Haigazian University

Factors of Healthcare Quality that affect Patient Satisfaction in Lebanese Hospitals

By

Maya Sami Abou Melhem

Approved by:

……..

Dr. Sona Jerejian First Reader

……..

Dr. Akram Tannir Second Reader

Date of Thesis presentation:15/6/2016

Haigazian University

Factors of Healthcare quality that affect Patient Satisfaction in Lebanese Hospitals

By

Maya Sami Abou Melhem

A Thesis

Submitted in Partial Fulfillment of the Requirements for the Degree of Master in Business Administration

To the Faculty of Business Administration and Economics

At Haigazian University

Beirut, Lebanon

June 2016

Haigazian University

Thesis Release Form

Maya Sami Abou Melhem

☐ Authorize Haigazian University to supply copies of my thesis to libraries or individuals upon request.

☐ Do not authorize Haigazian University to supply copies of my thesis to libraries or individuals for a period of two years starting with the date of the thesis defense.

…….

Signature

……

Date

Dedication

This thesis is dedicated to my mom who suffered from cancer due to a hospital mistake.

Acknowledgements

It was a long and hard journey throughout these 3 years. Finishing my master's degree was a challenge due to the bunch of responsibilities I have. But GOD's presence was enough to give me strength to stay patient and determinant in fulfilling what I have begun with.

A big and deep thank you would be expressed to my advisor Dr. Sona Jerejain who was a great guide and support throughout this research study.

Dr. Tannir's role was so essential especially in the statistical part, his guidance and recommendations are really appreciated.

A very big thank you goes to my partner in life, my husband Hisham Jaber who was my source of perseverance and patience in spite of all the ups and downs that I have passed through.

My mom, my source of power in life, and the only reason for choosing the topic of this research, thank you for being there whenever I needed you.

Family, friends, survey participants and each and every person who helped, encouraged and supported me, thank you for your time.

Haigazian University, it was a long journey since my first diploma. Thank you for the quality education you offered us, thank you for being a second home.

An Abstract of the Thesis Of

Maya Sami Abou Melhem

For: Master of Business Administration

Title: Factors of Healthcare Quality that Affect Patient Satisfaction in Lebanese Hospitals

The purpose of the study was to examine the impact of quality of healthcare offered in Lebanese hospitals on Lebanese patients of different educational level, age, monthly income, family status… Moreover, this study aimed to show whether there is a difference in satisfaction between accredited and non-accredited Lebanese Hospitals.

An empirical study was performed using a survey questionnaire which was distributed to 1000 Lebanese patients. 226 patients responded to the questionnaire, 91 from accredited hospitals and 110 from non-accredited ones.

Descriptive statistics were conducted followed by a reliability test, Factor Analysis, Multiple Regression with Stepwise method, Independent T-Test and One way ANOVA.

Empirical evidence from this study shows that there were quality health factors that positively correlated with level of satisfaction of patients with the care in the hospital.

Nevertheless, patients of accredited hospitals were more satisfied than patients of non-accredited hospitals.

On the contrary, there was not enough evidence to prove that socio demographic characteristics affect level of satisfaction.

The study recommends to managers of hospitals to greatly empathize on factors that affect satisfaction and work on improving them so that better satisfaction levels will be achieved by patients.

Table of Contents

Dedication …… page 4

Acknowledgments …… page 5

Abstract …… page 6

Table of Contents …….. page 8

Chapter one: Introduction …….. page 9

Chapter Two: Literature Review ……. Page 11

Chapter three: Summary of literature review …….. page 30

Chapter Four: Research Framework and Methodology

…… page 35

Chapter Five: Statistical Analysis …….. page 43

Chapter Six: Summary of Findings and Recommendations

…….. page 126

References …….. page 134

Chapter One

Introduction

Whenever we look around us and wherever we were, especially in Lebanon, we find that we are not living in a safe planet anymore. Crimes, explosions, garbage, and global warming became our points of concern in our daily life. And what is the main target of all of these! Our bodies… our health…

Protecting our health is what matters in order to be able to protect what really concerns us, our families, life, and future. Because of all what is happening, and because of my very harmful personal experience with healthcare in a Lebanese hospital, I intended to work on healthcare safety, hoping to be safe and protected from those who swear in front of GOD to protect and prevent us from dangers.

Healthcare evaluation that involves defining the objectives of care, monitoring healthcare inputs, measuring the extent to which the expected outcomes have been achieved and assessing the extent of any unintended or harmful consequences of the intervention, can be seen as a technical process, where performance is measured against an agreed set of fixed goals, or as an interactive process where the goals are shifting and defined by the economic and political marketplace.

Coming to patient safety and satisfaction that should always be a responsibility of each and every person in charge at any healthcare setting or ward (M. Zieneldein; Determinants of Patient Safety, Satisfaction and Trust), it is important to determine the factors associated with patient's satisfaction to understand what is valued by the patients, how the quality of care is perceived by the patients, and how to know where, when and how service change and improvement can be made. Patient satisfaction is created through a combination of responsiveness to the patient's views and needs, and continuous improvement of the healthcare services, as well as continuous improvement of the overall doctor- patient relationship (M. Zeineldein; The Quality of Healthcare and Patient Satisfaction). And because it is our right as patients to receive good quality of care, and it is the

responsibility of the hospital's staff in general to provide this care, we should be aware that patient satisfaction that results from this care's quality is a multidimensional construct that cumulate and sum satisfaction with various facets and aspects in the hospital (M. Zeineldein; The Quality of health care and Patient satisfaction).

