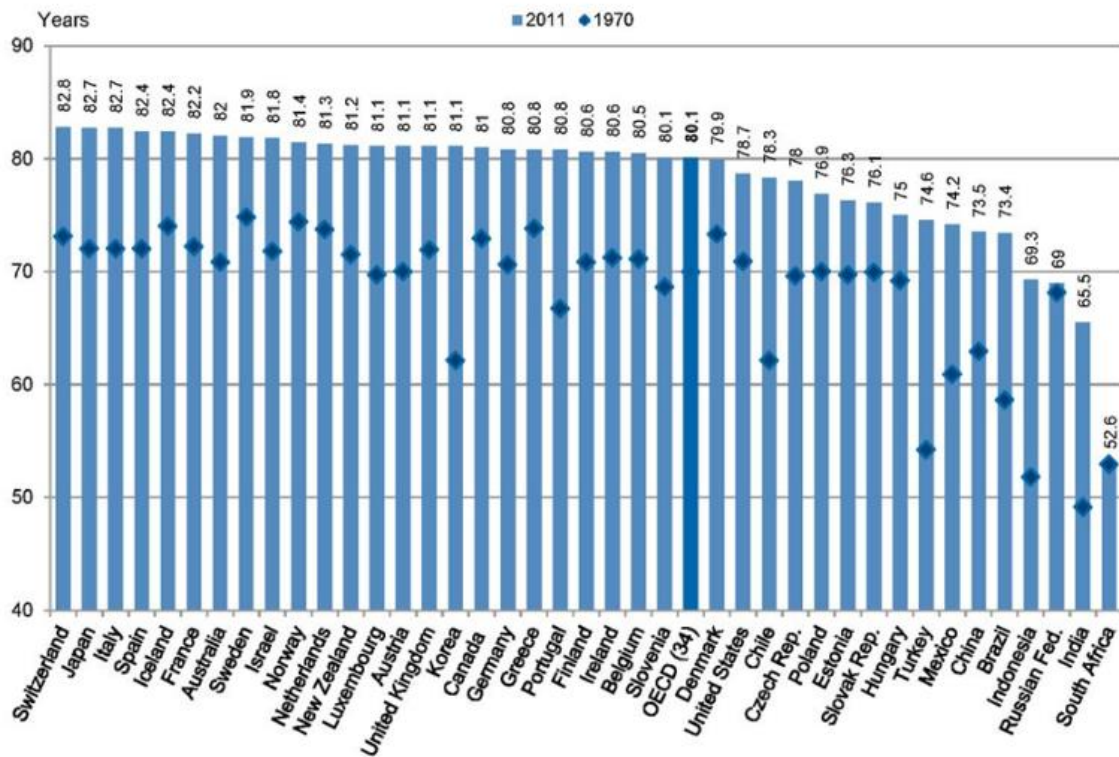


Figure 1.1 Life expectancy at birth, 1970 and 2011 (OECD, 2014a)

There have been impressive improvements in the health status of the Turkish population; the life expectancy at birth increased from 63 years old in 1995 to 78 in 2013 (Turkish Statistical Institute TUIK, 2013-2014), and the infant mortality rate decreased from 53 deaths per thousand live births in 1993 to 12 in 2015 (Celik & Hotchkiss, 2000; The World Bank, 2017b). The role of improvements in healthcare accessibility, as well as increasing the rate of healthcare utilization, might be important parts of this success. On the other hand, structural development, which has improved the infrastructure of both primary care and rural areas, has contributed to the improved quality of care. Process quality has helped to improve training and provide better access to medicines and diagnosis (Akdağ, 2011).

It is clear that increased healthcare utilization also led to improved health status indicators in Turkey. The rates of prenatal care utilization and giving birth at health facilities has significantly increased in the past 20 years. The 2013 Turkey Demographic and Health Survey (TDHS) reported that the rates of women using prenatal care and giving birth at healthcare facilities were 97.0 percent and 97.2 percent, respectively (Hacettepe University Institute of Population Studies, 2014). Compared to the rates reported in 1998 [68.5 and 72.5 percent], (Celik & Hotchkiss, 2000; Ministry of Health, 1999), the rate of prenatal care and giving birth in healthcare facilities increased by 24.5 percent and 24.7 percent, respectively. According to a 2013 study, in the past twenty years the number of women having home birth deliveries without the assistance of healthcare professionals also decreased from 19.2 percent to 2.6 percent in 2013 (Hacettepe University Institute of Population Studies, 2014).



Several studies on the effectiveness of healthcare reforms in Turkey in the last decade pointed out that healthcare and health financing interventions under the Health Transformation Program (HTP) led to significant contributions in improving health status indicators in Turkey (Akinci, Mollahaliloğlu, Gürsöz, & Ögücü, 2012; Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, Ayar, et al., 2013; Ministry of Health, 2010; Tatar et al., 2011; World Health Organization, 2013). All of these studies indicate how effective and sound health policy decisions about healthcare delivery and finance might be important in increasing the effectiveness of the health system in a country. However, it has been proven that health services are not the only factor in improving health status. Social, economic and environmental factors also play very important roles in this improvement (Bartley, Sacker, Firth, & Fitzpatrick, 1999; Gijsbers van Wijk, Kolk, van den Bosch, & van den Hoogen, 1995; Ross, Mirowsky, & Goldsteen, 1990). Besides, another study showed that socioeconomic characteristics are factors that affect health status and healthcare utilization as well (Leclere, Jensen, & Biddlecom, 1994). Turkey has been described as a country witnessing significant improvements in its economy and social development (Ministry of Health, 2010).

### **1.3.2 TURKEY HEALTH REFORM**

The HTP has changed the main healthcare measures in Turkey to increase healthcare performance and quality by expanding access to effective healthcare services, reducing financial hardship during illness, and improving health outcomes (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, Ayar, et al., 2013). The reform also defined and focused three main objectives of healthcare system performance through the HTP: health indicators, protecting citizens from financial risks, and

healthcare users' satisfaction with the delivered healthcare services (Akdağ, 2011). One of the purposes of the implementation of the HTP was to improve the responsiveness of health services to meet user expectations and increase satisfaction (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, Ayar, et al., 2013). Therefore, patient satisfaction, health service access, service infrastructure, and process assessment are the criteria and parameters by which hospitals are evaluated through the Institutional Performance and Quality Development to develop the Service Quality Standards. Meanwhile, a strategic map has been drawn to identify objectives and indicators of the Turkey Health System Performance Assessment based on critical success factor, methods, and ultimate goals, as seen in Figure 1.2 (Akdağ, 2011).

The major reforms Turkey has implemented are intended to transform and improve the health system and its outcomes (see Box 1.2). WHO has called this transformation program an “example of successful health system reform” (World Health Organization, 2012). Under the reform, four different existing funds and programs, the Social Insurance Organization (SSK), Government Employees Retirement Fund (GERF), and the Social Insurance Agency of Merchants, Artisans, and the Self-employed (BAG-KUR), were merged into a single Social Security Institute (SSI) that provides a uniform benefit to all beneficiaries. Additionally, hospitals owned and operated by those different funds were unified into a public hospital system under the jurisdiction of the Ministry of Health (MoH) (World Health Organization, 2012).

## Turkish Health System Strategic Map

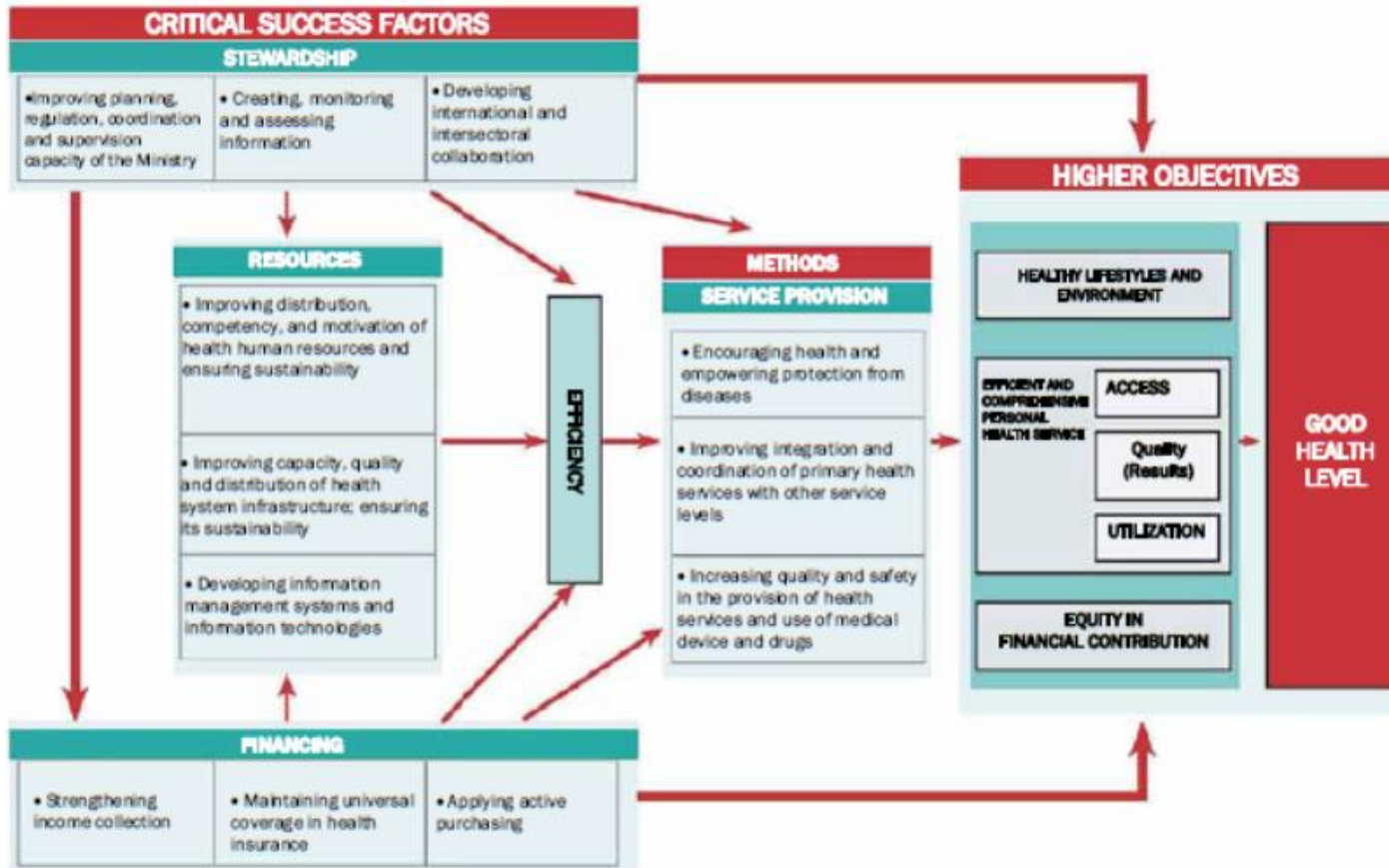


Figure 1.2 Turkish Health System Strategic Map (Akdağ, 2011)

As a result of the Health Transformation Programme (HTP), access to health care in Turkey has greatly increased. Since its start in 2003, the Health Transformation Programme has brought significant changes to the way health care in Turkey is provided and organised. Perhaps most significantly the HTP reforms introduced a provider (Ministry of Health and private providers) – purchaser (the Social Security Institution) split, and a consolidation of the five main social security funds into a unified social security system, the General Health Insurance Scheme (GHIS – *Genel Sağlık Sigortası*), which now covers the majority of the population, and services are provided by a mix of public and private sector facilities (Tatar et al., 2011). The Social Security Institution (SSI – *Sosyal Güvenlik Kurumu*) has become the single-purchaser of health-care services, funded by contributions from employers, employees and government contributions in cases of budget deficit. The Ministry of Finance finances the small numbers of “Green Card” holders, the scheme covering the health expenditures of the poor at all levels of care, and active civil servants. In addition a market of private health insurers is developing.

Total expenditure on health as a proportion of gross domestic product (GDP) has risen from 2.4% in 1980, to 5.3% in 2003 to 6.1% of GDP in 2008, still lower than the OECD average of 9.3% of GDP (OECD, 2013). Expenditure per capita (purchasing power parity) rose from USD 446.8 in 2003 to USD 906 in 2008 (OECD, 2013). 72.7% of health financing was from public sources in 2011, with the remaining proportion split between private out-of-pocket payments (19.2 %) and spending by corporations other than health insurance (8.1%).

The key legislation governing the Turkish health system is the 2006 Social Insurance and General Health Insurance Law, which outlines social security rules in general, and the regulation of the General Health Insurance scheme.

### **Box 1.2 Overview of the Turkish health system (OECD, 2014a)**

Universal Health Coverage (UHC) is an important way to achieve these purposes, which lead to the rapid expansion of health insurance coverage and access to effective healthcare services, reduce financial burden, and improve health outcomes for the entire population. The UHC is the system that provides high quality, affordable, accessible, and efficient health services; therefore, Turkey implemented the HTP to achieve universal health coverage via changing health system functions of stewardship and organization, financing, resource management, and service delivery. The changes in the health system took around 10 years to be fully realized (see Box 1.3) (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, & Ayar, 2013).

<ul style="list-style-type: none"> <li>• 2002: Justice and Development Party includes “improving access to health services” (urgent action plan) in its election platform.</li> <li>• 2002: Justice and Development Party is elected with a strong parliamentary majority in the Grand National Assembly.</li> <li>• 2002: Ministry of Health Decree (on the first day of the new government) to eliminate involuntary incarceration in hospitals of patients who cannot meet health-care expenses. The decree forbids hospitals from withholding the bodies of deceased patients when families are unable to meet hospital expenses.</li> <li>• 2003: The Health Transformation Program (HTP) is designed, building on work done in the previous decade, including elements of the Basic Health Law. Implementation of the HTP begins.</li> <li>• 2003: Introduction of higher salaries and performance incentives for hospital clinicians to encourage voluntary transition from dual practice to full-time working. Major expansion of the voluntary transition in 2005.</li> <li>• 2003–04: Active and retired civil servants are allowed to use private hospitals. Ambulance services declared free.</li> <li>• 2003–04: Green Card benefits expanded to include outpatient benefits and pharmaceuticals. Conditional cash transfers were introduced, covering 6% of the population (for pregnant women and children from the most disadvantaged households), to encourage use of maternal, neonatal, and child health services.</li> <li>• 2004: Contract-based employment introduced for healthcare personnel in rural and less developed regions. Performance-based payments piloted in ten Ministry of Health hospitals.</li> <li>• 2004: Major changes in pharmaceutical policy, including changes to pricing and to value-added tax. International reference price system introduced, replacing the cost-plus model to reduce the price of drugs.</li> <li>• 2004: Patient Rights Directive introduced in 2003 is implemented. Patient Rights Units established in hospitals. Electronic systems for patient complaints and suggestions introduced.</li> <li>• 2004: User choice of health-care providers (hospitals, primary care centers, and physicians) introduced.</li> <li>• 2005: Hospitals belonging to the Social Insurance Organization (146 hospitals) integrated with Ministry of Health hospitals. The total number of hospitals managed by the Ministry of Health reached 840 in 2011.</li> <li>• 2005: Contract-based family medicine with performance-based contracting piloted in Düzce province</li> </ul>	<ul style="list-style-type: none"> <li>• 2006: Universal health insurance is legally adopted as a part of broader social security reforms. Health expenditures start to grow and global budgets (budget ceilings) are introduced for Ministry of Health facilities to moderate growth in services to address unmet need.</li> <li>• 2006–10: Contract-based family medicine scaled up in all 81 provinces of Turkey.</li> <li>• 2007: Cost-sharing for primary health-care services abolished. Primary health care available for all citizens free at the point of delivery.</li> <li>• 2008: Social Security Institution established as a single organization for financial pooling and purchasing. The Social Insurance Organization, Bağ-Kur, and the General Employees Retirement Fund join the Social Security Institution.</li> <li>• 2008: Free availability of emergency services and intensive care services (including neonatal intensive care) for the whole population extended from public hospitals to all hospitals, including private hospitals with and without Social Security Institution contracts.</li> <li>• 2008: National air ambulance service introduced and is available to the whole population free of charge. Major expansion in 2010.</li> <li>• 2008: Cost-sharing in private hospitals for complex conditions (eg, burns, renal dialysis, congenital anomalies, cancer, cardiovascular surgery, and transplant surgery) abolished.</li> <li>• 2009: Mobile pharmacy services introduced to improve access in rural areas.</li> <li>• 2009: Tracking system for drugs introduced.</li> <li>• 2009: Central hospital patient appointment system introduced. Major expansion in 2011.</li> <li>• 2010: Active civil servants join the Social Security Institution.</li> <li>• 2010: The Ministry of Health strategic plan for 2010–14 developed.</li> <li>• 2010–11: Taxes for cigarettes and alcohol raised.</li> <li>• 2010–12: Laws on Hospital Autonomy and Restructuring the Ministry of Health for a stronger stewardship function are adopted. Public Hospital Authority and Public Health Institution established; Law on Full-Time Practice of University and Health Personnel and Amendments is adopted, paving the way for full-time practice in legal terms.</li> <li>• 2012: The Green Card scheme joins the Social Security Institution and unified social health insurance is fully implemented.</li> <li>• 2013: The Ministry of Health strategic plan for 2013–17 is developed.</li> </ul>
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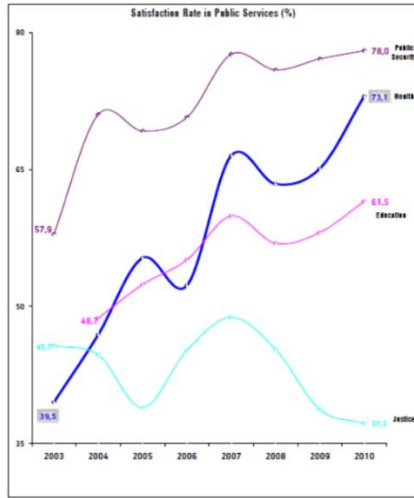
**Box 1.3 Towards universal health coverage: key developments in the HTP, 2002-12 (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, & Ayar, 2013)**

### 1.3.3 HEALTHCARE SATISFACTION IN TURKEY

Several national and international studies have focused on evaluating healthcare system reform in Turkey; however, these studies are not designed to capture people's opinions. The OECD & IBRD/World Bank (OECD/The World Bank, 2009), EUROPEP (Dagdeviren & Akturk, 2004), and Turkish Statistical Institute (TurkStat, 2011) have conducted surveys to investigate satisfaction with primary care services. A growing increase in public satisfaction with most aspects of primary care have been reported in the proportion of overall satisfaction (Jadoo et al., 2014). Overall patient satisfaction has increased with HTP (39.5 in 2003 to 73.1 in 2010 (see Figure 1.3) and 75.9 in 2011) (Akdağ, 2011; TurkStat, 2011) because access to healthcare and the number of visits to the doctor (3.2 in 2002 to 8.2 in 2011) (Erol & Özdemir, 2014) have increased. One study also concluded that more than half of the respondents (69.3%) have positive opinions regarding the current situation compared to the previous one in terms of accessibility, availability of resources, quality of care, and the attitudes of politicians to healthcare (Jadoo et al., 2014). However, after the HTP created fee-for-service, physicians have seen large numbers of patients and spent only about 5-10 minutes with each. Also, time spent for health education decreased due to the high workload, and the number of medical students increased remarkably (Aktan, Pala, & Ilhan, 2014).

As a result of the Health Transformation Program, access to healthcare, expanded coverage for the entire population, organization within the healthcare system, and health outcomes have greatly increased, but compared with other OECD countries Turkey still falls behind in terms of healthcare quality (OECD, 2014b). Therefore, while focusing on coverage and access were the right priorities in the beginning of the health transformation

program, Turkey's healthcare system now must focus on quality and outcomes (OECD, 2014a). Focusing on patient satisfaction is going to help to build on HTP's success as the emphasis shifts from encouraging high volumes of care to delivering high quality health services. Therefore, seeking to understand patient perspectives can help to improve the quality of health as well.



**Figure 1.3 Satisfaction Rate in Public Services (%) (Akdağ, 2011)**



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 REVIEW OF LITERATURE

In this chapter, the research on patient satisfaction with healthcare system is reviewed in the following order: (a)patient satisfaction, (b)measurement of patient satisfaction, (c)quality of healthcare, (d)conceptual models, and (e)theoretical framework.

#### 2.2 PATIENT SATISFACTION

Satisfaction is defined as the fulfillment of a need or desire (Webster & Webster, 2014), whereas it is accepted that patient satisfaction is complicated to define due to its multi-dimensional concept (Batchelor, Owens, Read, & Bloor, 1994). Consumer satisfaction, which is defined as satisfaction with goods or services, is similar to patient satisfaction, which relates to satisfaction with services rendered (Cohan, 2015).

Consumer satisfaction is also described as the reflection of the consumer's evaluation of various aspects of their healthcare experience (Parker, 2000).

Patient satisfaction is the way to learn how well the population has been served and is identified as an important outcome for healthcare system (Alexander et al., 1993). The issue of patient satisfaction with healthcare system has been commonly discussed and used to evaluate as well as improve quality of care (Chunuan, 2002). Therefore, better information regarding the factors that have affected satisfaction can assist healthcare providers, public policy analysis, healthcare managers, practitioners, and



planners to improve overall healthcare system as well as the quality of the services they deliver to users (Rosemarie Crow et al., 2002).

Health systems need to respond to people's expectations from perspective of patient experience. The increasing importance of patient experience can help to capture the 'responsiveness' of the health system, referring to the manner and environment in which people are treated when they seek healthcare (Bleich et al., 2009). Improving of health system is dependent to be monitored, and managed through understanding of its responsiveness to meet the needs and preferences of population. Accordingly, more accurate and appropriate evaluation of healthcare system can be done through considering the public/population views, experiences, and perceptions (Park et al., 2016).

In order to evaluate healthcare system performance, the measurement of patient satisfaction is an essential part in terms of service quality, and patient satisfaction is playing an increasingly crucial role in quality of care and healthcare delivery. Improving customer-patient satisfaction is the main goal of all quality management concepts, and focusing on quality and customer satisfaction are the criteria required by Total Quality Management (TQM)—concepts that believe customers ultimately define the quality through their satisfaction with a product or a service. Therefore, monitoring patient satisfaction has become both a standard to increase customer loyalty and an operating procedure in the healthcare system (Shivaji, 2012). Additionally, the U.S. Institute of Medicine (IOM) includes patient satisfaction and experience among its three priorities of what healthcare organizations want in the near future (Cohan, 2015) while patient satisfaction has become valuable for hospitals in the U.S. to measure their performance (Shivaji, 2012).

Although patient satisfaction is getting increasing attention from all parts, there has been some discussion regarding two independent modes of research in the service delivery performance in the past decades. The first mode of analysis, which is called “Objective” measures, involves measuring service delivery performance characteristics that uses data from official archives of public agencies to document such performance criteria as equity of policy inputs, outputs, and inputs as well as efficiency and effectiveness. The second mode, which is called “Subjective” measures, involves measuring a sample of population’ attitudes, perceptions, and experiences about service delivery through some form of survey research asked to evaluate the quality or quantity of a given service. Subjective indicators are constructed from the responses of population who are surveyed regarding their perceptions, experiences, and evaluations of services received (Brown & Coulter, 1983; Parks, 1984).

Several researchers have reported low measures of congruence between objective and subjective indicators and raised questions about the extent to which those two analytical modes produce consistent or contradictory results (Brown & Coulter, 1983; Parks, 1984). Some policy analysis has cast doubt on the utility of subjective indicators due to lack of strong relationships between objective indicators drawn from archives of public agencies and subjective indicators drawn from survey data (Parks, 1984), since sometimes satisfaction measures have not correlated very well with objective features of individual’s lives. For example, income does not have a very strong effect on satisfaction (Argyle, 2013). These critics raised the following questions: To what extent do population’s subjective evaluations reflect objective conditions of the a given service and what variables account for variance of subjective evaluations of the services (Brown &

Coulter, 1983; Ng, Eby, Sorensen, & Feldman, 2005)? Is it useful to use subjective indicators to evaluate the services?

Patient satisfaction studies have been used to reflect patients' perceptions, experiences, and evaluations of services received as a subjective mode of research that fulfills what being looked for and purposed (D. A. Baker & Crompton, 2000). Although patient satisfaction has been defined differently in many ways, patient satisfaction is useful as subjective mode to fit all definitions done by widely acceptable researchers. For instance, Ware et al. (1983) define 'patient satisfaction is a personal evaluation of healthcare facilities and provider services' (Ware, Snyder, Wright, & Davies, 1983), while Donabedian (1980) describes 'the provider's success at meeting those client values and expectations on which the client is ultimate authority' (Donabedian, 1980). Eriksen (1995) also concluded patient satisfaction and role of the subjective instrument as 'a rating or evaluation of a service or provider, based on comparison of the patient's subjective standards to care received, and represents a positive emotional response to comparison' (Eriksen, 1995).

Many theories have proved why and how patient satisfaction or consumer satisfaction is useful such as quality theories, social comparison, consumer behavior theories, and attribution theories. Social comparison theories concluding that people evaluate their lives by comparing themselves with others are also arguing subjective measurement is the way to conclude any related research. Also, attribution theories, which is psychological theory of attribution, have a similar approach underlying that people have the tendency to inference in a certain way because of something about the person such as attitude, character or personality (Johns, 1999).

### 2.2.1 DEFINING PATIENT SATISFACTION

Conceptual definitions of patient satisfaction are inconsistent and described differently (see Table 2.1) (Chunuan, 2002). However, some definitions are generally accepted and cited in the healthcare literature (Donabedian, 1988; Linder-Pelz, 1982; Ware et al., 1983), even each person has different definitions of patient satisfaction with healthcare services that depend on his or her expectations, knowledge, and experiences (Smith, 1992).

Patient satisfaction is also defined by the Robert Wood Johnson Foundation as a measurement designed to obtain reports or ratings from patients regarding services received from an organization, hospital, physician, or healthcare provider (Cohan, 2015). In this study, we use WHO's term 'responsiveness' to refer to patient satisfaction with the health system.

In an attempt to develop an instrument capable of evaluating patient satisfaction based on its definition, various types of the scales have been used to scaling responses in survey. This approach rating feature of response scale is able to determine patient satisfaction with overall health system to fully meet the definition of patient satisfaction (Forgas, 1995; Oliver, 2014b).

**Table 2.1 Definitions of Patient Satisfaction with Medical Care**

<b>Author and Year</b>	<b>Definitions</b>
Ware et al. (1978)	Patient satisfaction is a personal evaluation of health care facilities and provider services.
Donabedian (1980)	The provider's success at meeting those client values and expectations on which the client is ultimate authority.

Linder-Pelz (1982)	Patient satisfaction is the individual's positive evaluations of distinct dimension of health care.
Baker (1991)	Satisfaction is the judgment of the patient on the care that has been provided.
Carr-Hill (1992)	Patient satisfaction is a complex concept that is related to a number of factors including lifestyle, past experiences, future expectation and values of both individual and society.
Williams (1994)	Client satisfaction is of fundamental importance as a measure of the quality of care because it gives information on the provider's success at meeting those client values and expectations which are matters on which the client is the ultimate authority.
The Robert Wood Johnson Foundation	A measurement designed to obtain reports or ratings from patients about services received from an organization, hospital, physician, or healthcare provider
The World Health Organization (2000)	Patient satisfaction is the way to assess whether the system responds well or unresponsive to serve people through responsiveness measuring of how a health system performs to meet a population's expectations.

### 2.2.2 MEASUREMENT (DIMENSIONS) OF PATIENT SATISFACTION

A widely accepted study reviewed 111 theoretical and empirical articles to define the measurement of patient satisfaction with healthcare system and found eight distinguishable dimensions: art of care, technical quality of care, accessibility/convenience, finances, physical environment, availability, continuity, and efficacy/outcome of care (Ware et al., 1977). The art of care is supposed to capture the amount of physician caring towards the patient, such as concern, whereas the technical quality of care measures the patient's perceptions of the competence of providers.

Accessibility/convenience also measures satisfaction with the factors which are involved in arranging to receive medical care while the finance dimension measures the cost of care. Additionally, the availability dimension measures the satisfaction with the number of providers in the given area, while the physical environment measures satisfaction with the comfort. Satisfaction with continuity measures the regularity of care from the same providers. Efficacy/outcomes of care measures the satisfaction with a patient's improving and maintaining health status (Swanson, 2002). Besides, Weiss (1990) provided four factors as dimensions of patient satisfaction with healthcare system; characteristics of patient, characteristics of providers, aspects of the physician, and structural and setting factors (Weiss & Senf, 1990).

Most researchers have used a five-point Likert scale or seven-point Likert scale, which is the most widely used approach to scaling responses in survey (Oliver, 2014a). The seven-point scale used to evaluate models of emotion should contain a neutral point like "extremely satisfied" and "extremely dissatisfied" (Forgas, 1995). Researchers have used various types of the scales to measure patient satisfaction. Ware and Hays argued that a single rating feature of response scale, "excellent" to "poor" is the simplest method of assessing satisfaction (Ware Jr & Hays, 1988).

Type of question asked the population to rate their satisfaction for each services and organizations in the survey of this study contain the scale to measure patient satisfaction with overall healthcare system. The question used to evaluate overall satisfaction with healthcare system is that "In general in your country, are you satisfied the health services of the....?", and the Likert scale consisted of very satisfied, satisfied, neither satisfied nor dissatisfied, very dissatisfied, don't know, and refusal.

In order to develop a mechanism to evaluating patient satisfaction, one of the studies focused on satisfaction found that several factors have been identified that contribute to overall patient satisfaction. For instance, satisfaction with physician, availability, and wait time are included as the factors (DiTomasso & Willard, 1991). Moreover, another study found that four conceptualized categories, knowledge, access, competence, and trust are to contribute to overall patient satisfaction (Baer et al., 1999). Additionally, patient expectations of care have been found as a factor affecting patient satisfaction which differs greatly among patients (Thiedke, 2007).

Patient satisfaction with healthcare services has been associated with various factors as measurement including the changing of providers or health plans (McGlynn & Brook, 1996; Rubin et al., 1993), and the cost and quality of care received (Yucelt, 1995). One of the most comprehensive examination of patient satisfaction found that low levels of satisfaction (dissatisfaction) with healthcare services received are linked with poor health outcomes (Fitzpatrick, 1997). In addition, a study determined that satisfaction with provider staff (physicians and nurses) is a significant predictor associated with overall patient satisfaction; however, the size of the regression coefficients are nearly twice as large for nursing compared to physician satisfaction (Strasser, Aharony, & Greenberger, 1993).

Some researchers have studied the effect of patient demographics and health status on patient satisfaction with healthcare system. While sex and race seem to be unimportant (Marple, Kroenke, Lucey, Wilder, & Lucas, 1997), age appears to play a role in patient satisfaction; for instance, older patients tend to be more satisfied than younger patients (Hall & Dorman, 1990; Larsen & Rootman, 1976; Williams, 1994).

There are several approaches that have been developed to measure patient satisfaction with healthcare services. The dimensions of patient satisfaction with healthcare services are listed in Table 2.2 (Chunuan, 2002), and most of them fall under the categories of structure, process, and outcome of care.

**Table 2.2 Dimensions of Patient Satisfaction with Healthcare Services**

Author	Instrument	Number of Dimensions	Dimensions
Zyzanski, Hulka, & Cassel	Patient Satisfaction Questionnaire	3	1. Professional competence 2. Personal qualities 3. Cost/convenience
Ware et al.	Patient Satisfaction Questionnaire (PSQ)	8	1. Art of care 2. Technical quality 3. Accessibility/convenience 4. Finances 5. Physical environment 6. Availability 7. Continuity 8. Efficacy/outcome of care
Ware	No instrument (content analysis of published satisfaction instruments)	5	1. Quality of care 2. Accessibility/convenience 3. Finances 4. Physical environment 5. Availability
Weiss	literature review	4	1. Characteristics of patient 2. Characteristics of providers 3. Aspects of the physician 4. Structural and setting factors
Sutherland et al.	literature review	3	1. Attitude 2. Control over treatment 3. Continuity of care
Baker	Patient Satisfaction Questionnaire	5	1. Continuity 2. Accessibility 3. Availability 4. Medical care 5. Premises
DiTomasso & Willard	DiTomasso-Willard Patient Satisfaction Questionnaire (DWPSQ)	5	1. Satisfaction with physician 2. Dissatisfaction with practice management 3. Availability 4. Receptionist behavior 5. Wait time
Yucelt	Questionnaire (unnamed)	7	1. The cost and quality of medical care 2. Interpersonal skills 3. Competent and professional recognition of physicians



			<ol style="list-style-type: none"> <li>4. Information provided and attention given by physicians</li> <li>5. Waiting time</li> <li>6. Physical facilities</li> <li>7. Receptionists and nurses in physician's office</li> </ol>
Kane et al.	Questionnaire (unnamed)	3	<ol style="list-style-type: none"> <li>1. Quality of care</li> <li>2. Hospital care</li> <li>3. Physician time</li> </ol>
Loeken, Steine, Sandvik, & Laerum	Patient Satisfaction Questionnaire	4	<ol style="list-style-type: none"> <li>1. Structure: physical surroundings and convenience and accessibility</li> <li>2. Process: staff's interpersonal skills, information transfer, and perceived technical competence</li> <li>3. Discomfort: physical discomfort and psychological discomfort</li> <li>4. General satisfaction: future behavioral intentions and here and now satisfaction</li> </ol>
Buchner & Probst	Meta-analysis of Patient Satisfaction Questionnaires	7	<ol style="list-style-type: none"> <li>1. Overall satisfaction</li> <li>2. Consumer loyalty</li> <li>3. Quality of clinical services</li> <li>4. Access to medical care</li> <li>5. Physician choice</li> <li>6. Management of care</li> <li>7. Administrative services</li> </ol>

## 2.3 DETERMINANTS OF PATIENT SATISFACTION

A study conducted by Akdag and Zineldin (2010) that focused on quality of healthcare system and patient satisfaction to investigate the 5Qs model at Turkey found that quality of infrastructure (Q3), quality of atmosphere (Q5), and quality of object (Q1) are the factors that improve patients' satisfaction in hospital admission (Sinha et al., 2010).

While many investigators have presented theoretical justification for patient satisfaction as an independent variable in health and medical care research, Donabedian considered patient satisfaction as a dependent variable and argued that patient satisfaction is an ultimate outcome in evaluating quality of medical care (Ware et al., 1977).

### 2.3.1 SOCIO-DEMOGRAPHIC FACTORS

The socio-demographic characteristics of patients are the most often studied predictors of patient satisfaction with the healthcare system or providers (Hekkert,

Cihangir, Kleefstra, van den Berg, & Kool, 2009). Many socio-demographic factors including age, education, health status, race, marital status, income, social class, and working status have been studied and found to be associated with higher patient satisfaction (Alrubaiee & Alkaa'ida, 2011; Gaumer, 2006; Quintana et al., 2006). For instance, one of the studies conducted in Turkey found that there was a significant relationship between socio-demographic factors such as age, gender, marital status, education level, occupation, self-perceived health status, and area of residency with level of satisfaction at a confidence interval of 95% (Jadoo, Puteh, Ahmed, & Jawdat, 2012). In conclusion, even though some of socio-demographic factors such as age, gender, and race are not modifiable, they are crucial to take into account when conducting patient satisfaction studies (Lo, 2014).

Age is one of the most consistent predictors of patient satisfaction (Hall & Dornan, 1990; Jackson et al., 2001; Williams, 1994), whereas the effect of socio-demographic on patient satisfaction is not as clear as age, with mixed results from different studies (Jadoo et al., 2012). Many studies conclude that older patients tend to be more satisfied than younger patients (Alrubaiee & Alkaa'ida, 2011; Jackson et al., 2001; Tucker III, 2000). A study conducted by Jackson found out that patients who are 65 age and over were more likely to be satisfied with healthcare system compared to people who were younger (Jackson et al., 2001). Some results for the role of age in patient satisfaction suggest that the effect of age stems from different expectation and attitudes that older patients may hold, such as lower expectations of healthcare, and therefore such individuals can be easily satisfied with the healthcare system. Others have suggested that

older patients may be treated with more respect and form better relationships with providers.

Besides, the role of gender on patient satisfaction with healthcare system is not consistent. For instance, while a result concluded that gender seems to be unimportant (Jackson et al., 2001), another study found that women were more likely satisfied with healthcare system compared to men (Alrubaiee & Alkaa'ida, 2011). In addition, Nguyen found that men tended to be more satisfied than women and women tended to complain more often than men (Thi, Briancon, Empeur, & Guillemin, 2002). A result shows that while females were more satisfied with 67.5%, the highly-educated group was less satisfied compared to the less educated group, at levels of 40.7% and 68.6%, respectively.

The relationships between marital status and patient satisfaction are also found to be inconsistent (Quintana et al., 2006). The study concluded that single or divorced patients have higher patient satisfaction scores, whereas another study (Nicolucci et al., 2009) found that married and single patients are more satisfied than widowed and divorced patients. In addition, another study found that residence and marital status were significantly associated with satisfaction with the healthcare system ( $p < .05$ ) (Park et al., 2016).

Besides, health status, both physically and psychologically, is associated with patient satisfaction. Health status and health outcomes affect satisfaction; sicker patients and psychologically distressed patients record lower satisfaction (Rosemarie Crow et al., 2002). From social-demographic characteristics younger, less educated, lower ranking, married, poorer health and high service use were associated with lower satisfaction with healthcare system (Alrubaiee & Alkaa'ida, 2011).

One of the satisfaction studies that analyzed 139 articles to provide evidence about the determinants of satisfaction found that evidence about socioeconomic status and patient satisfaction is equivocal (Rosemarie Crow et al., 2002). However, more studies have found a relationship between income and education with patient satisfaction. For example, patients who have a lower education level were more satisfied compared to those with a higher education level (Hall & Dornan, 1988; Lo, 2014; Sitzia & Wood, 1997). Consistently with the other studies, a study concluded that dissatisfied respondents had significantly a higher level of education than satisfied ones ( $P < 0.001$ ) (Maharlouei, Akbari, Akbari, & Lankarani, 2017). In addition, patients who have higher household income have a negative significant correlation with satisfaction with healthcare system (Stepurko et al., 2016). The results can be explained by considering that those patients with more education and income who were less satisfied are likely to have higher expectations of their care, which results in more disappointment as well as dissatisfaction (Hall & Dornan, 1990).

### **2.3.2 STRUCTURAL CHARACTERISTICS**

Structural characteristics have been studied as a predictor of patient satisfaction with healthcare system or providers, including cost of care, access to care, convenience of care, utilization, and the organization of care (Cleary & McNeil, 1988). In terms of financial aspects of care, patients tend to be more satisfied with lower-cost plans as well as prepaid plans. Moreover, this satisfaction can differ by patient income level. Higher-income patients are less satisfied with prepaid plans than lower income patients (Swanson, 2002).

The organization of care is also related to patient satisfaction, but a very small portion of the total variance (less than 15%) is estimated in patient satisfaction. Smaller hospital size, non-teaching status, and rurality, as well as lower nurse burnout and turnover rate, are the specific organizational characteristics positively associated with patient satisfaction. Shorter appointment wait times and specialist availability and access are the outpatient characteristics that are found to positively correlate with higher patient satisfaction (Lo, 2014). A study found that there was no significant relationship between patient satisfaction with healthcare system and type of care (Park et al., 2016).

The role of geographic differences on patient satisfaction within a country or province has not received much attention (Barnett, 2011). Geographic factors have an influence on patient satisfaction with healthcare system. For instance, a study concluded that individuals living in urban areas were more satisfied (64.0%) than those living in rural areas (28.2%) when comparing the level of satisfaction with area of residency (Jadoo et al., 2012). On the contrary, another study found that patient satisfaction was higher among rural residents compared to urban, which could be explained by low expectations (Footman et al., 2013).

Moreover, a research concluded that insured patients were more likely to be satisfied with the healthcare system when compared to uninsured patients (OR 2.79, 95% CI 2.07-3.77) (Maharlouei et al., 2017). At the same time, a study found that private health spending resulted to be negatively correlated with patient satisfaction with healthcare system as an increase of private health expenditures made patient satisfaction lower by 98.7% (Xesfingi & Vozikis, 2016). In addition, another study concluded that

utilization does not have any effect on patient satisfaction with healthcare system (Jackson et al., 2001).

## 2.4 QUALITY OF HEALTHCARE

It is very complicated to measure and define quality of healthcare, yet quality of healthcare is an important issue in healthcare services (Donabedian, 1988; Turner & Pol, 1995). The definitions of quality of healthcare depend on who defines it and vary study by study. Some definitions of quality of care are presented in Table 2.3. The most important measurement of quality of care is better outcomes in healthcare, and outcomes are dependent on patient satisfaction and compliance with healthcare advice (Cohan, 2015).

**Table 2.3 Definitions of Quality of Healthcare (Chunuan, 2002)**

Author and Year	Definitions of Quality of Care
WHO	The extent to which the care provided, within a given economic framework, achieves the most favorable outcome when balancing risk and benefits
AMA	Consistently contributes to improvement or maintenance of the quality and/or duration of life
Donabedian	The management that is expected to achieve the best balance of health benefits and risks
Reerink	The outcome of an evaluation procedure
Williamson, Reerink, Donabedian, Turners, & Christensen	The extent to which achievable benefits of health care are actually achieved by both the consumers and providers. "Benefits" include health, economic, and "societal" (e.g. satisfaction, education, ethical-legal) result of care
Larrabee, Engle & Tolley	Quality is the presence of socially acceptable, desired attributes within the multifaceted holistic experience of being and doing
Grossman	An intent toward excellence in meeting the needs of the customer

Different dimensions of quality of care have been proposed in healthcare literature. For instance, while Turner & Pol argued that access, healthcare personal, clinical outcomes, and patient satisfaction are the dimensions of quality of care (Turner & Pol, 1995), Carey & Seibert found eight different dimensions of quality of care including physical care, nursing care, medical outcome, courtesy, food service, comfort and cleanliness, admissions/billing, and religious care (Carey & Seibert, 1993). Additionally, Proctor identified ten dimensions of quality of care, which include continuity of caregiver, environment, information, access, care and treatment, relationship (features of the staff-patient relationship), outcome, staff attributes, choice (involvement in care decisions, being offered choices about the care of service), and control (feeling of confidence, empowerment, and control over care) (Proctor, 1998).

#### **2.4.1 IMPROVING QUALITY OF CARE**

A study concluded that while better outcomes in healthcare may be the most important measurement of quality of care, outcomes are dependent on patient satisfaction and compliance with healthcare advice. Quality of care that is multi-dimensional with various factors, such as education, compliance, environment, sanitation, and housing, was linked to patient satisfaction (Cohan, 2015).

It is commonly accepted that quality of care is a multi-dimensional concept, and patient satisfaction is one indicator of quality of care (Alexander et al., 1993; Chunuan, 2002; Zineldin, 2006). Also, patient satisfaction with healthcare can be used to evaluate quality improvement and needs to be focused on as a critical outcome as well. Therefore, patient satisfaction is a crucial factor for improving quality of care (Chunuan, 2002; Lo, 2014).

## 2.5 MODELS AND STUDIES EXPLAINING PATIENT SATISFACTION

### 2.5.1 LINDER-PELZ EXPECTANCY-VALUE MODELS

The Linder-Pelz model is the most well-known value-expectancy model; it characterizes patient satisfaction as a positive attitude related to both patient beliefs that the care possesses certain attributes and patient assessment of those attributes (Linder-Pelz, 1982; Williams, 1994). A widely-accepted definition describes attitude as a general evaluation or feeling of favorableness or unfavorableness toward the object in question (Fishbein & Ajzen, 1977), that are the best explained by the model. Patient satisfaction is based on two distinct parts of information: attribute evaluations and belief strength. The equation of attitude consists of the multiplication of measures of belief strength (B) about attributes and measures of evaluation of those attributes (E), and then the products are summed<sup>1</sup>. The formula shows a significant correlation between BE and direct measures of satisfaction (Linder-Pelz, 1982).

$$\text{attitude} = \sum_{i=1}^n B_i E_i$$

The earlier perception and attitude variables, which are argued determinants of satisfaction with healthcare, were defined in Table 2.4. Whereas the theory identified those social psychological variables as the determinants, patient demographic and health

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<sup>1</sup> “For example: in attempting to measure attitudes towards a clinic, a set of clinic attributes would be identified and a set of item statements developed:

1. The clinic is for everybody;
2. Going to the clinic helps people feel better;
3. A clinic visit costs a lot of money;
4. There are long waiting lines at the clinic;
5. The clinic is very popular.

Each of these items associates the object (clinic) with an attribute, namely, access, efficacy, cost, convenience, popularity. Respondents would then be asked to indicate belief strength (B) and to provide evaluations of those attributes (E). The B\*E products are then computed for each item and a score for attitude to clinic is obtained by summing these products.” (Linder-Pelz, 1982)



characteristics of the healthcare system weren't discussed as the determinants (Linder-Pelz, 1982).

**Table 2.4 The Antecedent Perception and Attitude Variables which are hypothesized determinants of satisfaction with healthcare (Linder-Pelz, 1982)**

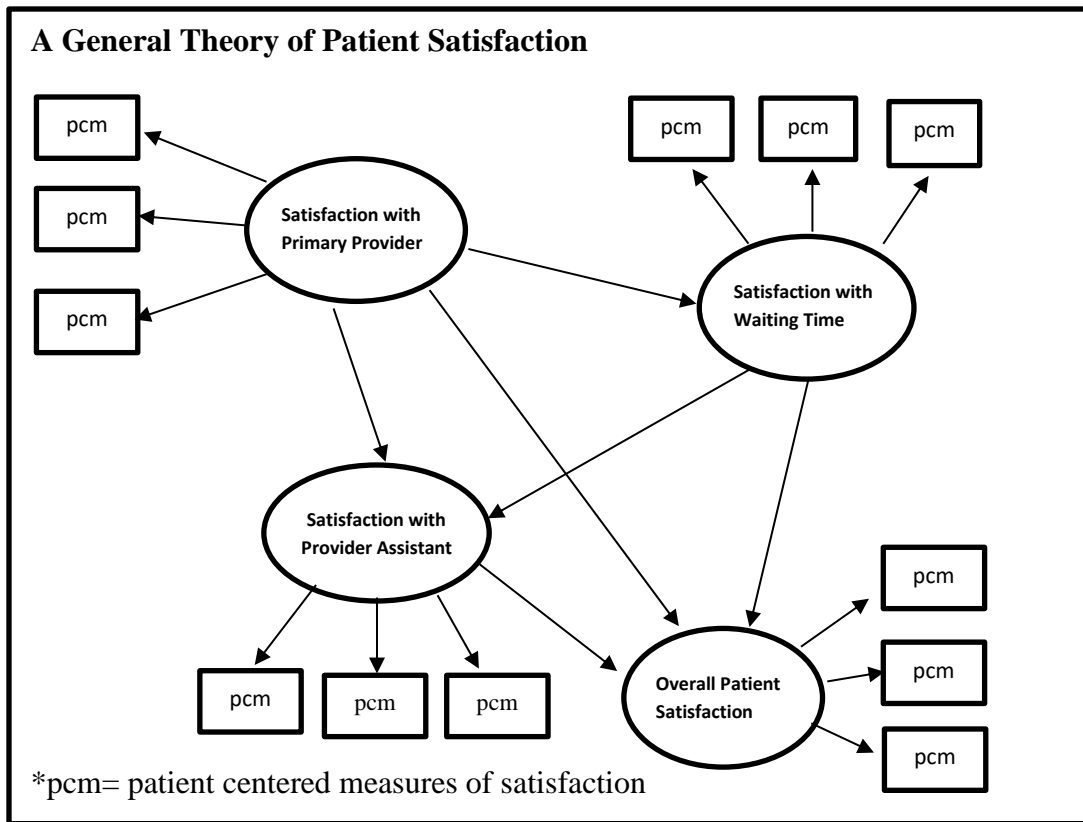
<b>Variable</b>	<b>Definition</b>	<b>Reasons for inclusion in hypotheses</b>
Expectations (Perception)	Subject of beliefs (the information an individual has about an attribute of an event/object); subjective probability of that attribute being associated with an event; anticipated occurrence; perceived probable outcome	Beliefs about the probability of certain attributes being associated with an object, and evaluation of the importance of those attributes, are the building blocks of 'satisfaction'.
Value (Attitude)	Evaluation, in terms of good/bad or important/unimportant, of an attribute or an aspect of a health care encounter	
Entitlement (Perception)	An individual's belief that he has proper, accepted grounds for seeking or claiming a particular outcome (based on Webster); that which is mandated.	Discrepancy, fulfillment and equity theories in the satisfaction literature: relative deprivation theory: and Thibault and Kelley's social comparison theory
Occurrences (Perception)	That event which actually takes place: the perception of what occurred regarding an aspect of a health care encounter.	Satisfaction theories found that perceived occurrences were the most important of the perception variables explaining client satisfaction
Interpersonal comparisons (Perception)	Individual's rating of what takes place (the health care encounter) by comparing it with all other such encounters known to or experienced by him/her	Thibault and Kelley's social comparison theory

### **2.5.2 ARAGON'S PRIMARY PROVIDER THEORY AND MODEL**

In the patient service satisfaction theory, three fundamental realities are shown to drive patient satisfaction in healthcare services. First, patient satisfaction significantly affects a hospital's reputation in the community. Second, patient satisfaction is used as an important measure of service quality. Third, patient satisfaction is associated with patient compliance, clinical outcomes, and legal action against clinicians; therefore, physicians are paying increased attention to patient satisfaction. The theory of patient service satisfaction suggests that satisfaction or dissatisfaction occurs at the nexus of patient expectations and the primary provider's power.

According to the theory, patient service satisfaction is the function of an underlying network of satisfaction constructs including satisfaction with the primary provider, provider's assistants and waiting time (see Figure 2.1). The theory uses patient-centered measures and judgment of quality of service that is done only by patients. The construct of patient's satisfaction theory is hierarchically related to patient expectations (Aragon & Gesell, 2003).

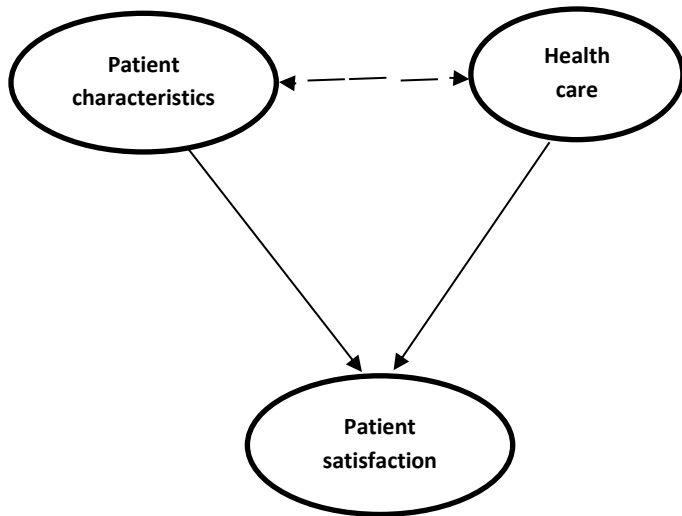
The primary provider theory of patient service satisfaction was also utilized to conduct research and test the model using multigroup structural equation modeling, and the results supported the model's robustness. Waiting time, physician service, and nursing satisfaction were significant, and explained 48%, 41% and 11% of overall satisfaction (Aragon & Gesell, 2003).



**Figure 2.1 Primary Provider Theory of Patient Service Satisfaction (Aragon & Gesell, 2003)**

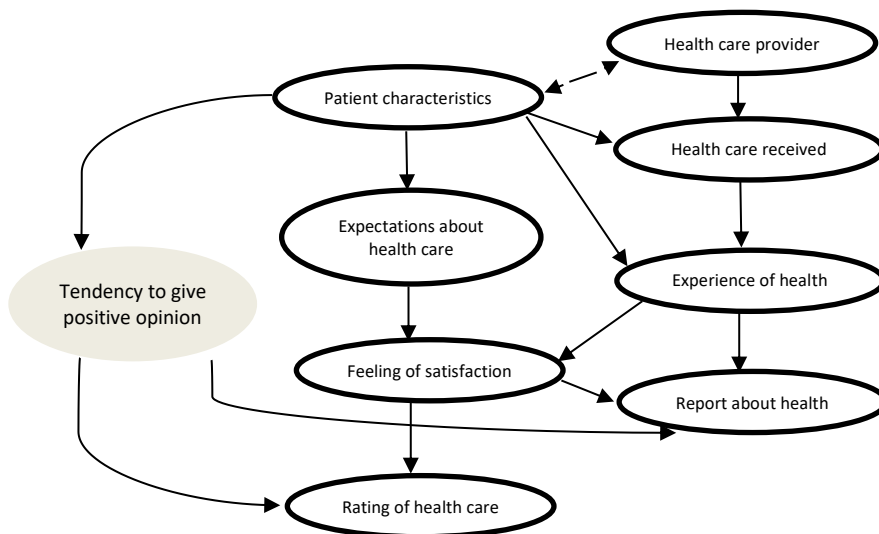
### 2.5.3 GREEN'S MODEL OF PATIENT SATISFACTION

Green's model of patient satisfaction proposed that patient characteristics and healthcare provider determine patient satisfaction as two separate groups of variables (see Figure 2.2). To keep from having an over-adjustment problem, the model also proposed a detailed model by examining the details explaining how patient characteristics affect patient satisfaction, such as patients' expectations about care, feelings, rating of healthcare, and their tendency to praise or criticize (Green & Davis, 2005).