Such Facets can affect patient satisfaction and play a key role in healthcare outcomes. That's why quality of care, patients' expectations and their preferences will be discussed, as well as the impact of accreditation and leadership on them.

Chapter Two

Literature Review

Patient satisfaction is how the patient evaluates what he receives from values during his hospital visit; how much he is satisfied from the overall result of the procedures and services provided and how he evaluates the hospital's experience. It is always influenced by the value of the services customers have received (Heskett Jones, Loveman, Sasser and Schlesigner, 1994).

Five key theories can be identified regarding patient satisfaction in healthcare:

1. Discrepancy and transgression theories of Fox and Storms (1981): the patient is satisfied when the patients' healthcare orientations and provider conditions of care, which differs between patient and another, are congruent; otherwise, the patient is dissatisfied.
2. Expectancy-value theory of Linder-Pelz (1982): satisfaction was mediated by prior expectations about care as well as personal beliefs and values about care. According to their operational definition, the positive evaluations of the distinct dimensions of healthcare is known as satisfaction.

   Linder-Pelz model was developed twice, first by Pascoe (1983) when he took the influence of expectations on satisfaction into account, and second by Strasser et al. (1993) who created a six factor psychological model: cognitive and affective perception formation, multidimensional construct, dynamic process, attitudinal response, iterative, and ameliorated by individual difference.
3. Determinants and Components theory of Ware et al. (1983): personal preferences and expectations mediate patients' subjective responses to experienced care what creates satisfaction.
4. Multiple Model theory of Fitzpatrick and Hopkins (1983): expectations, that reflects the health goals of the patient and the extent to which the illness

and healthcare violated the patient's personal sense of self, were socially mediated.

5. Health quality theory of Donabedian (1980): the patient's judgment on the quality of care in all its aspects, and particularly in relation to the interpersonal component of care is the expression of satisfaction or dissatisfaction. Thus, satisfaction is the outcome of the interpersonal process of care.
   (L. Gill, L. White; A Critical Review of Patient Satisfaction)

When we talk about satisfaction, we will be indirectly talking about quality of care involved, as well as patients' expectations and perceptions of what they are going to receive. It is the evaluation of the patients' emotional reaction between what they expect and receive, in addition to what they perceive regarding this kind of care. Thus, satisfaction ratings reflect three variables:

1. The realities (quality) of the care received.
2. The personal preference of the patient.
3. The patient expectation.

Quality

Healthcare quality that owes inherent intangibility, heterogeneity, and inseparability features is difficult to be measured (Conway and Willcocks; 1997) cited by (A. Naidu; Factors affecting patient satisfaction and healthcare quality). Thus, to maintain that the consumer is pleased with the quality of services provided, healthcare institutions, payers and consumer groups frequently examine patient satisfaction levels for feedback (L. Bolton, C. Aydin, N. Donaldson, D. Brown, M. Nelson, D. Harms; Nurse staffing and Patient Perception of Nursing Care). Thus, inorder to ensure and increase patient satisfaction, it is almost important to be able to define, measure and evaluate the quality of healthcare provided.

Quality, wrote Van Maanem (1984), the concept that is usually used in societies with a high standard of living, is an abstract defining the margin between desirability and reality (K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals). Whereas, when we measure the actual level of quality and add to it the efforts done to modify when

needed the provision of these services in the light of the results of the measurement, we will be talking about quality assurance (Coulter, 1991, p.121 cited by K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals). This measuring technique depends on certain standards that are considered as reference points in this evaluation process. They evolve definitions and judgments reached by agreement, in spite this consensus is often difficult to be reached (V. Maanem, 1984: cited by K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals). Quality healthcare that may most simply be seen in the frame work of patient's expectations versus actual experiences (Hopkins,1990; cited by K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals), must incorporate considerations such as acceptability, accessibility, equity, efficiency, effectiveness and appropriateness to maintain the improvement of this service (Redfern and Norman 1990, cited by K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals).

When we measure healthcare quality we will be helping managers to effectively set control mechanism and initiate improvement programs that will increase patient satisfaction and improve healthcare service performance and image (A. Naidu; Factors Affecting Patient Satisfaction and Healthcare Quality)

That's why, quality measures were divided into 3 main categories:

1. Structure: the medical delivery system's fixed characteristics such as staff number, types, qualifications and facilities. It is the conditions under which care is provided.
2. Process: what is done to and for the patient such as treatment. It is the professional activities associated with providing care (Van Maanen, 1984; Redfern and Norman, 1990).
3. Outcomes: changes in the patients' current and future health attributed to antecedent medical care. It is the most important aspect that finds the measure of health, wellbeing, or any other states are not the only result of the whole quality improvement process. They are the physical, psychological, and financial results as well (R. Kravitz; Patients' Expectations

for Medical Care: An Expanded Formulation Based on Reviews of the Literature).
(Donabedian, 1986 cited by A. Naidu in Factors affecting Patient satisfaction and Healthcare Quality).