**Figure 2.2 Simple Model for Case-mix Adjustment of Satisfaction Scores (Green & Davis, 2005)**

The added tendency in the detailed model is to provide a positive opinion of the depicted model (see Figure 2.3). Patient characteristics are linked with experience of health, expectations regarding care, type of healthcare received, and tendency to provide a positive opinion. Rating of healthcare or reports of healthcare are influenced by these intermediate variables (Green & Davis, 2005).

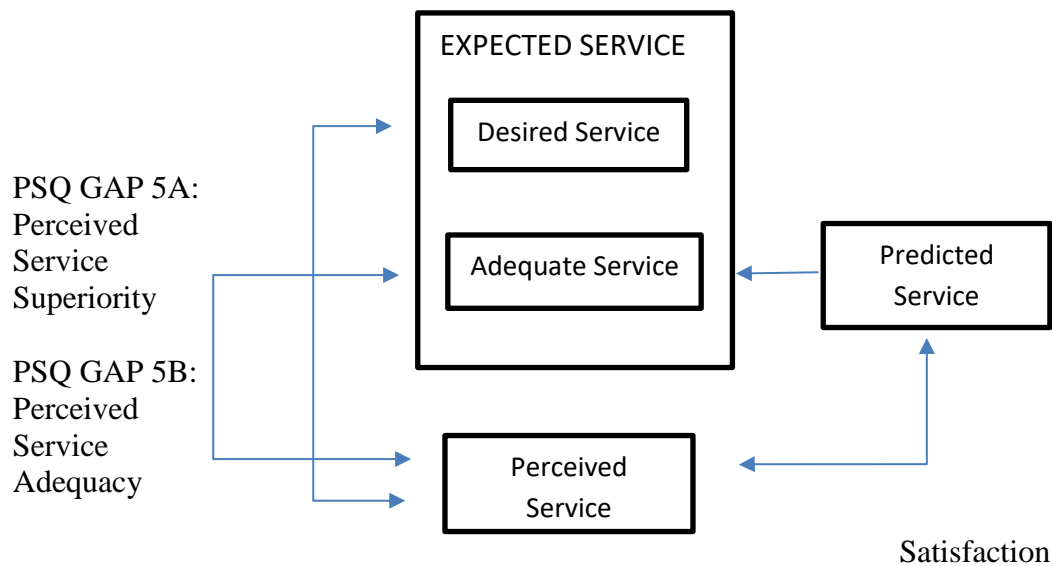


**Figure 2.3 Detailed Model for Case-mix Adjustment of Satisfaction Scores or Patient Report Scores (Green & Davis, 2005)**

#### **2.5.4 PARASURAMAN, ZEITHAML, AND BERRY'S GAPS MODEL OF SERVICE QUALITY**

The Gaps Model of service quality is a widely accepted and used theory to define and model quality. As customer assessments of service quality result from a comparison of service expectations with actual performance, the role and importance of expectations on customer satisfaction and service quality have been acknowledged (Zeithaml, Berry, & Parasuraman, 1993). Three underlying themes were discussed. First, for the consumer service quality is more difficult to evaluate than goods quality. Second, a comparison of consumer expectations with actual service performance affects service quality perceptions. Lastly, quality evaluations involve the outcome of a service as well as the process of service delivery (Anantharathan Parasuraman, Zeithaml, & Berry, 1985).

Additionally, quality is a comparison between expectations and performance, and quality evaluations involve outcomes and processes. Satisfaction with services is also related to expectations based on their research on the paradigm, where services are related to confirmation or disconfirmation of expectations (Anantharathan Parasuraman et al., 1985). The model argued that the Gap5 underlines the critical differences between customer satisfaction and perceived services quality assessments (see Figure 2.4). As conceptualized, assessments of customer satisfaction result from a comparison between perceived service and predicted service, which is referred to as Gap5 in their model of service quality (Zeithaml et al., 1993).



**Figure 2.4 Comparison between Customer Evaluation of Perceived Quality and Satisfaction (Zeithaml et al., 1993)**

The gaps in the concept of the service quality model on the service marketer's side and consumer's side are discussed and presented via propositions. Each of these gaps occurring in organizations affects service quality from the consumer's standpoint. These organizational gaps can impede delivery of services that customers perceive to be of high quality (Anantharathan Parasuraman, Berry, & Zeithaml, 1991; Anantharathan Parasuraman et al., 1985).

## 2.6 THEORITICAL FRAMEWORK

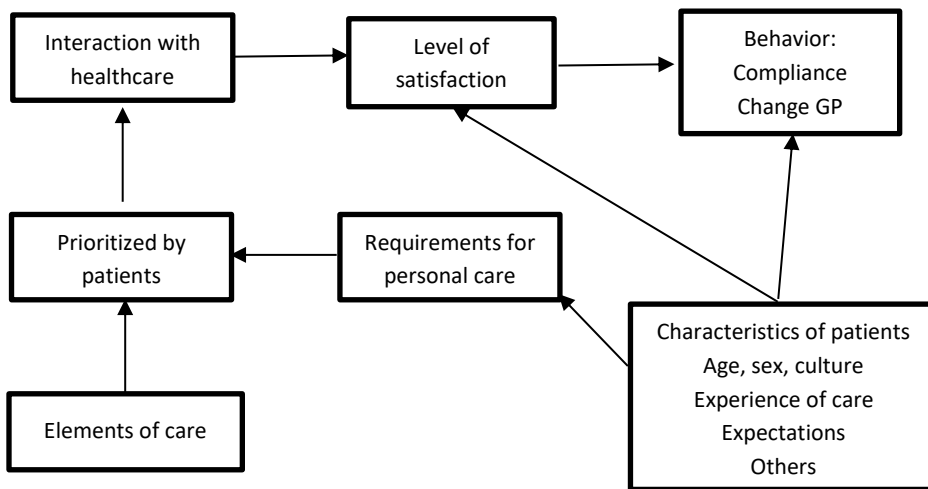
A widely used theories in healthcare research is used in this study, and the framework for the proposed study was based on Donabedian's conceptual framework, Baker's Model, and Latter Model of Satisfaction. Several theories have been posited to characterize patient satisfaction. The conceptual model for this study can be broadly described the Donabedian "Structure-Process-Outcome" framework.

### 2.6.1 BAKER'S MODEL

Many researchers have proposed different conceptual models to understand patient satisfaction. Due to the lack of an adequate theory to explain the meaning of satisfaction, Baker's theory serves as a pragmatic model in that it links together available empirical evidence about patient satisfaction without recourse to more general social or psychological theories of behavior, other than to define satisfaction as attitude (R. Baker, 1997).

Baker proposed a model of patient satisfaction in 1997 (see Figure 2.5). Firstly, in the model attitude, which is generally learned from experience, was defined as an evaluative judgment. Even though the theory states that patient expectation is the most important aspect of patient satisfaction, attitude is considered as a matter of perception, where some elements of care may be more important than others on a patient-to-patient basis. Secondly, satisfaction is also considered to be a continuous rather than dichotomous variable in the model. Thirdly, elements of care have affected patient satisfaction differently. For instance, a patient can be satisfied with one element of care such as the appointment system, but may not be satisfied with another such as the clinical examination. Therefore, a measure of overall satisfaction should evaluate all relevant elements of care. Fourthly, patients' characteristics can impact their behavior towards care and are shown as affecting the priorities they assign. Age, sex, culture, experience of care, expectations, health, mood, and other factors can influence patients' characteristics. Finally, patients' future behavior, such as changing doctors or compliance with advice, can be affected by the level of patients' satisfaction (R. Baker, 1997).

Many widely accepted older studies also relate satisfaction to an attitude. It is generally argued that satisfaction is closely related to a patient's general attitude toward the service they received, where attitude is defined as perceived service quality (Bitner, 1990; Oliver, 1981; Swan, 1983). Attitude is defined as the consumer's judgment regarding a provider's overall excellence, which creates perceived quality that is similar to an individual's general attitude toward a provider (Arun Parasuraman, Zeithaml, & Berry, 1988).



**Figure 2.5 Revised Model of Patient Satisfaction (R. Baker, 1997)**

In addition, the theory underlines how satisfaction is supposed to be measured and helps to describe the significance of the findings. Patients will be satisfied when the expectations for the elements of care are met or exceeded.

### 2.6.2 LATER MODEL OF PATIENT SATISFACTION

A similar model was proposed by Jackson and colleagues in 2001 (see Figure 2.6). Demographics, such as age, and sex, expectations, and health status determine the level of patient satisfaction in cases where the healthier patient is going to be the more satisfied patient (Jackson et al., 2001). It has been argued that most of the studies that



focused on measuring predictors of satisfaction have explained only a small portion of satisfaction variance, which doesn't pass more than 20% (Jackson & Kroenke, 1997). The Later Model of patient satisfaction explained 38% of the variance in satisfaction, which is considerably higher than most studies (Jackson et al., 2001).

Patient Satisfaction = Demographics – Expectations – Health Status

**Figure 2.6 Later Model of Patient Satisfaction (Jackson et al., 2001)**

### **2.6.3 DONABEDIAN'S CONCEPTUAL FRAMEWORK**

Defining quality in healthcare is difficult, and Donabedian created a conceptual framework to measure healthcare quality. Donabedian classified the assessment of the quality of care into three categories: structure, process, and outcome of care (Donabedian, 1966). In this three-part approach to quality assessment, each component is linked to the others so that they all work together. A good structure increases the probability of a good process, and a good process increases the probability of a good outcome (Donabedian, 1988). Whereas structural quality evaluates health system characteristics, process quality evaluates interaction between clinicians and patients, and outcomes assess changes in patients' health status (Shivaji, 2012).

Moreover, structural characteristics have included the attributes of material resources, human resources, and organizational structure. Structural characteristics are considered indirect measurements of quality, measuring factors such as ownership, size, and technology. The concepts of these three categories are briefly defined below (Donabedian, 1988):

The concept of "structure" denotes the attributes of the setting in which care occurs. This includes the attributes of material resources (such as

facilities, equipment, and money), human resources (such as number and qualifications of personnel), and organizational structure (such as medical staff organization, methods of peer review, and methods of reimbursement). The concept of “process” denotes what is actually done in giving and receiving care. It includes the patient’s activities in seeking care and carrying it out as well as the practitioner’s activities in making a diagnosis and recommending or implementing treatment. The concept of “outcome” denotes the effects of care on the health status of patients and populations. Improvements in the patient’s knowledge and salutary changes in the patient behavior are included under a broad definition of health status, and so is the degree of the patient's satisfaction with care.

The human, physical, and financial resources are the parts of “structure” that provide medical care and describe how medical care is financed and delivered (Swanson, 2002). Patient satisfaction is influenced by hospital organization and cost of care. While the basic characteristics of structure include the physical and organizational environment, the structure of care is focused on two main factors: (a) number, distribution, and qualifications of professional personnel, and (b) the number and size of hospitals, available equipment, and geographic distribution of hospitals and other facilities. At the same time, hospital resources and a suitable system of healthcare delivery have effects on quality care. Another study found that physical environment is one of the dimensions of patient satisfaction with healthcare (Chunuan, 2002).

Process denotes the set of activities that occur between practitioners and patients (Swanson, 2002). A study found that interpersonal relationships affect a patient’s

perception of quality of care and suggested that patient satisfaction is significantly influenced by personal interactions between caregivers and patients. Due to the importance of direct interactions, the process of healthcare is mainly focused on the patient-physician relationship (Chunuan, 2002; Shivaji, 2012).

In addition, outcome refers to the change in a patient's health status (Swanson, 2002). Researchers found that patient satisfaction with healthcare is positively associated with changes in health status, and thus healthier patients are more likely to be satisfied with healthcare. Furthermore, low levels of satisfaction (dissatisfaction) with healthcare services received is linked with poor health outcomes (Rosemarie Crow et al., 2002; Fitzpatrick, 1997).

## 2.6.4 CONCEPTUAL FRAMEWORK

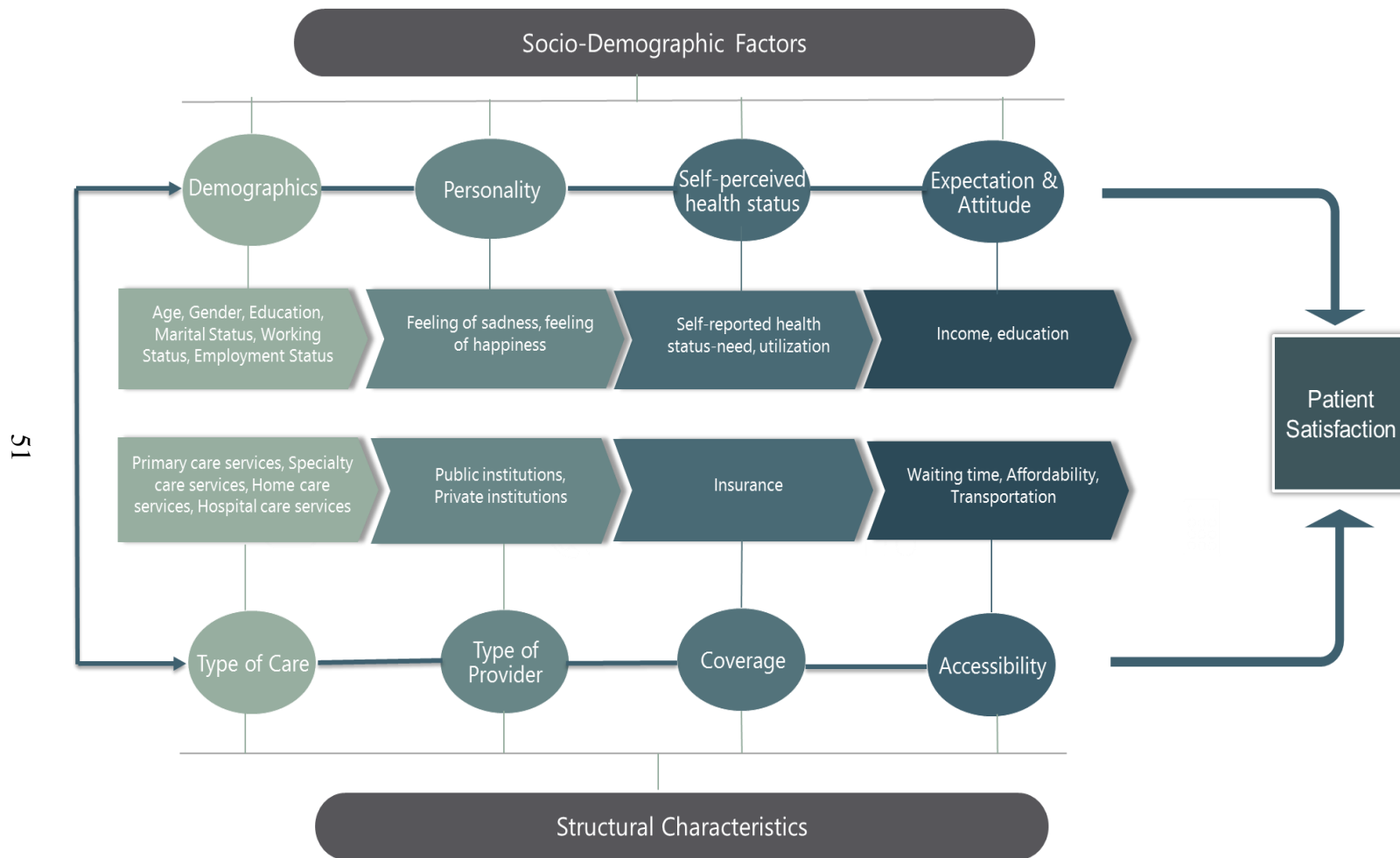


Figure 2.7 Conceptual Framework

## CHAPTER 3

### RESEARCH QUESTIONS AND METHOD

#### 3.1 RESEARCH QUESTIONS

This study has two main research questions with several sub objectives as listed below. The first question is related identifying factors affecting overall patient satisfaction with the healthcare system. The sub objectives of the question are (1) to explore the change in patient satisfaction level over years, and (2) to examine the trends in patient satisfaction as a result of major healthcare reforms under Turkish healthcare transformation. The quantitative analysis also analyzed how individual level characteristics affect satisfaction with overall healthcare system in Turkey. More specifically, the research questions are:

What is the effect of demographic and structural factors on overall patient satisfaction with the healthcare system of Turkey?

How did the overall patient satisfaction change over the years from 2008 to 2012?

The second main objective of this study is (1) to explore the relationship between each of the healthcare service types and individual level patient satisfaction with. The methodology employed to test the research questions is presented in this chapter. The research question is;

What is the effect of demographic and structural factors on patient satisfaction with specific healthcare services?

## **3.2 DATA SOURCES**

The primary source of data for this study is the Turkey Health Survey (THS), which is conducted by the Government of Turkey. The survey collected data through face to face interviews of adults from sampled households. The survey was carried out by Turkish Statistical Institute.

The data were collected every other year and the data set are available for the years 2008, 2010, 2012 and 2014. However, 2014 dataset did not collect information on satisfaction with healthcare system. Therefore, the study could not use 2014 dataset due to lack of information on patient satisfaction. The survey covered all the geographical regions or areas of the country, but the data set available for further analysis does not report geographic area other than indicating whether the household resides in rural area or urban area. Since the geographic location of individuals surveyed is not known, it was not possible to incorporate geographic availability of health providers with the individual data. The survey is briefly described in the next section.

### **3.2.1 TURKEY HEALTH SURVEY**

The general purpose of the survey is to collect information about health profile of individuals and health indicators to define national needs as well as enabling international comparisons. This is a specific survey conducted to explore the degree of health development of the country. The survey aims to obtain many indicators at both national and international levels in the field of health which cannot be derived regularly from administrative registers (TurkStat, 2017).

Turkey Health Survey is based on the European Health Interview Survey questionnaire that was created by Eurostat, consisting of three age groups (0-6, 7-14, and

15 and older). The questionnaires for children ages 0-14 were filled out by parents. The question about satisfaction with healthcare system was only asked to adults to respond. Since the satisfaction questions are specific to adults, only the adult population of the survey was used excluding all other individuals from the data set. Adult participants of the survey were chosen using two-stage stratified cluster sampling through the “National Address Database (NADB)” constituting a base for “Address Based Registry System (ABRS)” (Global Health Data Exchange, 2016; TurkStat, 2017).

The dataset collected information from adults on the following: general health status, diseases and accidents, chronic diseases, functional abilities in carrying out daily activities, personal care, use of health services, use of medicines, vaccinations, height and weight, smoking status and alcohol consumption, etc.

### **3.3 VARIABLES**

The outcome of interest of the study is the level of patient satisfaction with specific healthcare types as well as overall healthcare system. All covariates were selected based on previous findings, and theoretical models of analyzing patient satisfaction (Bleich et al., 2009; Kane, Maciejewski, & Finch, 1997; Thiedke, 2007; Thompson & Sunol, 1995). For example, Green’s model, Baker’s model, and Later model of patient satisfaction used patient characteristics and healthcare system characteristics to identify patient satisfaction with healthcare system.

#### **3.3.1 DEPENDENT VARIABLE**

In this study, level of patient satisfaction was estimated using the following three questions asked in the surveys: “In general in your country, are you satisfied with the health services of the....?”, where responses are on a five-point Likert scale (very

satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, very dissatisfied) (TurkStat, 2017). The survey asked the following seven questions about patient or consumer satisfaction: (1) are you satisfied with the health services of the Health centers and MCH/FB centers, (2) are you satisfied with the health services of the Public hospitals(including emergency departments), (3) are you satisfied with the health services of the Private health institutions(including emergency departments), (4) are you satisfied with the health services of the Family doctors or GPs, (5) are you satisfied with the health services of the Specialists, (6) are you satisfied with the health services of the Dentists, (7) are you satisfied with the health services of the Health professional other than doctors.

Satisfaction was measured using these seven questions and the level of satisfaction, by definition, ranges from 1 (very satisfied) to 5 (very dissatisfied) for each of the service provider types: Health centers and MCH/FB centers, Public hospitals (including emergency departments), Private health institutions (including emergency departments), Family doctors or GPs, Specialists, Dentists, and Health professional other than doctors. Before analyzing the data, the dependent data was prepared in the following steps. In order to verify that the internal consistency of the satisfaction scale is sufficient, we conducted reliability analysis, which, combined with the results of factor analysis confirmed that it is justified to use mean satisfaction score as a measure of overall satisfaction. The Cronbach's alpha of 0.892 corresponds to high reliability and the statistic does not increase if we exclude any of the ratings from the scale.

- a. We check the reliability of the question to determine if the answers given by responders are consistent or not. Reliability should be checked only on questions which are similar in nature. Since here all question asks the responder how much



they are satisfied with health care services, and the responses are coded in similar way, we can run reliability test on all of these 7 questions. To check reliability, we check the overall Cronbach's alpha of all questions combined and also Cronbach's alpha if the item is deleted. Cronbach's alpha measures the internal consistency of a set of items as a group. If, after deleting a variable, Cronbach's alpha becomes higher than combined Cronbach's alpha, then we say that variable is not consistent enough. The result shows that overall Cronbach's alpha is 0.860 and for every dependent variable, 'Cronbach's alpha if deleted' doesn't exceed 0.860 indicating that the questions are consistent. The test shows that every variable used in the model is reliable.

**Table 3.1 The reliability of the questions**

<b>Reliability Statistics</b>				
Cronbach's Alpha	N of Items			
.860	7			

<b>Item-Total Statistics</b>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
are you satisfied the health services of the Health senters and MCH/FB centers	4.8537	9.703	.656	.836
are you satisfied the health services of the Public hospitals(including emergency departments)	4.9890	9.208	.648	.838
are you satisfied the health services of the Private health institutions(including emergency departments)	4.8483	10.188	.555	.850
are you satisfied the health services of the Family doctors or GPs	4.8336	9.781	.659	.836
are you satisfied the health services of the Specialists	4.8022	10.063	.685	.834

are you satisfied the health services of the Dentists	4.8261	10.258	.585	.846
are you satisfied the health services of the Health professional other than doctors	4.9693	9.602	.624	.841

- b. Next, we run a factor analysis on all of the 7 dependent variables to compute a single variable which can be used to measure overall satisfaction. We are using factor analysis as we want to reduce the dimensionality, but retain most of the variability of the data. The key concept of factor analysis is that multiple observed variables have similar patterns of responses because they are all associated with a latent (i.e. not directly measured) variable. In this case the latent variable is overall satisfaction. In every factor analysis, there are the same number of factors as there are variables. Each factor captures a certain amount of the overall variance in the observed variables, and the factors are always listed in order of how much variation they explain. The eigenvalue is a measure of how much of the variance of the observed variables a factor explains. Any factor with an eigenvalue  $\geq 1$  explains more variance than a single observed variable. The relationship of each variable to the underlying factor is expressed by the so-called factor loading. Factor loading can be obtained from component matrix. We can multiply factor loading of each variable with eigenvalue to create a weight for that variable. This weight tells how much importance that variable has in terms of variability explained. we add all these weights and create a new variable by multiplying weights to every variable then adding them all and finally dividing the whole thing by total weight to standardize it. Thus, We get a new variable

measuring overall satisfaction and this contains information about all the variables.

b.1. First we standardize the data by coding (1=-2) (2=-1) (3=0) (4=1) (5=2).

After recoding the dissatisfaction is represented by negative values and satisfaction is represented by positive values. Thus for any satisfaction question if the numerical value is higher, it means more satisfaction.

b.2. In order to run factor analysis, we need to test if factor analysis is suitable for our data or not. We use factor analysis to create weights for each dependent variable. For this we first check the KMO and Bartlett's test. Here KMO value is between 0.8 and 1 indicating the sample is adequate. Also Bartlett's test of sphericity is significant indicating study is significant and factor analysis can be applied here. Bartlett's test is used to test if the samples are from population with equal variance (to test homogeneity of variance which is an assumption for factor analysis).

**Table 3.2 KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.888
Bartlett's Test of Sphericity	Approx. Chi-Square	90113.844
	df	21
	Sig.	.000

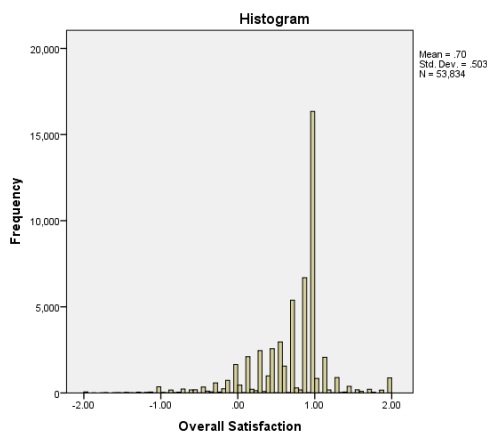
c. Next, we check the total variance explained and component matrix. We multiply the eigen value with every component in component matrix. These are going to be our weight for every variable. We also calculate the total weight. The overall satisfaction index is calculated by multiplying the weights to the corresponding variable and adding them and finally dividing them by total weight (19.864149).

In our data, all the weights are positive so the final satisfaction will indicate higher level of satisfaction if the value is high.