Because patient satisfaction that encompasses the clinical results, economic measures and health related quality of life has come to be seen as a part of health outcome quality (Heidegger et al., 2006 cited by L. Gill, L. White; A Critical Review of Patient Satisfaction) it should be discussed from all perspectives. And because health services should be measured with respect to functional and technical qualities and not only patient satisfaction (L. Gill, L. White; A Critical Review of Patient Satisfaction), qualityin its broad definition, can be divided into two parts: Clinical and Process qualities.

1. **Clinical Quality:**

This foundation upon which the reputation of the organization is developed (Zifko-Baliga-Kramf, 1997; cited in K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals), is what the patient receives from the service provider. It is creating physical or physiological effects on patients through hospital's ability to achieve high standards of patient health through medical diagnosis, procedures and treatment (K. Marley, D. Colliert, and S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals).

It is also known as technical quality and determined by medical outcomes and what is delivered. But since the patient may not have the opportunities, equipment or expertise to evaluate clinical quality, outcomes are not immediately detectable, thus it is often difficult to evaluate it.

Patients receiving the same treatment may evaluate clinical quality differently, especially if it was measured during different stages of care; that is during health care delivery, following delivery, or during follow up care, since their perceptions may change over these time periods (Kane et al. 1997 cited in K. Marley, D. Colliert, S. Goldstein; The Role of Clinical and Process quality in Achieving Patient Satisfaction in Hospitals). It is all related to the interpersonal relationships of patients and their related aspects of care (L. Gill, L. White; A Critical Review of Patient Satisfaction).

Patient centered quality that aims to ensure that patient values guide all clinical decisions, and provide respectful and responsive care to individual patient preferences, needs, and values, defines 6 dimensions of patient centeredness that should be monitored:

1. Respect for patients' values, preferences, and expressed needs.
2. Coordination and integration of care.
3. Information, communication, and education.
4. Physical comfort.
5. Emotional support- relieving fear and anxiety.
6. Involvement of family and friends.
   (S. Gesell, PHD; R. Wolosin, PHD; Inpatients' Ratings of Care in 5 Common Clinical Conditions).

When we talk about clinical quality, it is important to take into consideration the aspects on which patients' evaluation accounts. The qualification of the provider (Donabedian, 1982) and the proper sequencing of medical diagnosis, selection, timing, and proper usage of diagnostic equipment (Li and Collier, 2000) effectively affects patients' evaluation.

This clinical quality that has a durable effect; to sustain life time enjoyment through endurable impact of services and relationships with the providers on patients' quality of life (Mac Stravic 1999), can be improved in many ways.

1. Improve the outcomes of medical procedures by developing guidelines focusing on the quality of clinical care (James, Cowan, Graham and Majeroni, 1997).

2. Ensuring that patients are receiving the highest level of care at the facility by monitoring the medical errors from inpatient and outpatient care (Shine, 2002).

3. Effective clinical guidelines based on scientific methods, training and expert databases can accomplish affective quality (Green, Wintfield, krasmer and Wells, 1997; James et al 1997; Goldstein and Schweikhart 2002).

Lack of appropriate treatment, incorrect drug prescriptions, lack of hygiene and late or incorrect diagnosis are some errors that are causing hundreds of thousands of people to die and millions to injure every year (Mortazavi et al. (2013), cited by M. Zineldein in Determinants of patient Safety, Satisfaction and Trust). Thus, to ensure patient safety, hospitals must seriously work on improving clinical quality of care to prevent such preventable errors.

The patient who is not necessarily the best evaluator of clinical quality, he/she can be engaged more in evaluating the process quality. Most of the time functional or process quality is the best determinant since patients may be unable to assess medical service technical quality accurately (A. Naidu; Factors affecting patient satisfaction and healthcare quality).

2. **Process Quality:**

Process quality, the result of service (nontechnical) delivery process engaged during and outside of the medical procedures, is patients' perceptions of how the service was created and delivered. It includes the effective and efficient process of patients' experiences in hospitals.

Since it is easy for patients to assess process quality outcomes, more personal care (good communication, empathy and caring) may lead to more satisfactory results. Thus, what is mostly important in delivering process quality is paying attention to the aspects that affects its efficiency and accuracy:

1. Effective service recovery: motivating the patient to continuously use the service by developing strategies to resolve customer complaints and satisfaction (Schweikhart, Strasser, and Kennedy, 1993).

2. Creating more empathetic, honest and sensitive interaction between patients and staff by involving patients' preferences and values in making improvements in the level of care delivered (Giangrande, 1998).

3. Delivery of accurate, timely and efficient analysis of hospital information and data to patients can lead to more informed decisions by hospital personnel (Li, 1997).

In general, 4 specific issues were identified as quality improvement priorities, regardless of the condition:

1. To improve the way in which the staff respond to patients' concerns and complaints made during the hospital stay.
2. To improve sensitivity of the staff to the inconvenience that health problems and hospitalization can cause patients.
3. To improve how the staff include patients in decisions about treatment.
4. To improve how the staff address patients' emotional and spiritual needs. (S. Gesell, PHD; R. Wolosin, PHD; Inpatients' Ratings of Care in 5 Common Clinical Conditions).

High levels of both clinical and process qualities affect patient satisfaction. And what is important is that managers work on increasing patient satisfaction by being aware and taking advantage of the ability of patients to evaluate process and clinical qualities. In addition, and in order for the quality of service to improve, it is critical that patients' opinions be taken into account (Berry and Parasuraman, 1997). Never the less, using theory based instruments when monitoring patients' opinions on care, following up of the results on later visits along with increasing healthcare professionals' knowledge of patients' quality appraisals, are all important for more distinct care outcomes (B. Wilde-Larsson, G. Larsson; Patients' views on quality of care and attitudes towards re-visiting providers). That's why the traditional concept of healthcare was based on 3 primary assumptions: the professional is an expert, the system is the gatekeeper for socially supported services, or the ideal patient is compliant and self-reliant (Throne et al., 2000), thus considering the patient as an important factor in his assumption (L. Gill, L. White; A Critical Review of Patient Satisfaction).

Personal preference and expectation

An expectation is an entitlement, anticipation, justification and a likelihood that emerges repeatedly as having a fundamental role in expressions of satisfaction (J. Sitzia and N. Wood; Patient Satisfaction: A Review of Issues and Concepts).

Stimson and Webb (1975) identified 3 categories of expectations: background expectation, interaction expectation, and action expectation.

1. Back ground expectation: it results from accumulated learning of the consultation/treatment process. It is explicit expectations that vary with

illness and particular circumstances. Never the less, much criticism centers on behaviors and patterns of activities and routines are expected what is at odds with these interactions.

2. Interaction expectations: Patients' expectations regarding the exchange which will take place with their doctor (when the doctor advices the patient to do something.)
3. Action expectations: it is the action that the doctor will take (prescribe a medicine or sets the patient to an operation).
   (J. Sitzia, N. Wood; Patient Satisfaction: A Review of issues and Concepts).
   Key features of patients' expectations include:
   1. Definitional orientation (probabilities vs. values)
   2. Level of specificity (expectations for care in general vs. expectations for a specific visit)
   3. Content (structure, process, or outcomes of care)
      (R. Kravitz; Patients' expectations for medical care: An Expanded Formulation Based on Review of the Literature).

Expectations refer to some notion standards or aspirations (Fitzpatrick, 1984). What the patient will be expecting is receiving a certain value or service from the organization (hospital) as a whole, doctors or nurses. So the level of satisfaction evolves over these 3 main important elements. Those will be care variables and referred to as the components of satisfaction. Never the less, Patient variables, including age, ethnic group, race, marital status, gender, personal characteristics and social class, all play a role in affecting the care variables.

Thus, patient expectations, the heterogeneous lot that focuses on structure, processes and outcomes of care, are expressed as probabilities or values, aimed at care in general or at a specific medical encounter (R. Kravitz; Patients' expectations for medical care: An Expanded Formulation Based on Review of the Literature). This lot is subject to certain determinants that play an important role in affecting the satisfaction process. For example, older people tend to be more satisfied with health care than do younger people (Houts et al., 1986; Blanchard et al., 1990; Zaher et al., 1991). This is because less information is expected from the doctor of old respondents (Cartwright and Anderson; 1981), they might be satisfied with any answer that ensures that their health is good. In addition, older patients was even more satisfied with the number of staff present than younger

patients(T. Kvist, A. Voutilanien, R. Montynen, K. Vehvilainen-Julkenen; The relationship Between Patients' Perceptions of Care Quality and 3 Factors: Nursing Staff Job Satisfaction, Organizational Characteristics and Patient Age). Other than age, educational level and social class affect satisfaction levels directly. Greater satisfaction is associated with lower levels of education, what makes the educational level a significant bearing on satisfaction (Hall and Dornan; 1990). When the patient is highly educated, he/she will be more conscious and aware of his/her rights; they will ask more questions and incline to challenge medical advice (A. Naidu; Factore affecting Patient Satisfaction and Healthcare Quality). Moreover, better information were given to people of higher social classes as regards to specific community services (Salvage et al. ; 1988); privileged patients receive less treatment than affluent patients even within the same health care facility (Hall and Dornan; 1990). In addition to the mentioned variables, race may play an efficient role in some countries, where white people might be treated in a better way and vice versa. Cultural backgrounds affects patients' satisfaction that vary among countries (Eiriz and Fiqueiredu, 2005; cited by A. Naidu, Factors affecting Patient Satisfaction and Healthcare quality). Gender is also an interesting factor, since women are mostly more conscious about their health and aim to be sure that everything is fine, and might be interested in small details. Mothers, for example, seem to expect more attention and care as well as good communication from their baby's pediatrician, and need to be provided with enough and sufficient information about their child's condition and its cause (J. Sitzia and N. Wood; Patient Satisfaction: A Review of Issues and Concepts).. Korsch et al. (1968) mentioned that failing to have the expectation of learning the causation and nature of their child's illness leads parents' satisfaction to be low in a great number of visits (R. Kravitz; Patients' expectations for medical care: An Expanded Formulation Based on Review of the Literature). Thus, the patients' encounters with an existing care structure and by their norms, expectations and experiences constitute the patients' perceptions of their service quality (B. Wilde-Larsson, G. Larsson; Patients' views on quality of care and attitudes towards re-visiting providers).