**Table 3.3 Factor Analysis of Dependent Variables**

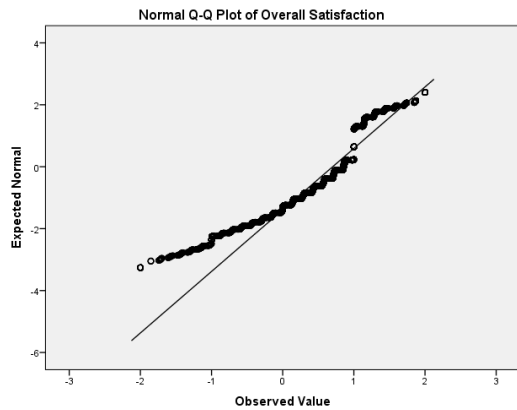
<b>Total Variance Explained</b>						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.837	54.812	54.812	3.837	54.812	54.812
2	.722	10.313	65.125			
3	.608	8.690	73.815			
4	.560	8.001	81.815			
5	.497	7.102	88.917			
6	.441	6.302	95.219			
7	.335	4.781	100.000			
Extraction Method: Principal Component Analysis.						
<b>Component Matrix<sup>a</sup></b>						
	Component					
	1					
are you satisfied the health services of the Health senters and MCH/FB centers	.761	2.919957				
are you satisfied the health services of the Public hospitals(including emergency departments)	.755	2.896935				
are you satisfied the health services of the Private health institutions(including emergency departments)	.672	2.578464				
are you satisfied the health services of the Family doctors or GPs	.767	2.942979				
are you satisfied the health services of the Specialists	.786	3.015882				
are you satisfied the health services of the Dentists	.702	2.693574				
are you satisfied the health services of the Health professional other than doctors	.734	2.816358				
Extraction Method: Principal Component Analysis.		19.864149				
a. 1 components extracted.						

- d. We create a new variable by multiplying the values of standardized dependent variables with the corresponding weights and adding them and finally dividing them all by total weight. We call it overall satisfaction. This newly formed variable has minimum value of -2 and maximum value of 2. So, if for a person, overall satisfaction is 2, that means he or she is very satisfied with all the health care services. Similarly, if the value is -2, he/she is very dissatisfied with all the health services. The mean of this variable is 0.7024 that is on an average the overall satisfaction of people is 0.7024 and if for a person, overall satisfaction is more than 0.7024, he/she is more satisfied with overall health care services than an average person.
- e. Next, we will check the normality of the final satisfaction. For this we will use K-S test for normality. Here, the null hypothesis is that the data follows Normal distribution. We reject the hypothesis if the p-value is less 0.05, that is the data doesn't follow normal distribution.

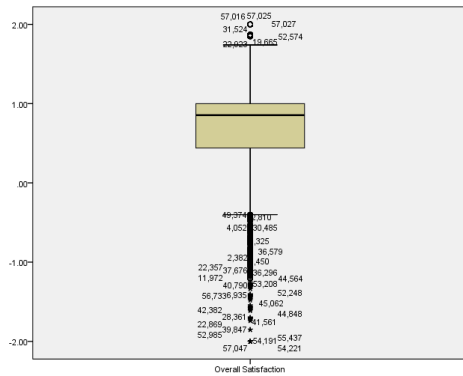


**Figure 3.1 K-S Test**

The distribution of overall satisfaction is illustrated using the histogram presented above. With mean equal to .7024 and the standard deviation of 0.503, overall satisfaction's distribution is sharper (has a higher kurtosis) than the normal distribution, because rating of 1 is very popular among respondents, implying that many respondents were equally satisfied with all aspects of healthcare services and gave them 1 points («satisfied»).



**Figure 3.2 Normal Q-Q Pilot test**



**Figure 3.3 Distribution of dependent variables**

### 3.3.2 INDEPENDENT VARIABLES

In this study, predictor variables consist of social-demographic factors, and structural characteristics of healthcare system. The selection of these variables was based

on previous research, framework, theory, conceptual model, and the availability of variables in the THS dataset for 2008, 2010, and 2012. For instance, the variables include age, gender, area of residency (urban-rural), marital status, working status, education, source of income, net monthly income, feeling of happiness, health status, accessibility, type of care, health coverage and utilization.

There are also 6 questions in the questionnaire that asks patients happiness. Now all these questions are asked on 5 points scales ranging from all the time to none of the time. Before running the analysis, overall happiness score was created by the following steps.

- a. We first check the reliability of these questions. We standardize the happiness data by coding (1=-2) (2=-1) (3=0) (4=1) (5=2) and sadness data by coding (1=2) (2=1) (3=0) (4=-1) (5=-2). Hence 2 means they are happy all of the time and -2 means they are never happy.
- b. Next, we check the reliability of these question related to happiness.
- c. Here we see that overall Cronbach's alpha is 0.625, but when we delete 'how much of time you have felt calm and peaceful during the past 4 weeks' Cronbach's alpha increases to 0.765, indicating that this question is not consistent with other questions in measuring happiness of people. Next, we apply factor analysis for create an overall happiness on 5 questions other than the question 'how much of time you have felt calm and peaceful during the past 4 weeks.

**Table 3.4 The reliability of the questions****Reliability Statistics**

Cronbach's Alpha	N of Items
.625	6

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
how much of time,you have been very nervous during the past 4 weeks	2.7883	8.391	.413	.560
how much of time,you have felt so down in the dumps that nothing couldcheer you up during the past 4 weeks	2.1204	7.520	.505	.517
how much of time,you felt down-hearted and depressed the past 4 weeks	2.1616	7.381	.530	.505
how much of time,you felt full of life during the past 4 weeks	2.4749	7.816	.480	.530
how much of time,you have felt calm and peaceful during the past 4 weeks	3.0170	12.027	-.229	.765
how much of time,you have been happy during the past 4 weeks	2.3857	7.952	.546	.511

**Table 3.5 Factor Analysis of happiness**

<b>Total Variance Explained</b>						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.590	51.802	51.802	2.590	51.802	51.802
2	.892	17.835	69.637			
3	.697	13.936	83.574			
4	.436	8.723	92.297			
5	.385	7.703	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix <sup>a</sup>					
	Component				
	1				
how much of time,you have been very nervous during the past 4 weeks	.610	1.5799			
how much of time,you have felt so down in the dumps that nothing could cheer you up during the past 4 weeks	.738	1.91142			
how much of time,you felt down-hearted and depressed the past 4 weeks	.758	1.96322			
how much of time,you felt full of life during the past 4 weeks	.725	1.87775			
how much of time,you have been happy during the past 4 weeks	.758	1.96322			
		9.29551			
Extraction Method: Principal Component Analysis.					
a. 1 components extracted.					

- d. As seen only one factor has eigenvalue more than 1. We create weights and as we can see ‘how much of time you have been very nervous during the past 4 weeks’ has highest weight making it most important question as it explains most variability compared to other questions in this set. Now in similar way as created overall satisfaction, WE multiply weights to every variable and create overall happiness.
- e. In overall happiness, minimum value is -2 which means that a person is felt all types of happiness none of the time in past 4 weeks and maximum value is 2, which means that a person has felt happiness all of the times in past 4 weeks. The mean is 0.6123, thus on an average people are happy most of the time.

### 3.4 STATISTICAL ANALYSIS

Analyses were carried out using Statistical Package for Social Science (SPSS) version 23. All results were based on data weighted to the Turkish population for 2008, 2010, and 2012. The study variables were summarized by using descriptive statistical

techniques and frequency tables. Cross-tabulations, frequencies, means, and percentages were used to obtain an in-depth description of the sample, which provides the fundamental data to inform multivariate analyses. Cross-tabulations between age and sex, age and type of visit, race and sex, and patient satisfaction and all predictor variables were analyzed, where odds ratios with 95% confidence intervals and Chi-square tests of independence were used to determine if two distinct populations were significantly different with respect to a variable. For instance, through these performed analyses, it was determined whether males and females were significantly different with respect to patient satisfaction.

The model would test the effect of the socio-demographic and structural variables on patient satisfaction, and test for change over time in the dependent variable for 2008, 2010, and 2012 for Turkey. In addition, the model would assess the interaction of time and demographic variables, and time and structural variables. Multiple comparison would be performed for significant demographic, and structural variables to determine which level of variable has greater effect on patient satisfaction. Besides, Partial Eta Squand values would be calculated to determine which demographic, and structural variables have larger effect on patient satisfaction. On the other hand, Analysis of variance (ANOVA) would test the effect of the demographic and structural variables on patient satisfaction with healthcare system. Multiple comparison would be performed also for the second question for significant demographic, and structural variables to determine which level of variable has greater effect on patient satisfaction. Besides, Partial Eta Squand values would be calculated to determine which demographic, and structural variables have larger effect on patient satisfaction. At the same time, t-test would be used also to

test for differences in patient satisfaction between patient self-reported health status and satisfaction.

## CHAPTER 4

### MANUSCRIPT 1: FACTORS AFFECTING OVERALL PATIENT SATISFACTION WITH HEALTHCARE SYSTEM OF TURKEY<sup>2</sup>

#### 4.1 INTRODUCTION

Satisfaction with health systems has been a major concern for many countries. In order to evaluate healthcare system performance, the measurement of patient satisfaction is an essential part in terms of service quality and healthcare system responsiveness (Stepurko et al., 2016). Across developed and developing countries, patient satisfaction is playing an increasingly crucial role in in terms of monitoring and maintaining the quality of care and healthcare performance. The increasing importance of patient experience can help to capture the ‘responsiveness’ of the health system, referring to the manner and environment in which people are treated when they seek healthcare and how systems respond to people’s expectations from the perspective of patient experience through its components, respect for dignity, confidentiality, autonomy, access to social support networks, and choice of provider(Bleich et al., 2009).

Health systems need to respond to people’s expectations from perspective of patient experience. The views of general population satisfaction with health system is the measurement to provide useful insight into public opinion on healthcare system

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<sup>2</sup> Serdar Aydin, M. Mahmud Khan, Phd, Brian Chen, PhD, Ercan S. Turk, Phd, and Yusuf Celik, PhD. 2018. To be submitted to Health Affairs.

performance (Footman et al., 2013). Thus, general population satisfaction with healthcare system is assuring the stability of a health system when measuring and assessing healthcare system as well as quality of care (Ali et al., 2015). Improving healthcare system performance often inquires understanding of factors that influence satisfaction variation. Researchers have provided that the measurement of patient satisfaction with healthcare system is more sensitive and reliable than measuring traditional measures like mortality, morbidity, and provider peer review (Park et al., 2016). Therefore, more accurate and legitimate assessment of healthcare system performance can be done through considering the public/population views, experiences, and perceptions (Park et al., 2016). Being aware of the public's level of satisfaction with healthcare system can provide insights into how to manage the unique challenges of the service delivery (Vogus & McClelland, 2016). Evaluation of the services reflects the perceived value that the population ascribes to the health system, helping to measure and improve healthcare performance (Paul et al., 2016).

Patient satisfaction is also commonly used as an indicator for measuring the quality in healthcare. Donabedian, the pioneer of the quality of care theory, describes that patient's satisfaction is a criteria to predict healthcare outcome, which is one of three-part approaches to quality assessment (Donabedian, 1988). Those three keys of the theory—structure, process, and outcome—work in tandem with each other; the structure of care relates to the process of care, and these in turn affect the outcomes of care.

Patient satisfaction is used to predict future service utilization and intention to return for services (Kuosmanen et al., 2006) and is also a marketing tool that can give healthcare agencies and providers a competitive edge (Bear & Bowers, 1998), which can

be important for marketing perspectives as well (Chen, 1995). Some models and hypotheses have been developed to focus on satisfaction, such as the Profit Impact of Market Strategy (PIMS) model (Buzzell & Gale, 1987; Nelson et al., 1992).

Improving customer-patient satisfaction is the main goal of all quality management concepts, and focusing on quality and customer satisfaction are the criteria required by Total Quality Management (TQM)—concepts that believe customers ultimately define the quality through their satisfaction with a product or a service. Therefore, monitoring patient satisfaction has become both a standard to increase customer loyalty and an operating procedure in the healthcare system (Shivaji, 2012). Additionally, the U.S. Institute of Medicine (IOM) includes patient satisfaction and experience among its three priorities of what healthcare organizations want in the near future (Cohan, 2015) while patient satisfaction has become valuable for hospitals in the U.S. to measure their performance (Shivaji, 2012).

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Committee on Quality Assurance (NCQA) have required hospitals to evaluate healthcare by collecting outcome data, including data on patient satisfaction (Isenberg & Gliklich, 1999; Joint Commission on Accreditation of Healthcare Organizations, 2000).

In the future, measures of patient experience and responsiveness of the health system developed by WHO are likely to receive greater attention while hospitals and physicians have a growing pressure to enhance patient satisfaction, lower the cost of services, and improve the quality of care (Bleich et al., 2009).

Although the increased focus on satisfaction as an outcome measure resulted in a growing body of research, the factors affecting patient satisfaction remain largely unknown (Jackson et al., 2001). Most of the studies that focused on measuring predictors of satisfaction have explained only a small portion of satisfaction variance, which doesn't pass more than 20% (Jackson & Kroenke, 1997). Linder-Pelz underlined that due to the lack of good models of satisfaction, most models still have little power to explain satisfaction (Linder-Pelz, 1982). The results demonstrate that there are still important gaps in our understanding of which factors affect patient satisfaction that necessitate further study.

In conclusion, better information regarding the factors that have affected satisfaction can assist healthcare providers, public policy analysis, healthcare managers, practitioners, and planners to improve the quality of the services they deliver to users (Rosemarie Crow et al., 2002). For instance, the physician's sensitivity to patient needs and experiences has been increasing and receiving better results on patient evaluations, which is accepted as a good indicator of quality (Dagdeviren & Akturk, 2004). Therefore, as a widely accepted study argued, without a better understanding of what causes patients to be more or less satisfied with the care they receive, it cannot be clear to evaluate the healthcare system (Ware et al., 1977).

This research is an attempt to understand patient satisfaction with the overall healthcare system, and how population satisfied with the healthcare services in general without focusing on specific health facilities or healthcare providers. Since the respondents cannot be linked with specific healthcare facility or healthcare provider, the study will use population-based survey of satisfaction with healthcare system.

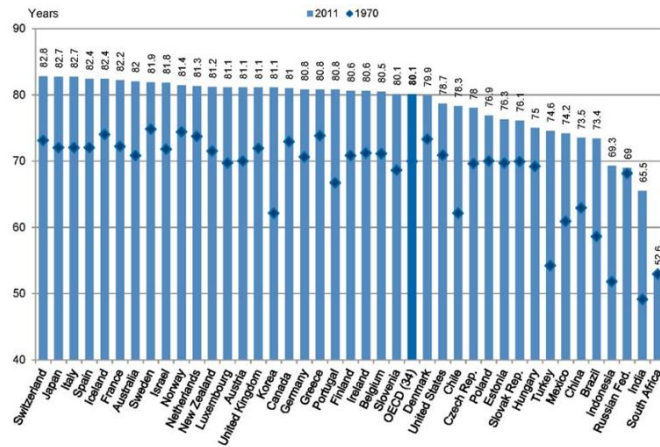
## 4.2 TURKISH HEALTHCARE SYSTEM

Turkey is an upper-middle income country where the age composition is much younger than that of other OECD countries. Turkey has rapidly increased its demographic, epidemiological, economic, and social development in the last few decades. Since 2003, Turkey has implemented the Health Transformation Program (HTP) to improve easily accessible, efficient, effective, and high quality healthcare services and achieve universal health coverage (OECD, 2014a; OECD/The World Bank, 2009; World Health Organization, 2012). Before the HTP launched, the Turkish healthcare system was characterized by its highly inefficient, fragmented provision financing structure and inequalities in access to healthcare for the population (Celik & Hotchkiss, 2000; Jadoo et al., 2014).

While the population has doubled from 35 million to more than 78 million in the last 50 years, the reforms that Turkey has implemented in the last decade have undoubtedly been a success in several respects such as life expectancy at birth (see Figure 1), neonatal mortality, maternal mortality, and infant mortality. For instance, the infant mortality rate fell from 150 per 1000 live births to less than 10 per 1000, and life expectancy at birth for men and women combined has risen from 50 years to around 75 years within the time scale (The World Bank, 2017b). Life expectancy at birth is recorded as the second largest gain in the OECD, and the reduction of the infant mortality rate is the highest reduction per year in the OECD (OECD, 2014b). In additionally, Turkey's GDP also doubled from about \$5,000 (US) to \$10,000 per capita during the last decade. These results emphasize that in the past decade Turkey has successfully increased the



volume of professionals, services, and productivity, as well as assuring universal access to healthcare (OECD, 2014b).



**Figure 4.1 Life expectancy at birth, 1970 and 2011 (OECD, 2014a)**

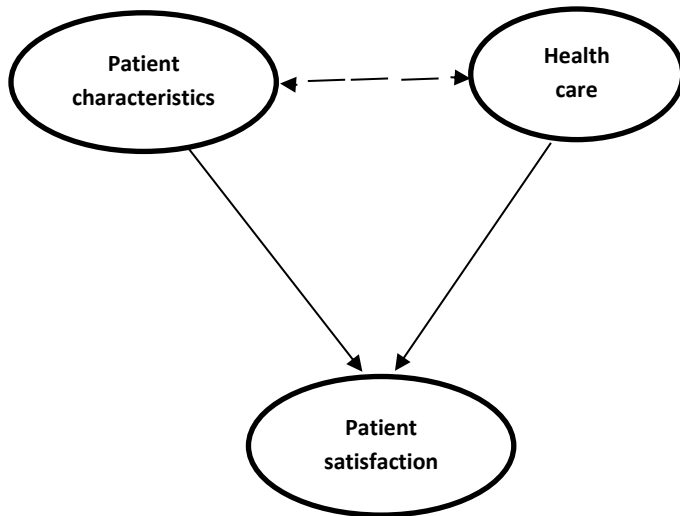
The HTP has changed the main healthcare measures in Turkey to increase healthcare performance and quality by expanding access to effective healthcare services, reducing financial hardship during illness, and improving health outcomes (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, Ayar, et al., 2013). The reform also defined and focused three main objectives of healthcare system performance through the HTP: health indicators, protecting citizens from financial risks, and healthcare users' satisfaction with the delivered healthcare services (Akdağ, 2011). One of the purposes of the implementation of the HTP was to improve the responsiveness of health services to meet user expectations and increase satisfaction (Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, Ayar, et al., 2013). Therefore, patient satisfaction, health service access, service infrastructure, and process assessment are the criteria and parameters by which hospitals are evaluated through the

Institutional Performance and Quality Development to develop the Service Quality Standards.

As a result of the Health Transformation Program, access to healthcare, expanded coverage for the entire population, organization within the healthcare system, and health outcomes have greatly increased, but compared with other OECD countries Turkey still falls behind in terms of healthcare quality (OECD, 2014b). Therefore, while focusing on coverage and access were the right priorities in the beginning of the health transformation program, Turkey's healthcare system now must focus on quality and outcomes (OECD, 2014a). Focusing on patient satisfaction is going to help to build on HTP's success as the emphasis shifts from encouraging high volumes of care to delivering high quality health services. Therefore, seeking to understand patient perspectives can help to improve the quality of health as well.

### **4.3 MODELS AND STUDIES EXPLAINING PATIENT SATISFACTION**

Many researchers have proposed different conceptual models to understand patient satisfaction. For instance, Green's model of patient satisfaction proposed that patient characteristics and healthcare provider determine patient satisfaction as two separate groups of variables. To keep from having an over-adjustment problem, the model also proposed a detailed model by examining the details explaining how patient characteristics affect patient satisfaction, such as patients' expectations about care, feelings, rating of healthcare, and their tendency to praise or criticize (Green & Davis, 2005).



**Figure 4.2 Green's Model of Patient Satisfaction**

A similar model was proposed by Jackson and colleagues in 2001, called Later Model of Patient Satisfaction. Demographics, such as age, and sex, expectations, and health status determine the level of patient satisfaction in cases where the healthier patient is going to be the more satisfied patient (Jackson et al., 2001). It has been argued that most of the studies that focused on measuring predictors of satisfaction have explained only a small portion of satisfaction variance, which doesn't pass more than 20% (Jackson & Kroenke, 1997). The Later Model of patient satisfaction explained 38% of the variance in satisfaction, which is considerably higher than most studies (Jackson et al., 2001).

$$\text{Patient Satisfaction} = \text{Demographics} - \text{Expectations} - \text{Health Status}$$

**Figure 4.3 The Later Model of Patient Satisfaction**

Besides, Baker proposed a model of patient satisfaction. Even though the theory states that patient expectation is the most important aspect of patient satisfaction, attitude

is considered as a matter of perception, where some elements of care may be more important than others on a patient-to-patient basis. Elements of care have affected patient satisfaction differently. For instance, a patient can be satisfied with one element of care such as the appointment system but may not be satisfied with another such as the clinical examination. Therefore, a measure of overall satisfaction should evaluate all relevant elements of care. Fourthly, patients' characteristics can impact their behavior towards care and are shown as affecting the priorities they assign. Age, sex, culture, experience of care, expectations, health, mood, and other factors can influence patients' characteristics. Finally, patients' future behavior, such as changing doctors or compliance with advice, can be affected by the level of patients' satisfaction. Patients will be satisfied when the expectations for the elements of care are met or exceeded.

#### **4.4 MEASUREMENT OF PATIENT SATISFACTION**

Patient satisfaction is usually measured in two ways; patient exit interviews that consist of asking the patients to fill out a questionnaire about the services they have just received at the point of patients' exit from a clinical consultation or healthcare facility. The technic is commonly used to assess patients' satisfaction with the healthcare providers and services received, allowing researchers to collect data about patient's experiences in a minimum recall period (Geldsetzer et al., 2016). The second way to assess patient satisfaction is population-based surveys that use survey sampling methods to produce a collection of experimental subjects. The most widely used measure of patient satisfaction is a five-point Likert scale or seven-point Likert scale, which is the most widely used approach to scaling responses in survey research asked "In general, how satisfied are you with the health care you received?" (Argyle, 2013; Carey &

Seibert, 1993; Chunuan, 2002; Oliver, 2014a; Yellen et al., 2002). The larger and more representative samples characteristics of population-based survey can provide the ability to observe general population thought about healthcare system than specific providers or services. (Mutz, 2011).

#### **4.5 RESEARCH QUESTIONS AND METHOD**

The main objective of this study is to identify factors affecting overall patient satisfaction with the healthcare system. The sub objectives of the question are (1) to explore the change in patient satisfaction level by years to examine the trends in patient satisfaction as a result of purposed major healthcare reforms under Turkish healthcare transformation. The research questions are listed the below. The quantitative analysis also analyzed to find out how individual level characteristics factors are important for satisfaction with overall healthcare system in Turkey.

What is the effect of demographic and structural factors on overall patient satisfaction with healthcare system of Turkey?

How did the overall patient satisfaction change over the years from 2008 to 2012?

The primary source of data for this study was collected from a public source that is the Turkey Health Survey, conducted face to face method from the sample household addresses by the Republic of Turkey's Turkish Statistical Institute. Adult participants were chosen using two-stage stratified cluster sampling through the "National Address Database (NADB)" constituting a base for "Address Based Registry System (ABRS)" (Global Health Data Exchange, 2016), (Global Health Data Exchange, 2016; TurkStat, 2017). The data was conducted and available for only 2008, 2010, 2012 and 2014.

However, 2014 dataset did not cover satisfaction with healthcare system section. Therefore, this year dataset was excluded from the study. All covariates were selected based on previous research, literature and the models in which as association with satisfaction was detected (Bleich et al., 2009; Kane et al., 1997; Thiedke, 2007; Thompson & Sunol, 1995).

#### 4.6 METHODS

The descriptive analysis presents the group frequencies (for Discrete variables) or means, standard deviations, and ranges (for Continuous variables) for all variables. Consider a linear model with response  $y_i; i = 1, 2, \dots, n$  and predictor vector  $\mathbf{x}' = [x_{i1}, x_{i2}, \dots, x_{ip}]$  that can be described by;

$$y = \mathbf{x}\boldsymbol{\beta} + \varepsilon$$

Where  $\varepsilon$  is an  $n$  vector that assumed to be normally distributed with mean 0 and constant variance  $\sigma^2$ . If the model contains only categorical factors, we simply have an Analysis of Variance (ANOVA). In ANOVA, we compare the means of factors level by using ratio of variance test. If the model contains continuous predictors with no categorical factors, we simply have a regression. But, if we have a model that has both continuous and categorical factors then this is a General Linear Model (GLM) and we can use ANCOVA to include both of these different types of factors. Because of having mixed factors consisting of categorical and continuous variables, GLM test was performed to determine what factors effecting overall patient satisfaction in this study.

For empirical estimate;

$Y = f(\text{year, age, gender, area of residency, education, marital status, overall happiness, household net monthly income, working status, coverage, source of income, health status-self reported, do you have any longstanding illness or 2 health problems,}$

*have you been limited because of a health problem, for at least the past 6 month, when you consulted a medical or surgical specialist, was there any time during the past 12 months when you really needed to consult a specialist but did not, have you visited Emergency services, was there any time during the past 12 months when you really needed to be hospitalized following recommendation from a doctor, either as an inpatient or a day patient, but did not, how many nights in total you stayed in hospital, how many times you consulted a GP or family doctor, during the past four weeks, how many times you consulted a specialist, during the past four weeks, have you been absent from work for reasons of health problems, how many day in total were you absent from work for reasons of health problems, in the past 12 months, what was the main reason for not consulting a specialist, what was the main reason for not being hospitalized)*

Second model of the analysis was also run to see the effect of significant variables from the first model as the below.

*Y = f (year, age, gender, area of residency, education, marital status, overall happiness, household net monthly income, health status-self reported, any longstanding illness or 2 health problems)*

The table shows that about 44.9% (4786) of the respondents in the age group of 15 – 24 years have primary education, 19.1% (2041), 11.4% (1215) and 11.1% (1187) of the respondents in the age group have high school, university or faculty, and secondary school or equivalent, education respectively. In this age group, only about 1.5% (164) of the respondents are illiterates while 1.1% have masters/doctorate degrees.