In conclusion, the primary determinants that affect patient satisfaction are:

1. Access: number of patient-physician contacts (Turner and Pol; 1995)

2. Waiting time, convenience and availability associated with healthcare experiences (Tucker, 2002).
3. Communication: it is how much the patient is provided psychological and non-technical information, kept informed through understandable terms, afforded social interactions and time during consultation, and to what degree he/she is heard (Tucker, 2002).
4. Outcomes: health care experiences and efforts done to lead a change in the medical physical health status (Tucker, 2002).
5. Service quality: the degree to which care was humane and competent (Tucker 2002).
6. Competence
7. Manner: how the staff interacts with the patient and staff sensitivity to the patient's personal experience (Andaleeb, 1988).

(A. Naidu; Factors affecting patient satisfaction and healthcare quality).

These variables were reduced to two by Tucker and Adams (2001) and became the primary dimensions that affect patient evaluations:

1. Provider Performance: it is associated with interpersonal relations and patient-caregiver interactions. It is found to be the most significant in patient evaluations.
2. Access: all the variables and their impediments that are related to the process of patient's ability to gain care.
   (A. Naidu; Factors affecting patient satisfaction and healthcare quality).

Other than those personal determinants of satisfaction, instruments to measure satisfaction in healthcare were created:

1. Hulka el al. (1970): he began the initial step to measure satisfaction, "Satisfaction with physician and Primary Care Scale".
2. Ware and Snyder (1975): created the "Patient Satisfaction questionnaire".
3. Larsen et al. (1979): developed the "Client Satisfaction questionnaire".
   Those measurements vary as to what satisfaction means (Gilbert et al., 2004) (L. Gill, L. White; A Critical Review of Patient Satisfaction).

Expectations and satisfaction with specific aspects of care play independent roles in predicting patient satisfaction, not only the patient holding of different expectations for different aspects of care (Abramowitz et al.; 1987).

Nursing care

Nursing care is liberating patient's resources by promoting health, helping, supporting, educating and developing patients. When patients are allowed to take an active part in decision-making regarding their care, they can expect and demand satisfaction from nursing care.

Different levels of satisfaction may indicate different perspectives on nursing care quality rather than different levels of satisfaction with the same experience (bond and Thomas; 1992 cited by J. Sitzia and N. Wood; Patient Satisfaction: A Review of Issues and Concepts). Nurses are the most motivated to take part in the process of patient satisfaction, and their importance for patient satisfaction is indisputable. But no matter what, their ability to improve nursing care remains the most important. They are interested in providing patient outcomes and are key factors in quality of care. Thus, the importance of the nursing staff is illustrated by the high correlation between job satisfaction and quality of care. Thus, it is important to high light on the concept of satisfied nurses, satisfactory work environments and adequate resources as essential factors for job satisfaction levels. Also, the well-being of staff must be supported since it improve patients' perceptions of staffing levels. To increase patient confidence in the adequacy of a unit's staffing level, hospitals must ensure the presence of skilled staff and increase the job satisfaction of nursing staff, thus adopting continuing professional development (T. Kvist, A. Voutilanien, R. Montynen, K. Vehvilainen-Julkenen; The relationship Between Patients' Perceptions of Care Quality and 3 Factors: Nursing Staff Job Satisfaction, Organizational Characteristics and Patient Age).

Satisfaction with doctors (physicians)

According to Mechanic (1968), the more a doctor's performance meets a patient's expectations, the more satisfied the patient will be with the physician's services (J. Sitzia and N. Wood; Patient Satisfaction: A Review of Issues and Concepts). What patients are waiting from doctors are certain attractive characteristics that

ensure good treatment as well as follow up from the physician's staff. The strong desire for participation in decision making and grabbing of information from patients make them strive for choosing doctors who are highly professional and show expertise. Although uniqueness and individuality of patient's preferences of physician's attributes was clear, most of patients preferred effectively trained doctors who listen to the patient's narrative, be able to time manage and adopt patient centered approach, and be willing to recognize the patient's perspective. Providing human personal care is another concern where you find patients searching for humaneness, attentiveness, patience, and sensitiveness to various aspects of patients' autonomy and rights. Failure of physicians to be patient oriented (apply the patient-centered approach) may seriously undermine patient's expectations and satisfaction. (A. Schattner, D. Rudin, N. Jellin; Good Physicians from the perspective of their patients). Patients' expectations can be altered or influenced directly by actual occurrences (physician's explanation or doctor patient negotiation). (R. L. Kravitz; Patients expectation for medical care: An Expanded Formulation based on review of the literature).

In general, patients seems to have two opinions about doctors and may prefer one of the 2 kinds:

1. Authoritarian: the physician is an expert. He is the primary decision maker in which patients have great faith. They will be sure of his decisions and his ability to provide clear-cut treatments.
2. Egalitarian: recommendations from the physician is expected, and the patient seeks to participate and discuss his health decisions.
   (Ditto et al., 1995 cited by A. Naidu; Factors Affecting Patient Satisfaction and Healthcare Quality).

On the contrary, and although more communication, empathy, and caring were recommended from doctors for patients to be willing to recommend the physician to others, patients want and demand access to beneficial technologies and subspecialty expertise, and they have become increasingly sophisticated. Thus, new incentives were created to withhold needed care, new restraints on physician practices, altered referral patterns, and disrupted established physician-patient relationship were established (R. Kravitz; Patients' Expectations for Medical Care: An Expanded Formulation Based on Review of the Literature).

Therefore, patients' perception of healthcare service quality may be evaluated by cooperative interdisciplinary study and knowledge sharing that may offer an excellent vehicle to drive as a standardized and definitive tool for this evaluation (L. Gill, L. White; A Critical Review of Patient Satisfaction).

Taking patients' views into account and safeguarding their rights, in addition to the increasing practice of applying a consumer policy viewpoint to health care, made patient satisfaction an important issue. Therefore, healthcare centers and hospitals must ensure that patient satisfaction, the individual's positive evaluation of distinct dimensions of healthcare (Linder-Pelz, 1982) and the key to understanding the reasons for expressed dissatisfaction (Williams), are satisfying all its determinants. Trusting the provider of care along with patients' opinions influence clinical outcomes independently of treatment (Coulehan, 1985; Kalauokalani et al., 2001; Sharma et al., 2003; cited by B. Wilde-Larsson, G. Larsson; Patients' views on quality of care and attitudes towards re-visiting providers).They must take into account all the occurrences -the individual perceptions that are taking place-, the values – the evaluation of good or bad of all the attributes or aspects of health care encounters-, interpersonal comparisons –individual ratings of health care encounter by comparing it with all such encounters known to or experienced by the patient-, and entitlements –the individual belief that he/she has proper accepted grounds for seeking or claiming a particular outcome- (J. Sitzia, N. Wood; Patient Satisfaction: A Review of issues and Concepts). Never the less, hospitals must work on and improve all categories of service that could lead to greater satisfaction of patients such as facilities, information efficiency, support service and relationships between staff and patients. For example, physicians and nurses are trained in different academic and professional educational centers. Their way of communication and different used terminologies may lead to conflicts, distrust, misunderstanding and friction between them (Arford, 2005; Shannon and Myers, 2012; cited by M. Zineldein; Determinants of Patient Safety, Satisfaction and Trust). Overcoming such problems by trusting themselves and others and their abilities to deliver information and care in all ways without sticking to certain standards or schools is very important to strengthen image of trust in front of patients. Since sometimes, information about the surrounding environment itself can be given from the hesitated patients to come back to their doctors of the hospital in general (B.

Wilde-Larsson, G. Larsson; Patients' views on quality of care and attitudes towards re-visiting providers). Atmosphere, employees practices and performance within the hospital affects heavily patient Satisfaction (Wolosin 2008; cited in M. Zeineldein, Determinants of Patient Safety, Satisfaction and Trust). Satisfied patients exhibit favorable behavioral intentions that are beneficial to the healthcare provider's long-term success. Thus patient satisfaction increases service use and market share by enhancing hospital image (Andaleeb, 1988) cited by (A. Naidu; Factors affecting patient satisfaction and healthcare quality). Because of this a properly managed hospital that seeks patient care and satisfaction must work on handling the bulk of behind the scenes details, thus increasing the perceived value for patients by providing clear and appropriate patient information and care (Pitta and Laric, 2004 cited by A. Naidu; Factors affecting patient satisfaction and healthcare quality). Hospitals can also provide good work environment as well as lifelong learning and training for its staff that enhance positive relationships between all its members, in a way to increase patient trust and satisfaction (Aiken et al., 2012; Zeineldein, 2006; Zeineldein, 2011; cited by M. Zeineldein; Determinants of Patient Safety, Satisfaction and Trust).

Therefore, 2 Dimensions of patient centered care quality improvement professionals should pay particular attention to:

1. Respect for patients' values, preferences, and expressed needs.
2. Emotional support: relieving fear and anxiety.
   Greatest increases in patient satisfaction will be associated with the improvement performed in these areas. (S. Gesell, PHD; R. Wolosin, PHD; Inpatients' Ratings of Care in 5 Common Clinical Conditions).

Other than the theories mentioned at the beginning, I'll mention other theories that talked about satisfaction and see what does satisfaction means from the perception:

1. Discrepancy theory: satisfaction is the difference between what is desired or needed and what is perceived to occur, adjusted for what is desired or needed.

2. Fulfillment theory: satisfaction is the simple difference between desires or needs and occurrences.
3. Equity theory: when the patient is satisfied, he/she perceives their share of resources to be fair in relation to what others receive, adjusted according to agreed-on rules or norms.
   (R. Kravitz; Patients' Expectations for Medical Care: An Expanded Formulation Based on Review of the literature).