## 4.7 RESULTS

**Table 4.1 Mean of Overall Satisfaction across variables**

### *Descriptive*

*Mean of Overall Satisfaction across variables*

<i>Year</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error</i>	<i>95% Confidence Interval for Mean</i>		<i>F</i>	<i>Sig.</i>
					<i>Lower Bound</i>	<i>Upper Bound</i>		
2008	13527	.5776	.53315	.00458	.5686	.5866		
2010	13828	.6645	.50060	.00426	.6562	.6728		
2012	26479	.7859	.47255	.00290	.7802	.7916		
<i>Total</i>	53834	.7024	.50332	.00217	.6981	.7066	845.033	.000
<i>Area of Residency</i>								
<i>urban</i>	38745	.6764	.51231	.00260	.6713	.6815		
<i>rural</i>	15089	.7690	.47299	.00385	.7615	.7766		
<i>Total</i>	53834	.7024	.50332	.00217	.6981	.7066	370.206	.000
<i>Age</i>								
15-24	9608	.6546	.50610	.00516	.6444	.6647		
25-34	11100	.6306	.51680	.00491	.6210	.6403		
35-44	10677	.6820	.51386	.00497	.6722	.6917		
45-54	9391	.7187	.49374	.00510	.7087	.7287		
55-64	6561	.7695	.48229	.00595	.7578	.7811		
65-74	4052	.8391	.46363	.00728	.8248	.8534		



75+	2445	.8353	.44006	.00890	.8179	.8528		
<b>Total</b>	<b>53834</b>	<b>.7024</b>	<b>.50332</b>	<b>.00217</b>	<b>.6981</b>	<b>.7066</b>	<b>156.950</b>	<b>.000</b>
<b>Gender</b>								
male	24114	.6840	.51024	.00329	.6776	.6904		
female	29720	.7172	.49714	.00288	.7116	.7229		
<b>Total</b>	<b>53834</b>	<b>.7024</b>	<b>.50332</b>	<b>.00217</b>	<b>.6981</b>	<b>.7066</b>	<b>58.098</b>	<b>.000</b>
<b>Treatment Cost Paid by</b>								
public institution (actively working)	3535	.6106	.53504	.00900	.5929	.6282		
GERF( retired civil servant)	5222	.7257	.51752	.00716	.7117	.7398		
SSI	25577	.7119	.49673	.00311	.7058	.7180		
Bag-kur	8420	.7733	.47278	.00515	.7632	.7834		
Green card	5736	.6670	.50974	.00673	.6538	.6802		
Private health insurance	396	.5708	.45470	.02285	.5259	.6157		
Private fund	172	.6445	.47370	.03612	.5732	.7158		
By himself/herself	3874	.6060	.53145	.00854	.5892	.6227		
others	902	.7021	.47463	.01580	.6711	.7331		
<b>Total</b>	<b>53834</b>	<b>.7024</b>	<b>.50332</b>	<b>.00217</b>	<b>.6981</b>	<b>.7066</b>	<b>63.721</b>	<b>.000</b>
<b>Education</b>								
illiterate	4415	.8048	.46708	.00703	.7910	.8186		
no formel education	4276	.7366	.48058	.00735	.7222	.7510		
primary school	15592	.7832	.46762	.00374	.7758	.7905		
primary education	9974	.6723	.49737	.00498	.6626	.6821		
secondary school and equivalent	3562	.6761	.51310	.00860	.6592	.6929		
high school	7934	.6502	.52136	.00585	.6387	.6616		
university or faculty	6617	.5856	.53793	.00661	.5727	.5986		

<i>master, doctorate</i>	1464	.5116	.56861	.01486	.4824	.5407		
<i>Total</i>	53834	.7024	.50332	.00217	.6981	.7066	190.477	.000
<b>Marital Status</b>								
<i>single, never married</i>	11550	.6404	.51602	.00480	.6310	.6498		
<i>married</i>	37670	.7142	.49807	.00257	.7091	.7192		
<i>widowed</i>	3524	.7968	.48705	.00820	.7807	.8129		
<i>divorced</i>	1090	.6452	.52244	.01582	.6142	.6763		
<i>Total</i>	53834	.7024	.50332	.00217	.6981	.7066	112.018	.000
<b>Working Status</b>								
<i>retired</i>	5672	.7649	.49575	.00658	.7520	.7778		
<i>not able to work</i>	2498	.7882	.47830	.00957	.7695	.8070		
<i>others</i>	45664	.6899	.50456	.00236	.6853	.6945		
<i>Total</i>	53834	.7024	.50332	.00217	.6981	.7066	94.513	.000
<b>Working Status- have you been worked</b>								
<i>yes</i>	19869	.6675	.51275	.00364	.6603	.6746		
<i>no</i>	33965	.7228	.49660	.00269	.7175	.7280		
<i>Total</i>	53834	.7024	.50332	.00217	.6981	.7066	151.733	.000
<b>Source of Income</b>								
<i>income from work(as employee or self-employed)</i>	29096	.6716	.50847	.00298	.6658	.6774		
<i>employee pension</i>	16365	.7489	.49105	.00384	.7413	.7564		
<i>movable and real estate</i>	2085	.7300	.47032	.01030	.7098	.7502		
<i>old-age or survivor's benefits</i>	2422	.7690	.48680	.00989	.7496	.7884		
<i>family/children related allowances</i>	641	.5870	.59901	.02366	.5406	.6335		
<i>housing allowances</i>	175	.6871	.47522	.03592	.6162	.7580		
<i>education-related allowances</i>	247	.6535	.47174	.03002	.5944	.7126		

<i>disability pension</i>	306	.7893	.50081	.02863	.7329	.8456		
<i>disability care allowances</i>	344	.8220	.47706	.02572	.7714	.8726		
<i>conditional cash transfer</i>	157	.5938	.49421	.03944	.5159	.6717		
<i>other regular allowances</i>	706	.7049	.49911	.01878	.6680	.7418		
<i>unemployment benefits</i>	89	.8498	.52241	.05538	.7398	.9599		
<i>no income</i>	631	.6566	.54935	.02187	.6137	.6995		
<b>Total</b>	<b>53264</b>	<b>.7030</b>	<b>.50355</b>	<b>.00218</b>	<b>.6987</b>	<b>.7073</b>	<b>32.009</b>	<b>.000</b>
<b>Health Status- self reported</b>								
<i>very good</i>	5652	.7632	.53040	.00706	.7494	.7770		
<i>good</i>	28737	.6938	.49041	.00289	.6882	.6995		
<i>fair</i>	14168	.6965	.50334	.00423	.6882	.7047		
<i>bad</i>	4597	.7071	.52898	.00780	.6918	.7224		
<i>very bad</i>	666	.6516	.59147	.02292	.6066	.6966		
<b>Total</b>	<b>53820</b>	<b>.7024</b>	<b>.50332</b>	<b>.00217</b>	<b>.6982</b>	<b>.7067</b>	<b>25.029</b>	<b>.000</b>
<b>Longstanding illness</b>								
<i>yes</i>	20520	.7211	.50950	.00356	.7141	.7281		
<i>no</i>	33265	.6910	.49907	.00274	.6856	.6964		
<b>Total</b>	<b>53785</b>	<b>.7025</b>	<b>.50329</b>	<b>.00217</b>	<b>.6982</b>	<b>.7067</b>	<b>45.466</b>	<b>.000</b>
<b>Limitation because of Health problems</b>								
<i>severely limited</i>	6573	.7154	.52993	.00654	.7026	.7282		
<i>limited but not severely</i>	12159	.7024	.51280	.00465	.6933	.7115		
<i>not limited at all</i>	34983	.6991	.49365	.00264	.6939	.7042		
<b>Total</b>	<b>53715</b>	<b>.7018</b>	<b>.50261</b>	<b>.00217</b>	<b>.6976</b>	<b>.7061</b>	<b>2.938</b>	<b>.053</b>
<b>when you consulted a medical or surgical specialist</b>								
<i>less than 12 months ago</i>	32669	.7129	.50119	.00277	.7075	.7184		

<i>12 months ago or longer</i>	18029	.6999	.50270	.00374	.6926	.7073		
<i>never</i>	2682	.5999	.52326	.01010	.5801	.6197		
<i>Total</i>	53380	.7029	.50342	.00218	.6986	.7071	63.033	.000
<i>Needed to consult a Specialist but did not</i>								
<i>yes</i>	9307	.5503	.56449	.00585	.5389	.5618		
<i>no</i>	44327	.7342	.48372	.00230	.7296	.7387		
<i>Total</i>	53634	.7023	.50351	.00217	.6980	.7065	1045.132	.000
<i>Visited Emergency Services</i>								
<i>yes</i>	8968	.6935	.51732	.00546	.6828	.7042		
<i>no</i>	44768	.7043	.50041	.00237	.6996	.7089		
<i>Total</i>	53736	.7025	.50329	.00217	.6982	.7067	3.411	.065
<i>Needed to be hospitalized either as an inpatient or outpatient but did not</i>								
<i>yes</i>	2027	.5925	.58505	.01299	.5670	.6179		
<i>no</i>	51668	.7069	.49914	.00220	.7026	.7112		
<i>Total</i>	53695	.7026	.50312	.00217	.6983	.7068	101.054	.000
<i>how many nights in total you stayed in hospital</i>								
<i>never</i>	48664	.6973	.50336	.00228	.6928	.7018		
<i>Less than 4 nights</i>	2689	.7193	.50366	.00971	.7003	.7384		
<i>4 or more nights</i>	2360	.7876	.49006	.01009	.7678	.8074		
<i>Total</i>	53713	.7024	.50314	.00217	.6981	.7066	37.921	.000
<i>how many times you consulted a GP or family doctor, during the past four weeks</i>								
<i>never</i>	41301	.6868	.50306	.00248	.6820	.6917		
<i>Less than 4 times</i>	10932	.7523	.48939	.00468	.7431	.7615		

<i>4 or more times</i>	766	.7490	.54219	.01959	.7106	.7875		
<i>Total</i>	52999	.7012	.50158	.00218	.6969	.7055	77.382	.000
<i>how many times you consulted a specialist, during the past four weeks</i>								
<i>never</i>	41020	.6998	.50124	.00247	.6950	.7047		
<i>Less than 4 times</i>	11079	.7114	.50146	.00476	.7020	.7207		
<i>4 or more times</i>	1026	.6973	.51793	.01617	.6656	.7290		
<i>Total</i>	53125	.7022	.50162	.00218	.6979	.7065	2.354	.095
<i>Absent from work due to health problems</i>								
<i>yes</i>	2896	.6009	.53967	.01003	.5813	.6206		
<i>no</i>	50863	.7080	.50043	.00222	.7037	.7124		
<i>Total</i>	53759	.7023	.50320	.00217	.6980	.7065	124.381	.000
<i>how many day in total were you absent from work for reasons of health problems,</i>								
<i>never</i>	50399	.7074	.50044	.00223	.7030	.7118		
<i>less than 11 days</i>	1680	.5892	.53337	.01301	.5637	.6147		
<i>11 and more days</i>	1128	.6112	.55536	.01654	.5787	.6436		
<i>Total</i>	53207	.7016	.50333	.00218	.6974	.7059	63.592	.000
<i>what was the main reason for not consulting a specialist</i>								
<i>could not afford</i>	3716	.5594	.56570	.00928	.5413	.5776		
<i>waiting list, other reasons due to the hospital</i>	699	.2895	.63206	.02391	.2425	.3364		
<i>could not take time because of work, cre for children or for others</i>	1739	.5635	.54115	.01298	.5380	.5889		
<i>too far to travel / no means for transportation</i>	489	.6427	.51354	.02322	.5971	.6884		
<i>fear of doctor/hospitals/examination/treatment</i>	508	.5926	.53247	.02362	.5462	.6391		
<i>could not find any one to take to hospital</i>	299	.7126	.55808	.03227	.6491	.7761		

<i>no permission from family or relatives</i>	76	.5706	.54639	.06268	.4457	.6954		
<i>very late appointment</i>	328	.3593	.53075	.02931	.3017	.4170		
<i>other reason</i>	45921	.7299	.48631	.00227	.7255	.7344		
<i>Total</i>	53775	.7024	.50342	.00217	.6981	.7066	157.116	.000
<i>what was the main reason for not being hospitalized</i>								
<i>could not afford</i>	793	.5911	.60934	.02164	.5487	.6336		
<i>waiting list, other reasons due to the hospital</i>	120	.3690	.70470	.06433	.2416	.4964		
<i>could not take time because of work, cre for children or for others</i>	388	.5967	.53282	.02705	.5436	.6499		
<i>too far to travel / no means for transportation</i>	91	.6664	.35774	.03750	.5919	.7409		
<i>fear of surgery//treatment</i>	220	.6986	.50273	.03389	.6318	.7654		
<i>could not find any one to take to hospital</i>	62	.6762	.51731	.06570	.5448	.8076		
<i>no permission from family or relatives</i>	28	.3111	.82986	.15683	-.0107	.6329		
<i>very late appointment</i>	27	.2688	.57594	.11084	.0409	.4966		
<i>other reason</i>	52092	.7061	.50002	.00219	.7018	.7104		
<i>Total</i>	53821	.7023	.50333	.00217	.6981	.7066	18.664	.000

**Table 4.2 Cross Table Results of Education**

		Education								
		illiterate	no formel education	primary school	primary education	secondary school and equivalent	high school	university or faculty	master, doctorate	Total
Age_grou	15-24	164	772	387	4786	1187	2041	1215	112	10664
	25-34	374	450	2873	1877	720	2548	2418	558	11818
	35-44	486	442	4298	1589	772	1714	1577	384	11262
	45-54	685	677	4121	1298	614	1242	950	268	9855
	55-64	955	836	2652	771	362	554	558	136	6824
	65-74	1052	820	1397	343	141	189	189	46	4177
	75+	936	625	626	143	55	83	69	20	2557
Total		4652	4622	16354	10807	3851	8371	6976	1524	57157
area of residency urban		2452	2484	10840	7522	3022	7161	6155	1389	41025
Rural		2200	2138	5514	3285	829	1210	821	135	16132
Total		4652	4622	16354	10807	3851	8371	6976	1524	57157
Gender	Male	699	1245	7344	5049	2188	4566	3889	894	25874
	Female	3953	3377	9010	5758	1663	3805	3087	630	31283
Total		4652	4622	16354	10807	3851	8371	6976	1524	57157
Year	2008	94	1846	1035	5791	1093	1154	2457	1185	14655
	2010	1649	1104	5413	1438	1076	2280	1387	100	14447
	2012	2909	1672	9906	3578	1682	4937	3132	239	28055
Total		4652	4622	16354	10807	3851	8371	6976	1524	57157

From the respondents in the age group of 25 – 34 years, we also observed that about 24.3% (2873) of the respondents have primary school education; about 21.6% (2548), 20.5% (2418) and 15.9% (1877) of the respondents in this age group have high school, university or faculty, and primary education respectively. Only about 3.2% (374) of the respondents in this age group are illiterates while 4.7% have masters/doctorate degrees.

We observed from the table that out of the total respondents in the age group of 35 – 44 years, 38.2% (4298) attended primary school; about 15.2% (1714), 14.1% (1589) respondents have high school and primary education respectively. Only about 3.4% (384) have masters/doctorate degree education while 4.3% are illiterates. For the respondents in the age group of 45 – 54 years, about 41.8% (4121) have primary school education, 13.2% (1298) have primary education while 12.6% have high school education. From this age group, 2.7% (268) of the respondents have masters/doctorate degrees while about 7% (685) of them are illiterates.

Out of the total respondents in the age group of 55 – 64 years, 38.9% (2652) of them have primary school education; about 14% (955) are illiterates while 12.3% (836) have no formal education. However, about 2% of them (136) have masters/doctorate degrees. Out of the total number of the respondents in the age group of 65 – 74 years, 33.4% (1397) of them have primary school education, 25.2% (1052) of them are illiterates while 19.6% (820) of them have no formal education. We observed also that about 1.1% (46) of this total have masters/doctorate degrees. Out of the total respondents who are 75 years and above, it was observed that about 36.6% (936) of them are



illiterates, 24.5% (626) have primary school education while 24.4% (625) of them have no formal education. Less than 1% of them (20) have masters/doctorate degrees.

Additionally, we observed that about 6.4% (10840) of the total respondents sampled from the urban areas have primary school education, 18.3% (7522) have primary education while 17.5% (7161) have high school education. It shows that about 6% of them are illiterates while about 3.4% (1389) of them have masters/doctorate degrees. We also observed that out of the total respondents sampled from the rural areas, about 34.2% (5514) have primary school education, 20.4% (3285) have primary education while 13.6% (2200) are illiterates.

The table shows that out of the total male respondents sampled, 28.4% (7344) have primary school education, 19.5% (5049) have primary education while 17.6% (4566) have high school education. Out of this total, we also observed that 2.7% (699) are illiterates while 3.5% (894) have masters/doctorate degrees. Out of the total number of female respondents sampled, we observed that 28.8% (9010) have primary school education, 18.4% (5758) have primary education while 12.6% (3953) are illiterates. We also observed that about 12.2% (3805) of this sample have high school education while 2% (630) have masters and doctorate degrees.

Additionally, out of the total respondents sampled in 2008, 39.5% (5791) have primary education, 16.8% (2457) have university or faculty education while 12.6% (1846) have no formal education. We also observed that 0.6% (94) are illiterates while about 8.1% (1185) have masters/doctorate degrees. Out of the total respondents sampled in 2010, 37.5% (5413) have primary school education, 15.8% (2280) have high school education while 11.4% (1649) are illiterates. The table also shows that 0.7% (100) have

master/doctorate degrees. Out of the total respondents sampled in 2012, 35.3% (9906) have primary school education, 17.6% (4937) have high school education while 12.8% (3578) have primary education. By the way, about 10.4% (2909) are illiterates while less than 1% (239) have masters/doctorate degrees.

**Table 4.3 Cross table 1**

Count

**TABLE1: Age\_group**

		15-24	25-34	35-44	45-54	55-64	65-74	75+	Total
gender	male	4850	5084	5073	4675	3205	1891	1096	25874
	female	5814	6734	6189	5180	3619	2286	1461	31283
Total		10664	11818	11262	9855	6824	4177	2557	57157
year	2008	2878	3311	2888	2429	1609	946	594	14655
	2010	2667	2902	2819	2505	1756	1115	683	14447
	2012	5119	5605	5555	4921	3459	2116	1280	28055
	Total	10664	11818	11262	9855	6824	4177	2557	57157
Health status-self rep	Very good	2720	1717	1046	605	252	72	32	6444
	good	6783	7796	6669	5017	2694	1185	466	30610
	Fair	965	1923	2856	3279	2722	1821	1063	14629
	Bad	168	334	624	861	985	945	831	4748
	Very bad	26	43	62	89	167	153	164	704
Total		10662	11813	11257	9851	6820	4176	2556	57135

The table above shows that largest percentage of the total sampled male respondents are in the age group of 25 to 34 years old, followed by the age group of 35 to 44 years old. These figures were respectively 5084 and 5073, each of which represents approximately 20% of the total males sampled. The Table shows that 18.7% (4850) and 18.1% (4675) of these respondents are 15 to 24 and 45 to 54 years old respectively.

About 4.2% (1096) of these respondents are 75 years old and above. In addition, 21.5%

(6734) female respondents are 25 to 34 years old, 19.8% (6189) are 35 to 44 years old while 18.6% (5814) are 15 to 24 years old.

Out of the total respondents sampled in the years 2008, 2010 and 2012, largest percentage of the respondents are 25 to 34 years old with 22.6% (3311), 20.1% (2902) and 20% (5605) respectively. The next largest percentage of these respondents are 35 to 44 years old with 19.7% (2888), 19.5% (2819) and 19.8% (5555) respectively for the years 2008, 2010, and 2012. This was followed by those who are 15 to 24 years old for each of these years while those respondents that are 75 years and above happens to be the least in number with 4.1% (594), 4.7% (683) and 4.6% (1280) of the sampled respondents, respectively, for the years 2008, 2010 and 2012.

In addition, it can be seen that the largest percentage of the respondents with very good health status belongs to 15 to 24 years old. It is seen that 2720 (42.2%) out of the total respondents with this health status belong to this age group. This is followed by the 25 to 34 years age group, which consists of 1717 (26.6%) of the total respondents with very good health status and then the 35-44 years age group with 1046 (16.2%) of the total respondents with this health status. However, only 32 (0.5%) out of the total respondents with this very good health status are 75 years and above as we can see directly from the table. That is, only few respondents in this health status category belongs to the old generation.

The table shows that largest number of category of the respondents with good health status belong to the 25 to 34 years age group, followed by the 15 to 24 years age group and then the 35 to 44 years group. These age groups consist, respectively, of 7796 (25.5%), 6783 (22.2%) and 6669 (21.8%) out of the total respondents in this category of

health status. This was followed by the 45 to 54 years age group with 16.4% while the 75 years and above age group have the smallest number (466, i.e., 1.5%) of this category of the respondents. This also means that only few respondents in this health status category belongs to the old generation.

Additionally, the 45 to 54 years age group have the largest number of the respondents whose health status is just fair, followed by the 35 to 44 years age group and then the 55 to 64 years one. These age groups consist, respectively, of 3279 (22.4%), 2856 (19.5%) and 2722 (18.6%) out of the total respondents in this health status category. However, the 15 to 24 years age group have the smallest number (965) of the respondents with this category of health status, which is 6.6%. That is, only few respondents with fair health status belongs to the youngest age group.

Furthermore, people who are between 55 to 64 years are the largest group (985) reported health status as bad, which is 20.7% of the total respondents in the category. This was followed by the 65 to 74 years age group with 945 (19.9%) out of the respondents in this category. The 45 to 54 years age group came next with 861 (18.1%) of the total in this category while the 15 to 24 years age group came last with only 168 (3.5%) out of the total respondents in this category.

Moreover, we observed that the 55 to 64 years age group with very bad health status carries the largest number (167), which is 23.7% of the total respondents in this category. This was followed by the age group of 75 years and above with 164, which constitutes 23.3% of the total respondents with very bad health status. The third age group is 65 to 74 years with 153 respondents, which is about 21.7% of the total in the category of very bad health status. The 15 to 24 age group has the smallest number of

respondents with very bad health status. Only 26 out of the total respondents in this category of health status fall in this age group. This figure constitutes about 3.7% of the total in this category.

**Table 4.4 Cross table 2**

Count

		health status_self reported					Total
		very good	good	fair	bad	very bad	
<b>Education</b>	illiterate	119	1306	1849	1166	210	4650
	no formel education	273	1650	1644	880	172	4619
	primary school	1116	8323	5218	1498	189	16344
	primary education	1695	6146	2280	612	72	10805
	secondary school and equivalent	527	2332	811	159	20	3849
	high school	1342	5279	1494	231	23	8369
	university or faculty	1129	4585	1073	170	18	6975
	master, doctorate	243	989	260	32	0	1524
Total		6444	30610	14629	4748	704	57135
<b>area of residency</b>	Urban	4852	23015	9879	2874	386	41006
	Rural	1592	7595	4750	1874	318	16129
	Total	6444	30610	14629	4748	704	57135
<b>Gender</b>	Male	3587	15175	5348	1525	229	25864
	Female	2857	15435	9281	3223	475	31271
Total		6444	30610	14629	4748	704	57135
<b>Year</b>	2008	1465	7564	4018	1396	208	14651
	2010	1395	7504	3911	1392	232	14434
	2012	3584	15542	6700	1960	264	28050
	Total	6444	30610	14629	4748	704	57135
<b>Age</b>	15-24	2720	6783	965	168	26	10662
	25-34	1717	7796	1923	334	43	11813
	35-44	1046	6669	2856	624	62	11257
	45-54	605	5017	3279	861	89	9851
	55-64	252	2694	2722	985	167	6820
	65-74	72	1185	1821	945	153	4176
	75+	32	466	1063	831	164	2556
	Total	6444	30610	14629	4748	704	57135

The table above shows that out of the total sampled respondents who are illiterates have a fair health status 39.8% (1849), and 28.1% (1306) have a good health status while 25.1% (1166) have a bad health status. It was also observed that about 4.5% (210) of this sample have a very bad health status and 2.6% (119) are very good in health status. Out of the total sampled respondents who are have no formal education, about 35.7% (1650) have a good health status, 35.6% (1644) have a fair health status while 19.1% (880) have a bad health status. It was also observed that about 3.7% (172) of this sample have a very bad health status and 5.9% (273) are very good in health status.

In addition, from the total sampled respondents who have primary school education, 50.9% (8323) are in a good health condition, 31.9% (5218) are in a fair health condition while 9.2% (1498) are in bad health condition. It was also observed that 6.8% (1116) are in a very good health condition while 1.2% (189) of this sample are in a very bad health condition. Out of the total sampled respondents who have primary education, we observed that 15.7% (1695) have a very good health status, 56.9% (6146) of these respondents have a good health status while 21.1% (2280) are in a fair health condition. We observed also that about 5.7% (612) and 0.7% (72) of these respondents have a bad and a very bad health status respectively.

By the way, the table shows that 13.7% (527) of respondents who have a secondary school and equivalent education have a very good health status, and 60.6 (2332) have a good health status while 21.1% (811) are in a fair health condition. We observed also that about 4.4% (159) and 0.5% (20) of these respondents have a bad and a very bad health status respectively. At the same time, we observed that out of the total sampled respondents who have a high school education, 16% (1342) have a very good

health status, 63.1% (5279) have a good health status while 17.9% (1494) are in a fair health condition. We observed also that about 2.8% (231) and 0.3% (23) of these respondents have a bad and a very bad health status respectively.

Furthermore, out of the total sampled respondents who have a university or faculty education, we observed that 16.2% (1129) have a very good health status, 65.7% (4585) of these respondents have a good health status while 15.4% (1073) are in a fair health condition. We observed also that about 2.4% (170) and 0.3% (18) of these respondents have a bad and a very bad health status respectively. Out of the total sampled respondents who have masters/doctorate degrees, we observed that 15.9% (243) have a very good health status, 64.9% (989) of these respondents have a good health status while 17.1% (260) are in a fair health condition. We observed also that about 2.1% (32) have a bad health status while none of these respondents was in a very bad health condition.

In addition, we observed that out of the total respondents sampled from the urban areas, 11.8% (4852) were in a very good health condition, 56.1% (23015) have a good health status while the health status of 24.1% (9879) of them was fair. However, about 7% (2874) of this total reported their health status to be bad while 0.9% (386) have a very bad health status. We also observed that out of the total respondents sampled from the rural areas, about 9.9% (1592) were in a very good health condition, 47.1% (7595) have a good health status while the health status of 29.5% (4750) of them was fair. We also observed that out of this total, about 11.6% (1874) and 2.0% (318) respectively have bad and very bad health status.

The table also reveals that out of the total male respondents sampled, about 13.9% (3587) gave a very good report of their health status, 58.7% (15175) reported their health

status to be good while 20.7% (5348) reported their health status to be fair. However, about 5.9% (1525) of these male respondents reported their health status to be bad while 0.9% (229) reported to be in a very bad health condition. The Table also reveals that out of the total female respondents sampled, about 9.1% (2857) gave a very good report of their health status, 49.4% (15435) reported their health status to be good while 29.7% (9281) reported their health status to be fair. However, about 10.3% (3223) of this sample reported their health status to be bad while 1.5% (475) reported to be in a very bad health condition.