Nursing staff evaluation of their workload and general job satisfaction reported by nursing staff were respectively positively related to patients' perceptions of the adequacy of resources and overall quality of care. Thus, patients' perceptions of quality of care and job satisfaction of nursing staff appear to be related. In addition, increased quality of care and patient satisfaction were also positively related to good working environments and low patient-to-nurse ratios (Aiken et al.) (T. Kvist, A. Voutilanien, R. Montynen, K. Vehvilainen-Julkenen; The relationship Between Patients' Perceptions of Care Quality and 3 Factors: Nursing Staff Job Satisfaction, Organizational Characteristics and Patient Age).

In conclusion, Lower propensity to sue for malpractice (Hickson, Clayton, and Entman 1994), less doctor shopping (Ware and Davis 1983), and greater adherence to therapy (Sherbourne et al. 1992; O'Brien, Petrie, and Raeburn 1992) were all results of meeting patients' expectations that produced greater satisfaction with care (R. Kravitz; Patients' Expectations for Medical Care: An Expanded Formulation Based on Review of the literature). Better outcomes can be promoted when patients' expectations are elicited, what creates opportunities for clinical negotiation (Lazare, Eisenthal, and Wasserman 1975) and enhances the patients' active role in the medical relationship (Green-field, Kaplan, and Ware 1985) (cited by R. Kravitz; Patients' Expectations for Medical Care: An Expanded Formulation Based on Review of the literature). That's why for example, in order to improve the hospital environment, patient amenities and facilities in a consumerist sense, but necessarily to improve care, assessing patient satisfaction has been mandatory for French hospitals since 1998 (L. Gill, L. White; A Critical Review of Patient Satisfaction).

What remains unclear and causes lots of problems in the healthcare sector is the inability to differentiate and standardize definitions and constructs for

satisfaction and perceived health service quality, what causes kind of bias in their way of adoption in all future health services research. The inter-changeability of terminologies and their misuse inhibits the possibility of finding much needed answers as how best to measure and conceive health service quality from the patient's perspective as well as compromising the worth of research (L. Gill, L. White; A Critical Review of Patient Satisfaction).

Leadership and Patient Satisfaction

Leadership is the process through which an individual attempts to intentionally influence another individual or a group to accomplish a certain target. And since our target here is to sustain better healthcare quality that ensures more patient satisfaction, it is important to measure the level of participatory leadership in hospitals. It is measuring how much administrators and executives are motivated to set strategic quality goals and improve the overall well-being of patients and employees, as well as directing employees in all improvement initiatives. And this particularly needs a leader and not only a manager who will be able not only to develop flexible planning processes, champion patient and stakeholder satisfaction, and encourage good decision making among all management levels, but also understand how organizational units relate to each other and facilitate the transfer of learning across units and practices (Committee on Quality of Health care in America, 2001).

Thus, leadership was determined to play an important role in developing and affecting systems that influence the delivery of both kinds of quality, technical and process. Never the less, clinical quality seems to be less affected by hospital management than process quality.

Management has control and influence over the actions and roles that doctors who are administering care play, and that could be through care teams or compliance with standard care patterns, or possibly due to management priorities and resource allocation. Thus, a slight significant relationship can be identified between clinical quality and management. On the contrary, a strong and effective relationship seems to exist between management as leading and process quality

that is illustrated mainly by nursing care that is greatly able to directly increase patient satisfaction.

Effective leadership influences nursing care and mainly the nurse performance in a positive and efficient way, what results in satisfied patient outcomes (Anderson et al., 2003). This positive relationship leads to reducing patient adverse events and complications, as well as decreasing patient falls and medication errors (Houser, 2003). This will be satisfied by the leadership's ability to support experienced staff and increase its expertise, what increases in this staff's stability and decreases in patient's morality rates (Tourangeau et al.). In addition, effective nursing leadership is important for preventing unnecessary deaths by creating practice environments that supports nurses.

Changes that can be implemented in nursing work environments, new organizational models, and restructuring systems of care organizations can all lead to improvement of patient outcomes and thus more patient satisfaction. This transformational nursing leadership is an important organizational strategy to improve patient outcomes. Therefore, leaders who play a key role in managing the context (Patrick and White, 2005), reveal that positive leadership behaviors was significantly associated with the increase in patient satisfaction, and provoke the actual association between nursing leadership and patient outcomes.

Accreditation

Accreditation is a process whereby an organization is assessed on a set of pre-determined standards (F. El Jardali, D. Jamal, H. Dimassi, W. Ammar, V. Tchaghchaghian; The impact of hospital accreditation on quality of care: perception of Lebanese nurses p. 363). Whereas in terms of the National Agency for Healthcare Accreditation and Evaluation (ANAES), accreditation is an evaluation process carried by independent professionals external to the healthcare organization and its governing bodies that focuses on its functioning and practices as a whole (M. Pomey, A.Contandriopoulos, P. Francois, and D. Bertrand; Accreditation: a tool for organizational change in hospitals? P.113). Through diverse approaches, it intends to promote quality improvement which will be either mandated by the government or initiated by independent agencies.