Additionally, out of the total respondents sampled in the year 2008, 10% (1465) were in a very good health condition, 51.6% (7564) have a good health condition while 27.4% (4018) reported their health condition to be fair. However, only about 1.4% (208) were in a very bad health condition while 9.5% (1396) were in a bad health condition as reported. The table reveals that In the year 2010, 9.7% (1395) of those sampled reported to be in a very good health condition, 52% (7504) have a good health status while about 27.1% (3911) reported their health condition to be fair. Only about 1.6% (232) reported to have a very bad health condition while 9.6% (1392) have a bad health status as reported. The table reveals that in the year 2012, about 12.8% (3584) of those sampled reported to have a very good health status, 55.4% (15542) have a good health status while 23.9% (6700) reported their health status to be fair. However, about 7% (1960) of these respondents reported their health status to be bad while 0.9% (264) reported to have a very bad health status.

The table reveals that out of the total sampled respondents in the age group of 15 – 24 years, 25.5% (2720) were in a very good health condition, 63.6% (6783) have a



good health status while 9.1% (965) reported to have a fair health condition. From this table, only 0.2% (26) reported their health status to be very bad while 1.6% (168) have a bad health status as reported. From the total sampled respondents who are 25 to 34 years old, 14.5% (1717) have a very good health status, 66% (7796) reported a good health status while 16.3% (1923) have a fair health status. Only about 0.4% (43) have a very bad health status and 2.8% (334) reported a bad health status. Out of the total sampled respondents in the age group of 35 to 44 years, 9.3% (1046) reported their health status to be very good, 59.2% (6669) reported a good health status while 25.4% (2856) have a fair health status. About 5.5% (624) reported to have a bad health status while only 0.6% (62) gave a report of their health condition to be very bad.

In addition, out of the total sampled respondents who are 45 to 54 years old, about 6.1% (605) have a very good health status, 50.9% (5017) have a good health status while 33.3% (3279) reported to have a fair health status. Only about 8.7% (861) reported to have a bad health status while 0.9% (89) have a very bad health condition. From the total sampled respondents in the age group of 55 to 64 years, 3.7% (252) reported to have a very good health condition, 39.5% (2694) have good health status while 39.9% (2722) have a fair health status. About 2.4% (167) reported their health condition to be very bad while 14.4% (985) reported to have bad health status. Out of the total sampled respondents in the age group of 65 to 74 years, 1.7% (72) reported their health status to be very good, 28.4% (1185) reported a good health status while 43.6% (1821) have a fair health status. About 22.6% (945) reported to have a bad health status while 3.7% (153) gave a report of their health condition to be very bad. By the way, out of the total sampled respondents who are 75 years and above, 1.3% (32) reported their health status

to be very good, 18.2% (466) reported a good health status while 41.6% (1063) have a fair health status. About 22.6% (945) reported their health condition to be bad while 3.7% (153) reported a very bad health status.

**Table 4.5 First Model of the Analysis**

Dependent Variable: Overall Satisfaction

F	R <sup>2</sup>	Adjusted R <sup>2</sup>	Sig.
1.255	.105	.104	.000

The table above shows that the F value is 1.255 with a p-value of 0.000, which is less than 0.05 and 0.01 at significant levels. Therefore, that result indicates that the fitted model used is significant. The  $R^2 = 0.105$  indicates that the proportion of the total variation in overall satisfaction accounted for by the fitted model is 10.5%.

**Table 4.6 The result of first model statistical analysis**

**Parameter Estimates**

Dependent Variable: Overall Satisfaction

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	.629	.059	10.710	.000	.514	.744
happiness	.074	.003	21.800	.000	.067	.081
real_monthly_income	-1.798E-5	2.918E-6	-6.160	.000	-2.370E-5	-1.226E-5
[year=2008]	-.161	.006	-25.951	.000	-.173	-.149
[year=2010]	-.099	.005	-18.849	.000	-.109	-.089
[year=2012]	0 <sup>a</sup>	.	.	.	.	.
[area of residency=urban]	-.055	.005	-10.540	.000	-.066	-.045
[area of residency=rural]	0 <sup>a</sup>	.	.	.	.	.
[age=15-24]	-.127	.016	-7.761	.000	-.159	-.095
[age=25-34]	-.129	.015	-8.879	.000	-.158	-.101
[age=35-44]	-.085	.014	-6.004	.000	-.113	-.057

[age=45-54]	-.072	.014	-5.340	.000	-.099	-.046
[age=55-64]	-.039	.013	-2.995	.003	-.065	-.014
[age=65-74]	.001	.013	.057	.955	-.025	.027
[age=75+]	0 <sup>a</sup>	.	.	.	.	.
[gender=male]	-.035	.006	-6.267	.000	-.045	-.024
[gender=female]	0 <sup>a</sup>	.	.	.	.	.
[who pays treatment costs=public institutions]	-.010	.019	-.543	.587	-.048	.027
[who pays your treatment costs=GERF]	.004	.018	.227	.820	-.032	.040
[who pays your treatment costs=SSI]	.011	.017	.617	.537	-.023	.044
[who pays your treatment costs=Bag-Kur]	.034	.018	1.953	.051	.000	.069
[who pays your treatment costs=Green Card]	-.026	.018	-1.438	.150	-.061	.009
[who pays your treatment costs=Private Health Insurance]	-.111	.030	-3.682	.000	-.170	-.052
[who pays your treatment costs=Private Fund]	-.042	.041	-1.007	.314	-.123	.039
[who pays your treatment costs=By himself/herself]	-.021	.019	-1.155	.248	-.058	.015
[who pays your treatment costs=others]	0 <sup>a</sup>	.	.	.	.	.
[education=illiterate]	.126	.018	7.163	.000	.092	.160
[education=no formal education]	.128	.017	7.710	.000	.096	.161
[education=primary school]	.132	.015	8.666	.000	.102	.162
[education=primary education]	.120	.015	8.149	.000	.091	.149
[education=secondary school and equivalent]	.086	.016	5.311	.000	.054	.118
[education=high school]	.046	.015	3.066	.002	.016	.075
[education=university or faculty]	.009	.014	.592	.554	-.020	.037
[education=master, doctorate]	0 <sup>a</sup>	.	.	.	.	.
[marital status=single, never married]	-.003	.017	-.169	.866	-.036	.030
[marital status=married]	.036	.015	2.357	.018	.006	.067
[marital status=widowed]	.026	.018	1.434	.152	-.009	.061
[marital status=divorced]	0 <sup>a</sup>	.	.	.	.	.
[working status=retired]	-.013	.009	-1.353	.176	-.031	.006
[working status=not able to work]	.032	.013	2.511	.012	.007	.057
[working status=others]	0 <sup>a</sup>	.	.	.	.	.

[have you ever worked, in seven days before the date=Yes]	.004	.006	.720	.472	-.008	.017
[have you ever worked, in seven days before the date=No]	0 <sup>a</sup>	.	.	.	.	.
[source of income=income from work(as employee or self-employed)]	-.021	.021	-1.001	.317	-.063	.021
[source of income=employee pension]	.007	.022	.318	.750	-.036	.050
[source of income=movable and real estate]	.026	.024	1.076	.282	-.021	.073
[source of income=old-age or survivor's benefits / sickness or disability benefits]	.026	.023	1.126	.260	-.020	.072
[source of income=family/children related allowances]	-.098	.029	-3.402	.001	-.154	-.042
[source of income=housing allowances]	-.023	.043	-.535	.593	-.106	.061
[source of income=education-related allowances]	.005	.038	.125	.901	-.070	.079
[source of income=disability pension]	.047	.035	1.349	.177	-.022	.116
[source of income=disability care allowances]	.078	.034	2.297	.022	.011	.145
[source of income=conditional cash transfer]	-.144	.046	-3.143	.002	-.234	-.054
[source of income=other regular allowances]	-.012	.028	-.424	.672	-.067	.043
[source of income=unemployment benefits]	.141	.056	2.527	.012	.032	.250
[source of income=no income]	0 <sup>a</sup>	.	.	.	.	.
[health status_self reported=very good]	.191	.023	8.285	.000	.146	.236
[health status_self reported=good]	.111	.022	5.067	.000	.068	.154
[health status_self reported=fair]	.069	.021	3.249	.001	.028	.111
[health status_self reported=bad]	.055	.021	2.565	.010	.013	.097
[health status_self reported=very bad]	0 <sup>a</sup>	.	.	.	.	.
[do you have any longstanding illness or 2 health problems=Yes]	.020	.006	3.127	.002	.007	.033
[do you have any longstanding illness or 2 health problems=No]	0 <sup>a</sup>	.	.	.	.	.
[have you been limited because of a health problem, for at least the past 6 month=severely limited]	.005	.010	.525	.599	-.014	.024

[have you been limited because of a health problem, for at least the past 6 month=limited but not severely]	-.012	.007	-1.651	.099	-.025	.002
[have you been limited because of a health problem, for at least the past 6 month=not limited at all]	0 <sup>a</sup>	.	.	.	.	.
[when you consulted a medical or surgical specialist=less than 12 months ago]	.090	.010	8.756	.000	.070	.110
[when you consulted a medical or surgical specialist=12 months ago or longer]	.079	.010	7.764	.000	.059	.099
[when you consulted a medical or surgical specialist=never]	0 <sup>a</sup>	.	.	.	.	.
[was there any time during the past 12 months when you really needed to consult a specialist but did not=Yes]	-.094	.014	-6.912	.000	-.121	-.067
[was there any time during the past 12 months when you really needed to consult a specialist but did not=No]	0 <sup>a</sup>	.	.	.	.	.
[have you visited Emergency services=Yes]	-.015	.006	-2.443	.015	-.027	-.003
[have you visited Emergency services=No]	0 <sup>a</sup>	.	.	.	.	.
[was there any time during the past 12 months when you really needed to be hospitalized, either as an inpatient or a day patient, but did not=1]	-.048	.030	-1.587	.112	-.107	.011
[was there any time during the past 12 months when you really needed to be hospitalized, either as an inpatient or a day patient, but did not=2]	0 <sup>a</sup>	.	.	.	.	.
[how many nights in total you stayed in hospital =never]	-.076	.011	-6.876	.000	-.098	-.055
[how many nights in total you stayed in hospital=Less than 4 nights]	-.052	.014	-3.672	.000	-.080	-.024
[how many nights in total you stayed in hospital=4 or more nights]	0 <sup>a</sup>	.	.	.	.	.

[how many times you consulted a GP or family doctor, during the past four weeks=never]	-0.063	.019	-3.365	.001	-.099	-.026
[how many times you consulted a GP or family doctor, during the past four weeks =Less than 4 times]	-.020	.019	-1.067	.286	-.057	.017
[how many times you consulted a GP or family doctor, during the past four weeks=4 or more times]	0 <sup>a</sup>	.	.	.	.	.
[how many times you consulted a specialist, during the past four weeks=never]	.021	.016	1.282	.200	-.011	.053
[how many times you consulted a specialist, during the past four weeks=Less than 4 times]	.015	.016	.902	.367	-.017	.047
[how many times you consulted a specialist, during the past four weeks=4 or more times]	0 <sup>a</sup>	.	.	.	.	.
[have you been absent from work for reasons of health problems =Yes]	.047	.032	1.443	.149	-.017	.110
[have you been absent from work for reasons of health problems =No]	0 <sup>a</sup>	.	.	.	.	.
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=never]	.083	.033	2.545	.011	.019	.147
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=less than 11 days]	-.007	.019	-.357	.721	-.044	.030
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=11 and more days]	0 <sup>a</sup>	.	.	.	.	.
[what was the main reason for not consulting a specialist=could not afford]	-.025	.016	-1.564	.118	-.057	.006
[what was the main reason for not consulting a specialist =waiting list, other reasons due to the hospital]	-.294	.023	-12.827	.000	-.339	-.249

[what was the main reason for not consulting a specialist =waiting list, other reasons due to the hospital]	-.015	.018	-.857	.392	-.051	.020
[what was the main reason for not consulting a specialist =too far to travel / no means for transportation]	-.028	.027	-1.052	.293	-.080	.024
[what was the main reason for not consulting a specialist =fear of doctor/hospitals/examination/treatment]	-.035	.026	-1.353	.176	-.086	.016
[what was the main reason for not consulting a specialist =could not find any one to take to hospital]	.072	.033	2.183	.029	.007	.137
[what was the main reason for not consulting a specialist =no permission from family or relatives]	-.018	.058	-.319	.750	-.132	.095
[what was the main reason for not consulting a specialist =very late appointment]	-.250	.030	-8.276	.000	-.310	-.191
[what was the main reason for not consulting a specialist =other reason]	0 <sup>a</sup>	.	.	.	.	.
[what was the main reason for not being hospitalised =could not afford]	.080	.036	2.251	.024	.010	.150
[what was the main reason for not being hospitalised =waiting list, other reasons due to the hospital]	-.151	.055	-2.761	.006	-.258	-.044
[what was the main reason for not being hospitalised =could not take time because of work, care for children or for others]	.045	.039	1.157	.247	-.031	.122
[what was the main reason for not being hospitalised =too far to travel / no means for transportation]	.017	.062	.274	.784	-.104	.138
[what was the main reason for not being hospitalised =fear of surgery//treatment]	.102	.045	2.247	.025	.013	.190
[what was the main reason for not being hospitalised =could not find any one to take to hospital]	.051	.072	.708	.479	-.091	.193

[what was the main reason for not being hospitalised =no permission from family or relatives]	-0.295	.102	-2.896	.004	-.495	-.095
[what was the main reason for not being hospitalised =very late appointment]	-.196	.106	-1.848	.065	-.403	.012
[what was the main reason for not being hospitalised =other reason]	0 <sup>a</sup>	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

The overall effect of all the 26 factors considered is 0.105 implying about 10.5% of variation in overall satisfaction can be explained by using the model. The significant factors at 5% level of significance are; overall happiness, income, year, urban-rural, age group, gender, who pays treatment cost, education, marital status, working status, health status, evidence of long standing illness, last time visited physician, number of nights stayed in hospital, number of times consulted a physician, number of days absent from work due to health reason, main reason not consult a specialist and main reason for visiting a hospital.

Overall happiness has positive effect, and it implies that increasing overall happiness will positively influence overall satisfaction. In effect, a unit increase in overall happiness triggers about .07 increase in overall satisfaction. Consistently with the past studies, there exist a positive trend with increase in overall patient satisfaction every year (Aktan et al., 2014; Atun, Aydın, Chakraborty, Sümer, Aran, Gürol, Nazlıoğlu, Özgülcü, Aydoğan, & Ayar, 2013). Precisely, there is about 0.16 decrease in overall satisfaction from year 2008 to 2012. That's, using 2012 as the base year, there is about 0.16 decrease in patients' overall satisfaction. Similar negative effects were observed from 2010 to 2012.



In addition, consistently with the previous studies, we found that patients who have higher household income have a negative significant correlation with satisfaction with the healthcare system (Stepurko et al., 2016). The results can be explained by considering that those patients with higher income are likely to have higher expectations of their care, which results in more disappointment as well as dissatisfaction (Hall & Dornan, 1990).

Additionally, the result shows that older patients were more satisfied with healthcare system than younger patients. For instance, for patients of age group 15-24, negative effect was observed that implies that they are generally unsatisfied with the health care system. The patients are about 0.127 less satisfied compared to the base category of age group 75 and above. Similar negative effects were observed for patients of age group 25 – 34, 35 – 44, 45 – 54 and 55 – 64. In addition to the findings, many studies conclude that older patients tend to be more satisfied than younger patients (Alrubaiee & Alkaa'ida, 2011; Jackson et al., 2001; Tucker III, 2000). A study conducted by Jackson found out that patients who are 65 age and over were more likely to be satisfied with healthcare system compared to people who were younger (Jackson et al., 2001). Some results for the role of age in patient satisfaction suggest that the effect of age stems from different expectation and attitudes that older patients may hold, such as lower expectations of healthcare, and therefore such individuals can be easily satisfied with the healthcare system. Others have suggested that older patients may be treated with more respect and form better relationships with providers.

In contrast to past studies, we found that men are about .035 less satisfied when compared to females. Besides, the role of gender on patient satisfaction with healthcare

system is not consistent. For instance, while a result concluded that gender seems to be unimportant (Jackson et al., 2001), another study found that women were more likely satisfied with healthcare system compared to men (Alrubaiee & Alkaa'ida, 2011). In addition, Nguyen found that men tended to be more satisfied than women and women tended to complain more often than men (Thi et al., 2002).

Additionally, we found that patients that resides in urban areas are generally less satisfied when compared with rural patients. According to some studies, individuals living in urban areas were more satisfied (64.0%) than those living in rural areas (28.2%) when comparing the level of satisfaction with area of residency (Jadoo et al., 2012). On the contrary, another study found that patient satisfaction was higher among rural residents compared to urban, which could be explained by low expectations (Footman et al., 2013).

Consistently with previous studies, the result shows that self-reported health status also shows significant effect on overall satisfaction with the healthcare system (Rosemarie Crow et al., 2002). Patients who reported his/her health status as very good are the most satisfied with the healthcare system while those who reported health status as very bad are the least satisfied with the healthcare system. At the same time, those patients with good health status tends to be satisfied with the overall health care system while those patients with bad health status are not satisfied with the health care system. The result can be explained by concluding that health status, both physically and psychologically, is associated with patient satisfaction. Health status and health outcomes affect satisfaction; sicker patients and psychologically distressed patients record lower satisfaction (Rosemarie Crow et al., 2002)

In addition to the findings supported by previous studies, we found that education is one of the factors effecting patient satisfaction with the healthcare system. The result shows that patients with lower education are more satisfied with healthcare system than patients with higher education. Also, the most satisfied patients are those with primary education while the least satisfied are those with high school. According to some studies, patients who have a lower education level were more satisfied compared to those with a higher education level (Hall & Dornan, 1988; Lo, 2014; Sitzia & Wood, 1997). Consistently with the other studies, a study concluded that dissatisfied respondents had significantly a higher level of education than satisfied ones ( $P < 0.001$ ) (Maharlouei et al., 2017). The results can be explained by considering that those patients with more education are likely to have higher expectations of their care, which results in more disappointment as well as dissatisfaction (Hall & Dornan, 1990).

Furthermore, we found that married patients seem to be a little bit satisfied with the health care system when compared with others. The relationships between marital status and patient satisfaction are also found to be inconsistent (Quintana et al., 2006). The study concluded that single or divorced patients have higher patient satisfaction scores, whereas another study found that married and single patients are more satisfied than widowed and divorced patients. (Nicolucci et al., 2009).

The payment institution also has strong effect on patient satisfaction with healthcare system. The result shows that patients whom health bills were paid by private health insurance are less satisfied than other institution. Patients whom medical bill paid by himself/herself are the least satisfied group compared to the others. According to some studies, insured patients were more likely to be satisfied with the healthcare system when

compared to uninsured patients (OR 2.79, 95% CI 2.07-3.77) (Maharlouei et al., 2017). At the same time, a study found that private health spending resulted to be negatively correlated with patient satisfaction with healthcare system as an increase of private health expenditures made patient satisfaction lower by 98.7% (Xesfingi & Vozikis, 2016).

The source of income also has significant effect on the overall satisfaction with the healthcare system. Fourteen categories of income sources were considered; the most significantly related to overall satisfaction is family/children or related health allowances. The effect is significantly negative related with overall satisfaction at the 5% level. This implies patients whose source of income comes from their family are unsatisfied with the health care system. On the other hand, positive effects were observed for disability care allowances and unemployment benefits.

We also found that patients who visited a health facility less than 12 months are more satisfied than those that never visited the health facility. According to some studies, utilization of services, access to healthcare, and specialist availability are the outpatient characteristics that are found to positively correlate with higher patient satisfaction (Lo, 2014). In addition, another study concluded that utilization does not have any effect on patient satisfaction with healthcare system (Jackson et al., 2001).

**Table 4.7 Second Model of the Analysis**

Dependent Variable: Overall Satisfaction

F	R <sup>2</sup>	Adjusted R <sup>2</sup>	Sig.
1.384	.080	.079	.000

This table shows that the fitted model used is significant at the level with 1.384 F-values and 0.000 p-value. The  $R^2 = 0.080$  indicates that 8% of the total variation in overall satisfaction explained for by the fitted model.

**Table 4.8 The result of second model statistical analysis**

**Parameter Estimates**

Dependent Variable: Overall Satisfaction

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	.686	.031	22.057	.000	.625	.746
happiness	.084	.003	25.441	.000	.077	.090
real_monthly_income	-9.983E-6	2.721E-6	-3.669	.000	-1.532E-5	-4.651E-6
[year=2008]	-.177	.006	-29.749	.000	-.189	-.166
[year=2010]	-.112	.005	-21.842	.000	-.122	-.102
[year=2012]	0 <sup>a</sup>	.	.	.	.	.
[Urban=1]	-.056	.005	-11.218	.000	-.065	-.046
[Rural=2]	0 <sup>a</sup>	.	.	.	.	.
[age=15-24]	-.195	.015	-13.398	.000	-.224	-.167
[age=25-34]	-.197	.013	-15.418	.000	-.222	-.172
[age=35-44]	-.154	.012	-12.356	.000	-.179	-.130
[age=45-54]	-.124	.012	-10.060	.000	-.148	-.100
[age=55-64]	-.074	.012	-6.023	.000	-.098	-.050
[age=65-74]	-.008	.013	-.633	.526	-.033	.017
[age=75+]	0 <sup>a</sup>	.	.	.	.	.
[gender=male]	-.045	.005	-9.860	.000	-.053	-.036
[gender=female]	0 <sup>a</sup>	.	.	.	.	.
[education=illiterate]	.124	.017	7.343	.000	.091	.157
[education=no formal education]	.130	.016	8.089	.000	.099	.162
[education=primary school]	.145	.015	9.819	.000	.116	.174
[education=primary education]	.130	.014	9.064	.000	.102	.159
[education=secondary school and equivalent]	.096	.016	6.083	.000	.065	.127
[education=high school]	.054	.015	3.698	.000	.025	.083
[education=university or faculty]	.013	.014	.873	.383	-.016	.041

[education=master, doctorate]	0 <sup>a</sup>	.	.	.	.	.
[marital status=single, never married]	.019	.017	1.169	.243	-.013	.052
[marital status=married]	.048	.015	3.189	.001	.018	.077
[marital status=widowed]	.041	.018	2.361	.018	.007	.076
[marital status=divorced]	0 <sup>a</sup>	.	.	.	.	.
[health status_self reported=very good]	.196	.021	9.197	.000	.154	.238
[health status_self reported=good]	.110	.020	5.451	.000	.070	.149
[health status_self reported=fair]	.059	.020	2.977	.003	.020	.097
[health status_self reported=bad]	.052	.020	2.574	.010	.012	.092
[health status_self reported=very bad]	0 <sup>a</sup>	.	.	.	.	.
[do you have any longstanding illness or 2 health problems=Yes]	.020	.005	3.795	.000	.010	.030
[do you have any longstanding illness or 2 health problems=No]	0 <sup>a</sup>	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

As we can see directly from the above table of parameter estimates, all the factors are significant at 5% level of significance except Age at 65 – 74 years, education at university/faculty, and Marital status at single, never married. These have p-values as 0.526, 0.383, and 0.243 respectively. From the table also, we observe the effect on overall satisfaction by each factor and also the direction of such an effect. These effects for each factor are given by the corresponding parameter estimates.

From the table we observed that overall happiness has positive but small effect of 0.084 units on overall satisfaction, which implies that increase in overall happiness will positively influence overall satisfaction by 0.084 units. The real monthly income has a negative but very small effect on overall satisfaction. This indicates that a unit increase in income will cause a very small decrease in the overall satisfaction. Moving to year effect, there exist a negative trend with decrease in overall satisfaction every year. Precisely, there is about 0.177 decrease in the patient's overall satisfaction from year 2008 to 2012

when 2012 was used as the base year. Similar a negative effect was observed from 2010 to 2012, where we found about 112 units decrease in the patient's overall satisfaction from the year 2010 to 2012. However, the negative effect is a little lower compared to 2008 – 2012. Looking at area of residency, we observed that patients that resides in urban areas are generally less satisfied when compared with rural patients as this has a negative effect on the patient's overall satisfaction.

Looking at the patients' ages, we observed a negative effect for each age. Patients of age group 15-24 years are about 0.195 units less satisfied compared to the base category of age group 75 years and above. Similarly, Patients of age group 25-34 years are about 0.197 units less satisfied compared to the base category of age group 75 years and above. Patients of age group 35-44 years are about 0.154 units less satisfied compared to the base category of age group 75 years and above. Patients of age group 45-54 years are about 0.124 units less satisfied compared to the base category of age group 75 years and above. Patients of age group 55-64 years are about 0.074 units less satisfied compared to the base category of age group 75 years and above. Patients of age group 65-74 years are about 0.008 units less satisfied compared to the base category of age group 75 years and above. The effect for age group 65 – 74 was not significant at the 5% significance level.

The gender effect estimates showed that males are about .045 units less satisfied when compared to females. We observed from the table that all categories of the patients' education have positive and significant effects on their overall satisfaction. It was observed that patients with primary school education have the highest effect and those are

the most satisfied. While the least satisfied are those with university or faculty education. The effect of the patients in this category was not significant at 5% level.

For the marital status, we observed that the categories with significant effects are the married and the widowed patients. The patients in the married category turn out to be the most satisfied followed by those in the widowed category. The effect of the patients in the single, never married category was not significant at 5% level.

For the self-reported health status, we observed that the effect of all the categories of this factor are significant at 5% level; the patients in the category of very good health status are the most satisfied followed by those with good health status category. While the least satisfied patients are those in the bad health status category. For the illness factor, patients with longstanding illness or 2 health problems have positive effect on overall satisfaction.

**Table 4.9 The change of overall patient satisfaction over the years from 2008 to 2012**

### Descriptives

Overall Satisfaction

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
2008	13527	.5776	.53315	.00458	.5686	.5866	-2.00	2.00
2010	13828	.6645	.50060	.00426	.6562	.6728	-2.00	2.00
2012	26479	.7859	.47255	.00290	.7802	.7916	-2.00	2.00
Total	53834	.7024	.50332	.00217	.6981	.7066	-2.00	2.00

The descriptive table (see above) provides some very useful descriptive statistics, including the mean, standard deviation and 95% confidence intervals for the dependent variable (overall satisfaction) for each separate year (2008, 2010, and 2012), as well as



when all groups are combined (Total). These figures are useful when you need to describe the data. With the information on the table we can conclude that mean of satisfaction for each year is not equal since for 2008 (M = 0.5776, SD = 0.53315), 2010 (M = 0.6645, SD = 0.50060), and 2012 (M = 0.7859, SD = 0.47255).

**Table 4.10 The result of ANOVA**

<b>ANOVA</b>					
Overall Satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	415.129	2	207.564	845.033	.000
Within Groups	13222.433	53831	.246		
Total	13637.561	53833			

This is the table that shows the output of the ANOVA analysis and whether there is a statistically significant difference between our group means. We can see that  $F(2) = 845.033$  and the significance value is 0.000 (i.e.,  $p = .000$ ), which is below 0.05 level of significance. And, therefore, there is a statistically significant difference in the mean patient satisfaction level between the different years. This is great to know, but we do not know which of the specific groups differed. Luckily, we can find this out in the Multiple Comparisons table which contains the results of the Tukey post hoc test.

**Table 4.11 Multiple Comparisons of overall satisfaction and year**

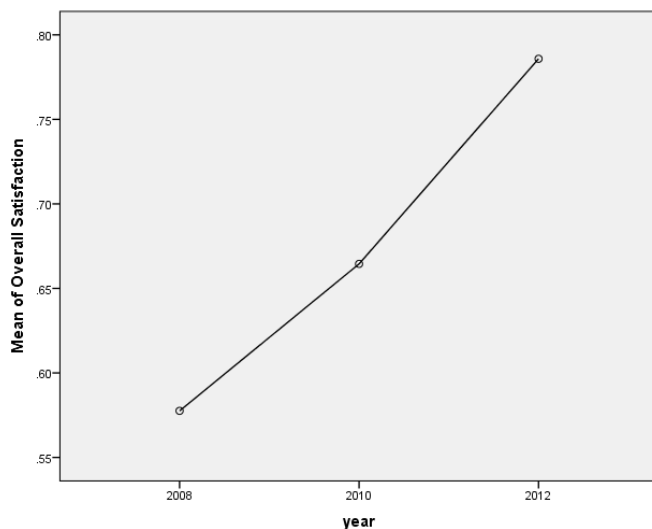
<b>Multiple Comparisons</b>						
Dependent Variable: Overall Satisfaction						
Bonferroni						
(I) year	(J) year	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2008	2010	-.08694*	.00599	.000	-.1013	-.0726
	2012	-.20830*	.00524	.000	-.2208	-.1958
2010	2008	.08694*	.00599	.000	.0726	.1013

2012		-.12136*	.00520	.000	-.1338	-.1089
2012	2008	.20830*	.00524	.000	.1958	.2208
	2010	.12136*	.00520	.000	.1089	.1338

\*. The mean difference is significant at the 0.05 level.

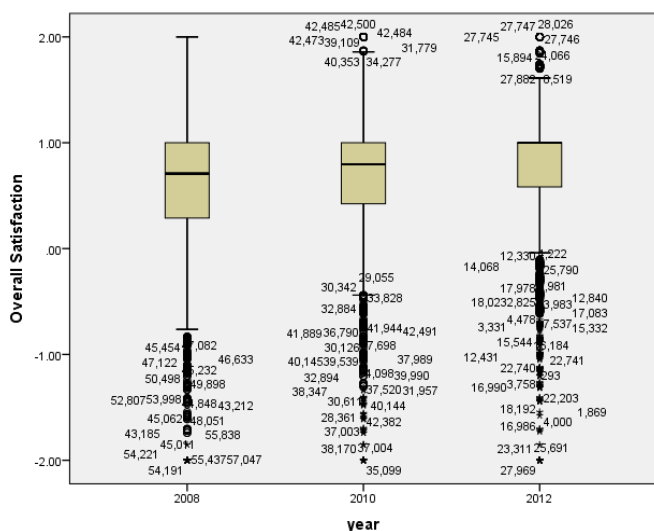
The result shows that there are statistically significant differences between the groups as a whole in overall patient satisfaction level between the year 2008 and 2010 ( $p = 0.000$ ), as well as between the year 2008 and 2012 ( $p = 0.000$ ), and as well as between the year 2010 and 2012 ( $p = 0.000$ ). The Bonferroni test for multiple comparison of means was conducted to test for the significance of the change in means of the dependent variable (Overall satisfaction) and it was all significant at 0.05 level of significance which means their means are different.

### Means Plots



**Figure 4.4 Means Plots of year and overall satisfaction**

The graph above shows the mean satisfaction of patient grouped by the year and we can deduced that year 2012 have the highest number of patient satisfaction while we record the lowest case in the year 2008.



**Figure 4.5 Mean of Overall Satisfaction across year**

Table below shows the overall satisfaction mean of each variable by years.

**Table 4.12 The overall satisfaction mean of each variable by years**

Variables	Overall Satisfaction Mean		
	2008	2010	2012
[area of residency=urban]	.5450	.6354	.7604
[area of residency=rural]	.6512	.7374	.8567
[age=15-24]	.5226	0.6019	.7532
[age=25-34]	.5091	0.5739	.7306
[age=35-44]	.5765	0.6376	.7592
[age=45-54]	.5998	0.6896	.7916
[age=55-64]	.6414	0.7434	.8415
[age=65-74]	.7148	0.8455	.8909
[age=75+]	.7102	0.7964	.9132
[gender=male]	.5516	.6435	.7701
[gender=female]	.5985	.6805	.7991
[who pays treatment costs=public institutions]	.5046	.5965	.6939
[who pays your treatment costs=GERF]	.6445	.6783	.7735
[who pays your treatment costs=SSI]	.5723	.6703	.7926
[who pays your treatment costs=Bag-Kur]	.6574	.7327	.8507
[who pays your treatment costs=Green Card]	.5578	.6510	.7597

[who pays your treatment costs=Private Health Insurance]	.3539	.4746	.6451
[who pays your treatment costs=Private Fund]	.3853	.6945	.6747
[who pays your treatment costs=By himself/herself]	.5399	.5939	.7103
[who pays your treatment costs=others]	.5101	.6772	.7812
[education=illiterate]	.3932	.7536	.8479
[education=no formal education]	.6578	.7266	.8319
[education=primary school]	.6252	.7194	.8338
[education=primary education]	.6135	.6280	.7867
[education=secondary school and equivalent]	.5677	.6212	.7740
[education=high school]	.5300	.5666	.7173
[education=university or faculty]	.4927	.5377	.6784
[education=master, doctorate]	.4862	.5471	.6227
[marital status=single, never married]	.5115	.5766	0.735
[marital status=married]	.5886	.6832	0.7967
[marital status=widowed]	.6776	.7577	0.875
[marital status=divorced]	.5579	.6210	0.6887
[working status=retired]	.6251	.7410	.8356
[working status=not able to work]	.6836	.7844	.8543
[working status=others]	.5657	.6492	.7756
[have you ever worked, in seven days before the date=Yes]	.5531	.6312	.7437
[have you ever worked, in seven days before the date=No]	.5919	.6834	.8109
[source of income=income from work(as employee or self-employed)]	.5450	.6246	.7630
[source of income=employee pension]	.6225	.7150	.8244
[source of income=movable and real estate]	.6521	.6935	.7909
[source of income=old-age or survivor's benefits / sickness or disability benefits]	.6483	.7877	.8288
[source of income=family/children related allowances]	.4588	.5505	.7181
[source of income=housing allowances]	.5681	.4732	.7822
[source of income=education-related allowances]	.5802	.5691	.7824
[source of income=disability pension]	.0000	.7262	.8181
[source of income=disability care allowances]	.0000	.8015	.8293
[source of income=conditional cash transfer]	.0000	.6629	.5896
[source of income=other regular allowances]	.0000	.6783	.7272
[source of income=unemployment benefits]	.0000	.8398	.8584
[source of income=no income]	.5872	.6116	.7635
[health status_self reported=very good]	.6440	.6942	.8367

[health status_self reported=good]	.5642	.6469	.7779
[health status_self reported=fair]	.5765	.6775	.7784
[health status_self reported=bad]	.5832	.6984	.8012
[health status_self reported=very bad]	.6183	.6351	.6937
[do you have any longstanding illness or 2 health problems=Yes]	.6009	.6956	.7997
[do you have any longstanding illness or 2 health problems=No]	.5630	.6449	.7778
[have you been limited because of a health problem, for at least the past 6 month=severely limited]	.6134	.7052	.7895
[have you been limited because of a health problem, for at least the past 6 month=limited but not severely]	.5901	.6839	.7743
[have you been limited because of a health problem, for at least the past 6 month=not limited at all]	.5649	.6492	.7874
[when you consulted a medical or surgical specialist=less than 12 months ago]	.5954	.6769	.7885
[when you consulted a medical or surgical specialist=12 months ago or longer]	.5671	.6607	.7880
[when you consulted a medical or surgical specialist=never]	.4919	.5350	.7354
[was there any time during the past 12 months when you really needed to consult a specialist but did not=Yes]	.4648	.5373	.6394
[was there any time during the past 12 months when you really needed to consult a specialist but did not=No]	.6107	.6972	.8073
[have you visited Emergency services=Yes]	.5648	.6414	0.7643
[have you visited Emergency services=No]	.5796	.6694	0.7911
[was there any time during the past 12 months when you really needed to be hospitalized, either as an inpatient or a day patient, but did not=1]	.4929	.6109	.6793
[was there any time during the past 12 months when you really needed to be hospitalized, either as an inpatient or a day patient, but did not=2]	.5825	.6673	.7889
[how many nights in total you stayed in hospital =never]	.5704	.6602	.7811
[how many nights in total you stayed in hospital=Less than 4 nights]	.6114	.6531	.8093

[how many nights in total you stayed in hospital=4 or more nights]	.6737	.7657	.8697
[how many times you consulted a GP or family doctor, during the past four weeks=never]	.5704	.6501	.7693
[how many times you consulted a GP or family doctor, during the past four weeks =Less than 4 times]	.6056	.7231	.8289
[how many times you consulted a GP or family doctor, during the past four weeks=4 or more times]	.6311	.6323	.9033
[how many times you consulted a specialist, during the past four weeks=never]	.5686	.6574	.7860
[how many times you consulted a specialist, during the past four weeks=Less than 4 times]	.6065	.6906	.7845
[how many times you consulted a specialist, during the past four weeks=4 or more times]	.6163	.6873	.7625
[have you been absent from work for reasons of health problems =Yes]	0.4961	.5965	.6650
[have you been absent from work for reasons of health problems =No]	0.5829	.6681	.7921
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=never]	.5832	.6683	.7933
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=less than 11 days]	.4736	.5696	.6577
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=11 and more days]	.4841	.6000	.6750
[what was the main reason for not consulting a specialist=could not afford]	.4789	.5669	.6553
[what was the main reason for not consulting a specialist =waiting list, other reasons due to the hospital]	.2443	.2792	.3379
[what was the main reason for not consulting a specialist =waiting list, other reasons due to the hospital]	.4689	.4907	.6742
[what was the main reason for not consulting a specialist =too far to travel / no means for transportation]	.5759	.6487	.6858
[what was the main reason for not consulting a specialist =fear of doctor/hospitals/examination/treatment]	.4992	.5385	.6680
[what was the main reason for not consulting a specialist =could not find any one to take to hospital]	.5329	.8078	.7687
[what was the main reason for not consulting a specialist =no permission from family or relatives]	.5920	.4454	.6159

[what was the main reason for not consulting a specialist =very late appointment]	.1876	.3539	.4813
[what was the main reason for not consulting a specialist =other reason]	.6074	.6919	.8047
[what was the main reason for not being hospitalised =could not afford]	.5376	.5900	.6694
[what was the main reason for not being hospitalised =waiting list, other reasons due to the hospital]	.1637	.3300	.5783
[what was the main reason for not being hospitalised =could not take time because of work, care for children or for others]	.4385	.6779	.6786
[what was the main reason for not being hospitalised =too far to travel / no means for transportation]	.5747	.8690	.6280
[what was the main reason for not being hospitalised =fear of surgery//treatment]	.6553	.6443	.7684
[what was the main reason for not being hospitalised =could not find any one to take to hospital]	.4311	.7172	.8496
[what was the main reason for not being hospitalised =no permission from family or relatives]	.1407	.3435	.4906
[what was the main reason for not being hospitalised =very late appointment]	.3532	.3871	.1548
[what was the main reason for not being hospitalised =other reason]	.5817	.6663	.7885

From the Table of *overall satisfaction means by years* above, we observed that the overall satisfaction means increases progressively from 2008 to 2012 for all variables except for the patients in the following categories of the corresponding variables,

- (i) Patients whose treatment costs are being paid by private health insurance and those whose treatment costs are being paid by private fund.
- (ii) Patients whose source of incomes are housing allowances and those whose source of income are education related allowances
- (iii) Patients whose main reasons for not consulting a specialist are due to lack of permission from families and relatives.

- (iv) Patients whose main reason for not being hospitalised are due to long distance of travelling/no transportation, fear of surgery/treatment, and those whose reasons are due to very late appointment.

#### **4.8 LIMITATIONS**

The limitations of this study stem from its reliance on secondary data. Firstly, the research was limited to the data available, contents, and wording of the THS questionnaire. Since the questionnaire has been already prepared, we were not able to design or change the direction. That is a common issue faced when working with secondary dataset.

Secondly, this study did not explore other factors that may influence patient satisfaction with health care services. For example, our study did not include a separate assessment of the quality of care provided: One of the aspects of measuring patient satisfaction is to evaluate quality of care as well. Many studies argued that patient's satisfaction is a criterion to predict healthcare outcome, worthy of measure in its own right. Besides, patient satisfaction is identified as an important outcome for healthcare services (Alexander et al., 1993; Badri, Attia, & Ustadi, 2009; Donabedian, 1966). A study recommended that patient satisfaction is strongly influenced by patient-doctor communication variables and at all time points immediately after the visit (Jackson et al., 2001). Unfortunately, the data set does not include the variables providing those details. Another limitation in the study is that the dataset does not have type of provider and ownership status if it is private or public hospitals-services care received. Therefore, we are not able to come up whether actual differences exist between services or service providers in these public or private hospitals.



Additionally, it is recommended that waiting time to see physicians, spending time with patients, consultation time, privacy, continuity of care, and medicines are also need to be investigated for further researches. Similarly, the environmental factors such as comfortable environment, facilities and services, building, convenient location of the hospital and cleanliness should also be addressed to deeply understand what really behind patient behavior effecting his/her satisfaction.

#### **4.9 CONCLUSION & DISCUSSION**

According to this result, we suggest that greater gains in healthcare system performance could be done by understanding patient satisfaction with healthcare services. Socio-demographic and structural characteristics are significance in determining patient satisfaction; Older patient, women, patient with lower education, lower income, married, living in rural, reported a very good health status, having any longstanding illness, treatment cost paid by public insurance tend to report higher score of satisfaction. With exception of age, education, and income, these results however, are inconsistent and sometimes contradictory with previous studies (Calnan et al., 1994; Thi et al., 2002). In addition to the findings supported by previous studies, older patients tended to have higher satisfaction scores (Quintana et al., 2006). Similarly, patients who have high education, and married had higher satisfaction scores compared to low educated and single patients. In contrast to other studies, our results showed that women tended to have higher satisfaction scores than men (Rosemarie Crow et al., 2002; Thi et al., 2002). It could be explained by saying that men tended to complain more often than women do in the country. These results might indicate that men have more expectation, or men have different experiences than women. In many households, men might determine the

healthcare provided for their children, spouses, parent, parent-in-law and even co-workers based upon his experience or satisfaction level with a provider or facility because of cultural approach.

According to this result we conclude that, as in previous studies, there is evidence that socio-demographic characteristics and structural characteristics affect overall patient satisfaction with healthcare services. The empirical findings of this study suggest that policy makers and managers should consider the relative effectiveness of the characteristics in patient satisfaction.

The study provides initial empirical evidence associating with patient satisfaction with healthcare services. Policy mangers, providers, healthcare managers can use the current findings to develop healthcare service strategies that deepen and enhance patient satisfaction. The current findings may be used by managers to differentiate themselves in a competitive healthcare marketplace as a signal to improve the perceived healthcare quality of services. Measuring the degree of patient satisfaction can help facilitate healthcare service provision and management as well as increasing and maintaining the quality of service provision. Measurements of patient satisfaction provides a closer more sensitive system of health care delivery to the managers in response to patient needs and desires.

Besides, policy designers should consider the work since patient satisfaction with healthcare system results from how well they are treated by healthcare services. In order to successfully improve healthcare system, patient satisfaction needs to be deeply focused. In Turkey similarly to United States, without considering patients' view,

comments, and complains, it is almost impossible to truly pursue total quality management or quality improvement activities in healthcare system.

This study highlights the assumption that patient satisfaction cannot be viewed as an isolated variable. The importance of measuring patient satisfaction and the quality of consumer/physician/medical provider relationships are crucial variables that should not be underestimated. In addition, since most hospitals in Turkey are public hospitals, marketing the competence and qualifications of the service providers that they employ need to get more attention. As seen in the US, private hospitals always market this component, therefore, Turkish hospitals are supposed to consider doing the same.

In conclusion, patient satisfaction seems to be a key for the responsiveness of the national healthcare system and the strategic changes' implementation. There have been remarkable development and changes in the Turkish healthcare system including infrastructure of healthcare services and the structure of supply and demand. However, there is a huge gap that Turkey needs to fulfill to reach purpose desired. Turkey still falls behind in terms of healthcare quality (OECD, 2014b). Therefore, while focusing on coverage and access were the right priorities in the beginning of the health transformation program, Turkey's healthcare system now must focus on quality and outcomes (OECD, 2014a). Focusing on patient satisfaction is going to help to build on HTP's success as the emphasis shifts from encouraging high volumes of care to delivering high quality health services. Therefore, seeking to understand patient perspectives can help to improve the quality of health as well.

## CHAPTER 5

### MANUSCRIPT 2: SATISFACTION WITH SPECIFIC HEALTHCARE SERVICES<sup>3</sup>

#### 5.1 INTRODUCTION

Nowadays, healthcare satisfaction has become the latest trend in measuring quality to have a competitive advantage or best practice in the healthcare industry (Sinha et al., 2010). Over the past 30 years, consumer satisfaction or consumer satisfaction has gained widespread recognition as a measure of quality in many services and become an attribute of quality, a legitimate and desired healthcare goal (Shaw & Shaw, 1986). The measurement of the quality of care gives information on the provider's success at meeting patients' values and expectations, which is an important tool for researchers, administrators, and planners to evaluate the system (Donabedian, 1980).

Patient satisfaction is commonly used as an indicator for measuring the quality in healthcare. Donabedian, the pioneer of the quality of care theory, describes that patient's satisfaction is a criteria to predict healthcare outcome, which is one of three-part approaches to quality assessment (Donabedian, 1988). Those three keys of the theory—structure, process, and outcome—work in tandem with each other; the structure of care relates to the process of care, and these in turn affect the outcomes of care. Besides, the

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<sup>3</sup> Serdar Aydin, M. Mahmud Khan, Phd, Brian Chen, PhD, Ercan S. Turk, Phd, and Yusuf Celik, PhD. 2018. To be submitted to Health Affairs.

2000 World Health report has underlined the role of satisfaction in the three fundamental objectives of health systems (i.e. improving the health of the population they serve, responding to people's expectations, and providing financial protection against the costs of ill-health) to meet with public expectation (World Health Organization, 2000).

Satisfaction with health systems has been a major concern for many countries. In order to evaluate healthcare system performance, the measurement of patient satisfaction is an essential part in terms of service quality and healthcare system responsiveness (Stepurko et al., 2016). Across developed and developing countries, patient satisfaction is playing an increasingly crucial role in in terms of monitoring and maintaining the quality of care and healthcare performance. The increasing importance of patient experience can help to capture the 'responsiveness' of the health system, referring to the manner and environment in which people are treated when they seek healthcare and how systems respond to people's expectations from the perspective of patient experience through its components, respect for dignity, confidentiality, autonomy, access to social support networks, and choice of provider (Bleich et al., 2009).

Patients' view should be sought in order to improve the responsiveness of healthcare to match with their needs (al-Mandhari et al., 2004), and responsiveness is the one of three main goals of the WHO to improve national health systems' performance (WHO, 2000). Health systems have three fundamental objectives which are supposed to be met to prevent public dissatisfaction with healthcare services: improving the health of the population they serve, responding to people's expectations, and providing financial protection against the costs of ill-health.

Therefore, more accurate and legitimate assessment of healthcare system performance can be done through considering the public/population views, experiences, and perceptions (Park et al., 2016). Being aware of the public's level of satisfaction with healthcare system can provide insights into how to manage the unique challenges of the service delivery (Vogus & McClelland, 2016). Evaluation of the services reflects the perceived value that the population ascribes to the health system, helping to measure and improve healthcare performance (Paul et al., 2016).

Although the increased focus on satisfaction as an outcome measure resulted in a growing body of research, the factors affecting patient satisfaction remain largely unknown (Jackson et al., 2001). Most of the studies that focused on measuring predictors of satisfaction have explained only a small portion of satisfaction variance, which doesn't pass more than 20% (Jackson & Kroenke, 1997). Linder-Pelz underlined that due to the lack of good models of satisfaction, most models still have little power to explain satisfaction (Linder-Pelz, 1982). The results demonstrate that there are still important gaps in our understanding of which factors affect patient satisfaction that necessitate further study.

In conclusion, better information regarding the factors that have affected satisfaction can assist healthcare providers, public policy analysis, healthcare managers, practitioners, and planners to improve the quality of the services they deliver to users (Rosemarie Crow et al., 2002). For instance, the physician's sensitivity to patient needs and experiences has been increasing and receiving better results on patient evaluations, which is accepted as a good indicator of quality (Dagdeviren & Akturk, 2004). Therefore, as a widely accepted study argued, without a better understanding of what causes patients

to be more or less satisfied with the care they receive, it cannot be clear to evaluate the healthcare system (Ware et al., 1977).

## 5.2 METHODS

This study aims to explore a relationship between each healthcare services and individual level patient satisfaction with healthcare system. The research question is;

What is the effect of demographic and structural factors on patient satisfaction with specific each healthcare services?

The primary source of data for this study was collected from a public source that is the Turkey Health Survey, conducted face to face method from the sample household addresses by the Republic of Turkey's Turkish Statistical Institute. Adult participants were chosen using two-stage stratified cluster sampling through the "National Address Database (NADB)" constituting a base for "Address Based Registry System (ABRS)" (Global Health Data Exchange, 2016), (Global Health Data Exchange, 2016; TurkStat, 2017). The data was conducted and available for only 2008, 2010, 2012 and 2014. However, 2014 dataset did not cover satisfaction with healthcare system section. Therefore, this year dataset was excluded from the study.

All covariates were selected based on previous research, literature and the models in which as association with satisfaction was detected (Bleich et al., 2009; Kane et al., 1997; Thiedke, 2007; Thompson & Sunol, 1995).

The descriptive analysis presents the group frequencies (for Discrete variables) or means, standard deviations, and ranges (for Continuous variables) for all variables. The Chi square analysis is also computed to test for the independency of the dependent variables, the Pearson correlation is also computed to examine the degree of association

between the dependent variables. These analyses will consist of a series of univariate analyses consisting of Pearson's chi square tests to test association between categorical variables, Pearson's product moment correlations to test association between numerical variables, and because of having mixed factors consisting of categorical and continuous variables, GLM test was performed to determine what factors effecting overall patient satisfaction.

Satisfaction was measured by 7 variables ranging from 1 (very satisfied) to 5 (very dissatisfied) measuring satisfaction with the healthcare services provided: Health centers and MCH/FB centers (1), Public hospitals (including emergency departments) (2), Private health institutions (including emergency departments) (3), Family doctors or GPs (4), Specialists (5), Dentists (6), and Health professional other than doctors (7).

For empirical estimate of each services;

*Y = f(year, age, gender, area of residency, education, marital status, overall happiness, household net monthly income, working status, coverage, source of income, health status-self reported, do you have any longstanding illness or 2 health problems, have you been limited because of a health problem, for at least the past 6 month, when you consulted a medical or surgical specialist, was there any time during the past 12 months when you really needed to consult a specialist but did not, have you visited Emergency services, was there any time during the past 12 months when you really needed to be hospitalized following recommendation from a doctor, either as an inpatient or a day patient, but did not, how many nights in total you stayed in hospital, how many times you consulted a GP or family doctor, during the past four weeks, how many times you consulted a specialist, during the past four weeks, have you been absent from work*



*for reasons of health problems, how many day in total were you absent from work for reasons of health problems, in the past 12 months, what was the main reason for not consulting a specialist, what was the main reason for not being hospitalized)*

### 5.3 RESULTS

The Table below shows the significance of the variables from each of the 7 different analysis for each service.

**Table 5.1 The statistical result of each services**

Parameter	Service 1	Service 2	Service 3	Service 4	Service 5	Service 6	Service 7
Intercept	0.000	0.000	0.000	0.000	0.000	0.000	0.000
happiness	0.000	0.000	0.000	0.000	0.000	0.000	0.000
real_monthly_income	0.000	0.000	0.429	0.000	0.670	0.251	0.000
[year=2008]	0.000	0.000	0.103	0.000	0.000	0.000	0.000
[year=2010]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
[year=2012]	.	.	.	.	.	.	.
[area of residency=urban]	0.218	0.000	0.000	0.000	0.000	0.000	0.000
[area of residency=rural]	.	.	.	.	.	.	.
[age=15-24]	0.000	0.000	0.004	0.001	0.000	0.000	0.000
[age=25-34]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
[age=35-44]	0.000	0.000	0.000	0.002	0.000	0.000	0.000
[age=45-54]	0.000	0.001	0.000	0.013	0.000	0.000	0.005
[age=55-64]	0.046	0.023	0.001	0.746	0.016	0.107	0.059
[age=65-74]	0.769	0.672	0.779	0.461	0.554	0.456	0.869
[age=75+]	.	.	.	.	.	.	.
[gender=male]	0.002	0.539	0.000	0.000	0.002	0.000	0.212
[gender=female]	.	.	.	.	.	.	.
[who pays treatment costs=public institutions]	0.166	0.867	0.333	0.073	0.020	0.000	0.149
[who pays your treatment costs=GERF]	0.753	0.757	0.603	0.192	0.795	0.037	0.398
[who pays your treatment costs=SSI]	0.457	0.691	0.237	0.185	0.781	0.103	0.182
[who pays your treatment costs=Bag-Kur]	0.208	0.571	0.059	0.026	0.334	0.928	0.855
[who pays your treatment costs=Green Card]	0.853	0.142	0.936	0.605	0.342	0.038	0.596
[who pays your treatment costs=Private Health Insurance]	0.010	0.000	0.079	0.030	0.347	0.921	0.658

[who pays your treatment costs=Private Fund]	0.035	0.002	0.001	0.996	0.236	0.123	0.369
[who pays your treatment costs=By himself/herself]	0.617	0.439	0.651	0.495	0.392	0.194	0.137
[who pays your treatment costs=others]	.	.	.	.	.	.	.
[education=illiterate]	0.000	0.000	0.000	0.000	0.001	0.025	0.000
[education=no formal education]	0.000	0.000	0.000	0.000	0.000	0.031	0.000
[education=primary school]	0.000	0.000	0.000	0.000	0.000	0.013	0.000
[education=primary education]	0.000	0.000	0.000	0.000	0.000	0.176	0.000
[education=secondary school and equivalent]	0.000	0.000	0.000	0.001	0.001	0.221	0.000
[education=high school]	0.000	0.000	0.004	0.047	0.366	0.851	0.049
[education=university or faculty]	0.062	0.039	0.073	0.140	0.199	0.326	0.471
[education=master, doctorate]	.	.	.	.	.	.	.
[marital status=single, never married]	0.804	0.001	0.311	0.080	0.499	0.380	0.336
[marital status=married]	0.011	0.000	0.799	0.831	0.965	0.767	0.054
[marital status=widowed]	0.120	0.000	0.653	0.448	0.943	0.565	0.325
[marital status=divorced]	.	.	.	.	.	.	.
[working status=retired]	0.765	0.000	0.011	0.464	0.215	0.252	0.619
[working status=not able to work]	0.006	0.017	0.616	0.058	0.258	0.045	0.049
[working status=others]	.	.	.	.	.	.	.
[have you ever worked, in seven days before the date=Yes]	0.892	0.792	0.228	0.001	0.679	0.041	0.009
[have you ever worked, in seven days before the date=No]	.	.	.	.	.	.	.
[source of income=income from work(as employee or self-employed)]	0.716	0.055	0.984	0.815	0.038	0.329	0.987
[source of income=employee pension]	0.239	0.332	0.432	0.176	0.119	0.603	0.556
[source of income=movable and real estate]	0.044	0.138	0.389	0.016	0.829	0.266	0.066
[source of income=old-age or survivor's benefits / sickness or disability benefits]	0.201	0.654	0.263	0.042	0.914	0.867	0.527
[source of income=family/children related allowances]	0.008	0.049	0.181	0.250	0.030	0.078	0.049
[source of income=housing allowances]	0.082	0.190	0.388	0.631	0.700	0.977	0.501

[source of income=education-related allowances]	0.392	0.567	0.748	0.288	0.323	0.603	0.391
[source of income=disability pension]	0.035	0.936	0.674	0.022	0.710	0.902	0.232
[source of income=disability care allowances]	0.004	0.094	0.306	0.004	0.445	0.586	0.225
[source of income=conditional cash transfer]	0.167	0.058	0.037	0.021	0.013	0.123	0.026
[source of income=other regular allowances]	0.831	0.224	0.534	0.706	0.169	0.485	0.394
[source of income=unemployment benefits]	0.008	0.592	0.019	0.317	0.582	0.236	0.468
[source of income=no income]	.	.	.	.	.	.	.
[health status_self reported=very good]	0.000	0.000	0.000	0.000	0.000	0.000	0.001
[health status_self reported=good]	0.004	0.000	0.096	0.042	0.001	0.004	0.034
[health status_self reported=fair]	0.175	0.005	0.374	0.205	0.029	0.033	0.277
[health status_self reported=bad]	0.427	0.015	0.568	0.524	0.149	0.092	0.247
[health status_self reported=very bad]	.	.	.	.	.	.	.
[do you have any longstanding illness or 2 health problems=Yes]	0.034	0.927	0.798	0.000	0.020	0.117	0.021
[do you have any longstanding illness or 2 health problems=No]	.	.	.	.	.	.	.
[have you been limited because of a health problem, for at least the past 6 month=severely limited]	0.649	0.405	0.041	0.963	0.160	0.445	0.780
[have you been limited because of a health problem, for at least the past 6 month=limited but not severely]	0.245	0.517	0.860	0.030	0.360	0.052	0.000
[have you been limited because of a health problem, for at least the past 6 month=not limited at all]	.	.	.	.	.	.	.
[when you consulted a medical or surgical specialist=less than 12 months ago]	0.796	0.711	0.001	0.796	0.000	0.067	0.077

[when you consulted a medical or surgical specialist=12 months ago or longer]	0.644	0.268	0.034	0.890	0.009	0.139	0.046
[when you consulted a medical or surgical specialist=never]	.	.	.	.	.	.	.
[was there any time during the past 12 months when you really needed to consult a specialist but did not=Yes]	0.001	0.000	0.007	0.136	0.000	0.151	0.000
[was there any time during the past 12 months when you really needed to consult a specialist but did not=No]	.	.	.	.	.	.	.
[have you visited Emergency services=Yes]	0.042	0.000	0.605	0.351	0.394	0.724	0.000
[have you visited Emergency services=No]	.	.	.	.	.	.	.
[was there any time during the past 12 months when you really needed to be hospitalized, either as an inpatient or a day patient, but did not=1]	0.530	0.146	0.239	0.059	0.844	0.776	0.076
[was there any time during the past 12 months when you really needed to be hospitalized, either as an inpatient or a day patient, but did not=2]	.	.	.	.	.	.	.
[how many nights in total you stayed in hospital =never]	0.000	0.000	0.054	0.000	0.000	0.046	0.000
[how many nights in total you stayed in hospital=Less than 4 nights]	0.037	0.000	0.606	0.039	0.018	0.112	0.041
[how many nights in total you stayed in hospital=4 or more nights]	.	.	.	.	.	.	.
[how many times you consulted a GP or family doctor, during the past four weeks=never]	0.000	0.412	0.144	0.000	0.160	0.867	0.661
[how many times you consulted a GP or family doctor, during the past four weeks =Less than 4 times]	0.150	0.252	0.303	0.119	0.240	0.980	0.710
[how many times you consulted a GP or family doctor, during the past four weeks=4 or more times]	.	.	.	.	.	.	.

[how many times you consulted a specialist, during the past four weeks=never]	0.873	0.258	0.697	0.076	0.643	0.443	0.667
[how many times you consulted a specialist, during the past four weeks=Less than 4 times]	0.684	0.114	0.435	0.359	0.625	0.324	0.269
[how many times you consulted a specialist, during the past four weeks=4 or more times]	.	.	.	.	.	.	.
[have you been absent from work for reasons of health problems =Yes]	0.152	0.581	0.614	0.559	0.513	0.716	0.231
[have you been absent from work for reasons of health problems =No]	.	.	.	.	.	.	.
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=never]	0.076	0.075	0.146	0.095	0.341	0.353	0.073
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=less than 11 days]	0.055	0.653	0.336	0.891	0.534	0.786	0.156
[how many day in total were you absent from work for reasons of health problems, in the past 12 months=11 and more days]	.	.	.	.	.	.	.
[what was the main reason for not consulting a specialist=could not afford]	0.009	0.051	0.181	0.038	0.835	0.007	0.520
[what was the main reason for not consulting a specialist =waiting list, other reasons due to the hospital]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
[what was the main reason for not consulting a specialist =waiting list, other reasons due to the hospital]	0.021	0.084	0.579	0.274	0.808	0.233	0.570
[what was the main reason for not consulting a specialist =too far to travel / no means for transportation]	0.151	0.976	0.293	0.015	0.628	0.486	0.896
[what was the main reason for not consulting a specialist =fear of doctor/hospitals/examination/treatment ]	0.330	0.630	0.207	0.413	0.294	0.089	0.710

[what was the main reason for not consulting a specialist =could not find any one to take to hospital]	0.426	0.018	0.315	0.932	0.406	0.112	0.078
[what was the main reason for not consulting a specialist =no permission from family or relatives]	0.900	0.319	0.771	0.855	0.493	0.127	0.216
[what was the main reason for not consulting a specialist =very late appointment]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
[what was the main reason for not consulting a specialist =other reason]	.	.	.	.	.	.	.
[what was the main reason for not being hospitalised =could not afford]	0.268	0.104	0.252	0.001	0.572	0.237	0.047
[what was the main reason for not being hospitalised =waiting list, other reasons due to the hospital]	0.161	0.003	0.097	0.270	0.073	0.023	0.105
[what was the main reason for not being hospitalised =could not take time because of work, care for children or for others]	0.669	0.269	0.328	0.019	0.375	0.912	0.236
[what was the main reason for not being hospitalised =too far to travel / no means for transportation]	0.943	0.076	0.145	0.994	0.436	0.064	0.675
[what was the main reason for not being hospitalised =fear of surgery//treatment]	0.344	0.010	0.012	0.055	0.042	0.821	0.097
[what was the main reason for not being hospitalised =could not find any one to take to hospital]	0.475	0.541	0.985	0.479	0.965	0.643	0.265
[what was the main reason for not being hospitalised =no permission from family or relatives]	0.017	0.069	0.079	0.099	0.072	0.258	0.001
[what was the main reason for not being hospitalised =very late appointment]	0.000	0.006	0.251	0.157	0.929	0.318	0.883
[what was the main reason for not being hospitalised =other reason]	.	.	.	.	.	.	.

The result shows that overall happiness has positive effect for each service on patient satisfaction, and it implies that increase in overall happiness will positive

influence overall satisfaction. Moving to year effect, there exist a negative trend with decrease in overall satisfaction every year for each service. For example, precisely, there is about 0.13 decrease in overall satisfaction from year 2008 to 2012 for the health services of the health center and MCH/FB center (service 1). Similar negative effect was observed from 2010 to 2012. However, the negative effect is a little lower compared to 2008 – 2012. The result also shows that there is a significant relationship between area of residency and patient satisfaction with each service except service 1 ( $P < 0.218$ ). Besides, for urban-rural, patients that resides in urban are generally less satisfied when compared with rural patients for each service. According to some studies, individuals living in urban areas were more satisfied (64.0%) than those living in rural areas (28.2%) when comparing the level of satisfaction with area of residency (Jadoo et al., 2012). On the contrary, another study found that patient satisfaction was higher among rural residents compared to urban, which could be explained by low expectations (Footman et al., 2013).

For patients of age group 15-24, negative effect was observed implying they are generally unsatisfied with the health care system for service 1. The patients are about 0.142 less satisfied compared to the base category of age group 75 and above. Similar negative effects were observed for patients of age group 25 – 34, 35 – 44, 45 – 54 and 55 – 64. The result shows that older age group is more likely satisfied with each service compared to younger patients. In addition to the findings, many studies conclude that older patients tend to be more satisfied than younger patients (Alrubaiee & Alkaa'ida, 2011; Jackson et al., 2001; Tucker III, 2000). A study conducted by Jackson found out that patients who are 65 age and over were more likely to be satisfied with healthcare system compared to people who were younger (Jackson et al., 2001). Some results for the

role of age in patient satisfaction suggest that the effect of age stems from different expectation and attitudes that older patients may hold, such as lower expectations of healthcare, and therefore such individuals can be easily satisfied with the healthcare system. Others have suggested that older patients may be treated with more respect and form better relationships with providers.

Additionally, the table also shows that there is a significant difference between male and female for each service except service 2 and service 7. The gender effect showed that male are about .028 less satisfied when compared to females for the service 1. Those 7 services have the same result showing that females are more likely to be satisfied with the services compared to male. Besides, the role of gender on patient satisfaction with healthcare system is not consistent. For instance, while a result concluded that gender seems to be unimportant (Jackson et al., 2001), another study found that women were more likely satisfied with healthcare system compared to men (Alrubaiee & Alkaa'ida, 2011). In addition, Nguyen found that men tended to be more satisfied than women and women tended to complain more often than men (Thi et al., 2002).

From the payment institutions, only private health insurance and private fund are significant at 5% level for each service type. The negative effects indicate that patients whom health bills were paid by private health insurance and private fund are less satisfied with the healthcare services than other institution. For example, the effect is about 0.04 lower when compared to other categories in the service 1. According to some studies, insured patients were more likely to be satisfied with the healthcare system when compared to uninsured patients (OR 2.79, 95% CI 2.07-3.77) (Maharlouei et al., 2017).



At the same time, a study found that private health spending resulted to be negatively correlated with patient satisfaction with healthcare system as an increase of private health expenditures made patient satisfaction lower by 98.7% (Xesfingi & Vozikis, 2016).

In addition, the result shows that there is a significant relation between education and each healthcare services. Patients with higher education are most likely less satisfied with each healthcare services than patients with lower education. For example, patients with college degree is less satisfied with healthcare services compare to patients with primary school degree. According to some studies, patients who have a lower education level were more satisfied compared to those with a higher education level (Hall & Dornan, 1988; Lo, 2014; Sitzia & Wood, 1997). Consistently with the other studies, a study concluded that dissatisfied respondents had significantly a higher level of education than satisfied ones ( $P < 0.001$ ) (Maharlouei et al., 2017). The results can be explained by considering that those patients with more education are likely to have higher expectations of their care, which results in more disappointment as well as dissatisfaction (Hall & Dornan, 1990).

Furthermore, for marital status, the only significant category is the married. The married patients seem to be a little bit satisfied with the health care system when compared with others. The relationships between marital status and patient satisfaction are also found to be inconsistent (Quintana et al., 2006). The study concluded that single or divorced patients have higher patient satisfaction scores, whereas another study found that married and single patients are more satisfied than widowed and divorced patients. (Nicolucci et al., 2009).

The result shows that source of income categories is mostly insignificantly related with patient satisfaction with each healthcare service. For instance, the most significantly related to overall satisfaction is family/children or related health allowances in the service 1. The effect is significantly negative related with overall satisfaction at the 5% level. This implies, patients whose health bills were paid by their family are less satisfied with the healthcare services. Similar negative effect was observed for those with other regular allowance. The base category for source of income is those with no income. On the other hand, positive effects were observed for disability care allowances and unemployment benefits in the service.

Additionally, those who reported health status as very good and good are more likely to be satisfied with each healthcare services compared to those who reported it as very bad. Out of the five categories of health status self-reported, fair and bad are insignificant at 5% level at each healthcare services. The result can be explained by concluding that health status, both physically and psychologically, is associated with patient satisfaction. A study concluded that health status and health outcomes affect satisfaction; sicker patients and psychologically distressed patients record lower satisfaction (Rosemarie Crow et al., 2002)

Besides, there is no any significant difference between patients who have been severely limited because of health problem for the past six month and patients who have been not limited at all with satisfaction with healthcare services. Furthermore, the table shows that patients who needed to consult a specialist during the past 12 months but did not are less likely to be satisfied with the following health services; service 1, service 2, service 3, service 5, and service 7 compared to patients who not needed to consult a

specialist during the past 12 months. Besides, there is no significant difference between those groups at the service 4 and service 6. Moreover, patients who have been absent from work due to health conditions are statistically insignificant compared to patients who have not been absent from work due to health conditions for each service.

#### **5.4 LIMITATIONS**

The limitations of this study stem from its reliance on secondary data. Firstly, the research was limited to the data available, contents, and wording of the THS questionnaire. Since the questionnaire has been already prepared, we were not able to design or change the direction. That is a common issue faced when working with secondary dataset. Secondly, this study did not explore other factors that may influence patient satisfaction with health care services. For example, our study did not include a separate assessment of the quality of care provided: One of the aspects of measuring patient satisfaction is to evaluate quality of care as well. Many studies argued that patient's satisfaction is a criterion to predict healthcare outcome, worthy of measure in its own right. Besides, patient satisfaction is identified as an important outcome for healthcare services (Alexander et al., 1993; Badri et al., 2009; Donabedian, 1966). A study recommended that patient satisfaction is strongly influenced by patient-doctor communication variables and at all time points immediately after the visit (Jackson et al., 2001). Unfortunately, the data set does not include the variables providing those details.

Another limitation in the study is that the dataset does not have type of provider and ownership status if it is private or public hospitals-services care received. Therefore, we are not able to come up whether actual differences exist service providers in these public or private hospitals.

Additionally, It is recommended that waiting time to see physicians, spending time with patients, consultation time, privacy, continuity of care, and medicines are also need to be investigated for further researches. Similarly, the environmental factors such as comfortable environment, facilities and services, building, convenient location of the hospital and cleanliness should also be addressed to deeply understand what really behind patient behavior effecting his/her satisfaction.

## **5.5 CONCLUSION & DISCUSSION**

Measuring healthcare quality can help healthcare managers to effectively set control mechanism and initiate improvement programmes. Wherever there are complaints by the patients, only targeting a reduction in such complaints is not a sign of improvement, what is needed instead is an effective evaluation of the accessibility of complaints procedures and the introduction of incentives, such as feedback and proof of real action, to encourage and support complaints. This work found that patient satisfaction is fundamental to improving health service performance and image and hence healthcare quality.

This study supports the fact that attention must be given to both accessibility and quality factors. The specific factors such as service accessibility and quality of service provision are essential to enhancing the attractiveness of healthcare services. The results of this study might raise a number of policy recommendations for improving patient satisfaction in the future for Turkey. First, social-demographic and structural characteristics continue to be important factors having significant effect on the use of health care. It is recommended that the attributes falling under satisfaction from treatment

process like waiting time, consultation time, privacy, continuity of care, medicines and investigations should be addressed.

According to this result, we suggest that greater gains in healthcare system performance could be done by understanding patient satisfaction with healthcare services. Socio-demographic and structural characteristics are significance in determining patient satisfaction; Older patient, women, patient with lower education, lower income, married, living in rural, reported a very good health status, having any longstanding illness, treatment cost paid by public insurance tend to report higher score of satisfaction. With exception of age, education, and income, these results however, are inconsistent and sometimes contradictory with previous studies (Calnan et al., 1994; Thi et al., 2002). In addition to the findings supported by previous studies, older patients tended to have higher satisfaction scores (Quintana et al., 2006). Similarly, patients who have high education, and married had higher satisfaction scores compared to low educated and single patients. In contrast to other studies, our results showed that women tended to have higher satisfaction scores than men (Rosemarie Crow et al., 2002; Thi et al., 2002). It could be explained by saying that men tended to complain more often than women do in the country. These results might indicate that men have more expectation, or men have different experiences than women. In many households, men might determine the healthcare provided for their children, spouses, parent, parent-in-law and even co-workers based upon his experience or satisfaction level with a provider or facility because of cultural approach.

According to this result we conclude that, as in previous studies, there is evidence that socio-demographic characteristics and structural characteristics affect overall patient

satisfaction with healthcare services. The empirical findings of this study suggest that policy makers and managers should consider the relative effectiveness of the characteristics in patient satisfaction.

The study provides initial empirical evidence associating with patient satisfaction with healthcare services. Policy managers, providers, healthcare managers can use the current findings to develop healthcare service strategies that deepen and enhance patient satisfaction. The current findings may be used by managers to differentiate themselves in a competitive healthcare marketplace as a signal to improve the perceived healthcare quality of services. Measuring the degree of patient satisfaction can help facilitate healthcare service provision and management as well as increasing and maintaining the quality of service provision. Measurements of patient satisfaction provides a closer more sensitive system of health care delivery to the managers in response to patient needs and desires.

Besides, policy designers should consider the work since patient satisfaction with healthcare system results from how well they are treated by healthcare services. In order to successfully improve healthcare system, patient satisfaction needs to be deeply focused. In Turkey similarly to United States, without considering patients' view, comments, and complains, it is almost impossible to truly pursue total quality management or quality improvement activities in healthcare system.

This study highlights the assumption that patient satisfaction cannot be viewed as an isolated variable. The importance of measuring patient satisfaction and the quality of consumer/physician/medical provider relationships are crucial variables that should not be underestimated. In addition, since most hospitals in Turkey are public hospitals,

marketing the competence and qualifications of the service providers that they employ need to get more attention. As seen in the US, private hospitals always market this component, therefore, Turkish hospitals are supposed to consider doing the same.

In conclusion, patient satisfaction seems to be a key for the responsiveness of the national healthcare system and the strategic changes' implementation. There have been remarkable development and changes in the Turkish healthcare system including infrastructure of healthcare services and the structure of supply and demand. However, there is a huge gap that Turkey needs to fulfill to reach purpose desired. Turkey still falls behind in terms of healthcare quality (OECD, 2014b). Therefore, while focusing on coverage and access were the right priorities in the beginning of the health transformation program, Turkey's healthcare system now must focus on quality and outcomes (OECD, 2014a). Focusing on patient satisfaction is going to help to build on HTP's success as the emphasis shifts from encouraging high volumes of care to delivering high quality health services. Therefore, seeking to understand patient perspectives can help to improve the quality of health as well.

## CHAPTER 6

### CONCLUSION AND DISCUSSION

#### 6.1 LIMITATIONS

While the strengths of our study include its prospective design, large sample size, use of a valid, reliable instrument to understand patient satisfaction better, our study has several limitations. The limitations of this study stem from its reliance on secondary data. Firstly, the research was limited to the data available, contents, and wording of the THS questionnaire. Since the questionnaire has been already prepared, we were not able to design or change the direction. That is a common issue faced when working with secondary dataset.

Secondly, this study did not explore other factors that may influence patient satisfaction with health care services. For example, our study did not include a separate assessment of the quality of care provided: One of the aspects of measuring patient satisfaction is to evaluate quality of care as well. Many studies argued that patient's satisfaction is a criterion to predict healthcare outcome, worthy of measure in its own right. Besides, patient satisfaction is identified as an important outcome for healthcare services (Alexander et al., 1993; Badri et al., 2009; Donabedian, 1966). A study recommended that patient satisfaction is strongly influenced by patient-doctor communication variables and at all time points immediately after the visit (Jackson et al., 2001). Unfortunately, the data set does not include the variables providing those details. Another limitation in the study is that the dataset does not have type of provider and



ownership status if it is private or public hospitals-services care received. Therefore, we are not able to come up whether actual differences exist between services or service providers in these public or private hospitals.

Additionally, It is recommended that waiting time to see physicians, spending time with patients, consultation time, privacy, continuity of care, and medicines are also need to be investigated for further researches. Similarly, the environmental factors such as comfortable environment, facilities and services, building, convenient location of the hospital and cleanliness should also be addressed to deeply understand what really behind patient behavior effecting his/her satisfaction.

## **6.2 CONCLUSION**

Measuring healthcare quality can help healthcare managers to effectively set control mechanism and initiate improvement programmes. Wherever there are complaints by the patients, only targeting a reduction in such complaints is not a sign of improvement, what is needed instead is an effective evaluation of the accessibility of complaints procedures and the introduction of incentives, such as feedback and proof of real action, to encourage and support complaints. This work found that patient satisfaction is fundamental to improving health service performance and image and hence healthcare quality.

This study supports the fact that attention must be given to both accessibility and quality factors. The specific factors such as service accessibility and quality of service provision are essential to enhancing the attractiveness of healthcare services. The results of this study might raise a number of policy recommendations for improving patient satisfaction in the future for Turkey. First, social-demographic and structural

characteristics continue to be important factors having significant effect on the use of health care. It is recommended that the attributes falling under satisfaction from treatment process like waiting time, consultation time, privacy, continuity of care, medicines and investigations should be addressed.

According to this result, we suggest that greater gains in healthcare system performance could be done by understanding patient satisfaction with healthcare services. Socio-demographic and structural characteristics are significance in determining patient satisfaction; Older patient, women, patient with lower education, lower income, married, living in rural, reported a very good health status, having any longstanding illness, treatment cost paid by public insurance tend to report higher score of satisfaction. With exception of age, education, and income, these results however, are inconsistent and sometimes contradictory with previous studies (Calnan et al., 1994; Thi et al., 2002). In addition to the findings supported by previous studies, older patients tended to have higher satisfaction scores (Quintana et al., 2006). Similarly, patients who have high education, and married had higher satisfaction scores compared to low educated and single patients. In contrast to other studies, our results showed that women tended to have higher satisfaction scores than men (Rosemarie Crow et al., 2002; Thi et al., 2002). It could be explained by saying that men tended to complain more often than women do in the country. These results might indicate that men have more expectation, or men have different experiences than women. In many households, men might determine the healthcare provided for their children, spouses, parent, parent-in-law and even co-workers based upon his experience or satisfaction level with a provider or facility because of cultural approach.

According to this result we conclude that, as in previous studies, there is evidence that socio-demographic characteristics and structural characteristics affect overall patient satisfaction with healthcare services. The empirical findings of this study suggest that policy makers and managers should consider the relative effectiveness of the characteristics in patient satisfaction.

The study provides initial empirical evidence associating with patient satisfaction with healthcare services. Policy mangers, providers, healthcare managers can use the current findings to develop healthcare service strategies that deepen and enhance patient satisfaction. The current findings may be used by managers to differentiate themselves in a competitive healthcare marketplace as a signal to improve the perceived healthcare quality of services. Measuring the degree of patient satisfaction can help facilitate healthcare service provision and management as well as increasing and maintaining the quality of service provision. Measurements of patient satisfaction provides a closer more sensitive system of health care delivery to the managers in response to patient needs and desires.

Besides, policy designers should consider the work since patient satisfaction with healthcare system results from how well they are treated by healthcare services. In order to successfully improve healthcare system, patient satisfaction needs to be deeply focused. In Turkey similarly to United States, without considering patients' view, comments, and complains, it is almost impossible to truly pursue total quality management or quality improvement activities in healthcare system.

This study highlights the assumption that patient satisfaction cannot be viewed as an isolated variable. The importance of measuring patient satisfaction and the quality of

consumer/physician/medical provider relationships are crucial variables that should not be underestimated. In addition, since most hospitals in Turkey are public hospitals, marketing the competence and qualifications of the service providers that they employ need to get more attention. As seen in the US, private hospitals always market this component, therefore, Turkish hospitals are supposed to consider doing the same.

In conclusion, patient satisfaction seems to be a key for the responsiveness of the national healthcare system and the strategic changes' implementation. There have been remarkable development and changes in the Turkish healthcare system including infrastructure of healthcare services and the structure of supply and demand. However, there is a huge gap that Turkey needs to fulfill to reach purpose desired. Turkey still falls behind in terms of healthcare quality (OECD, 2014b). Therefore, while focusing on coverage and access were the right priorities in the beginning of the health transformation program, Turkey's healthcare system now must focus on quality and outcomes (OECD, 2014a). Focusing on patient satisfaction is going to help to build on HTP's success as the emphasis shifts from encouraging high volumes of care to delivering high quality health services. Therefore, seeking to understand patient perspectives can help to improve the quality of health as well.

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