In addition, it ensures that healthcare organizations are taking into account safety, quality of care and treatment of patients.

Depending on the Code of Public Health (1996) and Bertrand (2001) cited by (M. Pomey, A.Contandriopoulos, P. Francois, and D. Bertrand; Accreditation: a tool for organizational change in hospitals? P.113), accreditation has a number of interesting characteristics:

1. It is mandatory every five years for all healthcare and medico-social organizations.

2. It is performed by an independent government agency funded by public medicate and healthcare organizations.

3. During visits, the surveyors have the duty of reporting to the head of the ANAES all instances of non-compliance with safety standards.

4. The survey report is a public document which is sent to the regional administrative authorities, and a summary of the report is made available to the public at the ANAES website (National Agency for Healthcare and Evaluation, 2003).

5. Regional Administrative authorities can use the information contained in the report to modify hospital budgets and plan activities.

The accreditation process evolves a self-assessment, a field survey and a report (Hayes and Shaw, 1995 cited in (M. Pomey, A.Contandriopoulos, P. Francois, and D. Bertrand; Accreditation: a tool for organizational change in hospitals? P.113). Through self-assessment, accreditation aims to provide an opportunity for people to supervise themselves and to understand the importance of gaining a better understanding of the hospital's activities in order to continue to progress. It is along with the tabling of the accreditation report, one of the two moat propitious moments for implementing change (Duckett, 1983; Shaw 2003 cited in M. Pomey, A.Contandriopoulos, P. Francois, and D. Bertrand; Accreditation: a tool for organizational change in hospitals? P.113).

What really self-assessments do is defining hospital's activities and fields of change rather than contributing to help hospitals. Furthermore, they provide

people with less prestigious structures or lower down the hierarchy the opportunity to be heard within the hospital, what ensures that all voices will be heard over time through fostering communication and forgoing of new ties, thus creating a social capital.

To know the impact of accreditation of Lebanese hospitals, the Ministry of Public Health implemented accreditation through two national surveys allover 128 hospitals defined by the Lebanese Ministry of Health. Those hospitals with similar service and care characteristics varies between small (<100 beds), medium (101-200 beds), and large sized hospitals (> 200 beds).

Results showed that small sized hospitals have homogenous cultures, its staff share the same values, and certain standards restricted their service delivering process for a long time. Thus, the concept of accreditation and improvement was new, what makes the new improvements arriving to those hospitals more significant than when it reach large hospitals that registered small differential improvement in quality.

Ministry of health was unwilling to sign a contract with any hospital that fails the accreditation. And although losing a contract might be a serious threat on hospitals, the thing that should motivate and enforce hospitals to effectively implement accreditation, the Lebanese Ministry of Health cannot afford not contracting with large hospitals because of some political issues in addition to patient's preference.

During the study, accreditation evaluation depended on dependent variables (quality results) and independent variables. As for the independent ones, leadership, commitment and support were significantly associated with quality results. Continuous and direct line of communication between all hierarchal positions facilitate organizational change, especially that willingness of lower line employees to improve quality is highly significant and related to degree of team work and support as well as staff involvement that reduces resistance to change. As the lower level line is motivated, collaborative relationships were not established because of the lack of trust that reigned among the various parties, although recognizing the influence of staff involvement and satisfaction on the long term benefits of the accreditation process ensures achieving ultimate organizational goals. In addition, physicians were found to be as operational

leaders, and they were involved in varying levels in the process of accreditation. As for the administrative departments, and although they claim the legitimacy to conduct accreditation, they are less inclined to conduct their own assessments, and only participate in the process of cross sectional self-assessment performed by the ANAES manual.

Regarding Data, the variable part of data showed significant relationship with quality improvement in accredited hospitals, since the use of data helps in tracking and improving activities and performance, as well as providing evidence for compliance to accreditation process.

As any study, many limitations were recognized.

1. Results are based on the perception of nurses.
2. The differential response rate across hospitals of different sizes.
3. Selection was of hospitals that only passed the accreditation process

Chapter Three

Summary of Literature Review

Introduction

I have introduced my study with the concept of the importance of protecting our health, a concept that has a special meaning for me because of my very personal and painful experience, when my mom was not able to protect her health because of a major failure of the healthcare institution that gave her a mistaken diagnosis.

In developing my topic, I have discussed the necessity for healthcare professionals to focus on patient satisfaction, to understand what is valued by patients, and how the quality of care, both process and clinical, are perceived by patients.

Summary

Patients' satisfaction is based on their evaluation of the value of what they receive as services. I have referred to different theories regarding patient satisfaction in healthcare:

1. Discrepancy and Transgression theories of Fox and Storms (1981): the patient is satisfied when the patient's healthcare orientations and provider conditions of care, are congruent; otherwise, the patient is dissatisfied.
2. Expectancy-Value theory of Linder-Pelz (1982): satisfaction is mediated by prior expectations about care as well as personal beliefs and values about care. According to their operational definition, the positive evaluations of the distinct dimensions of healthcare are known as satisfaction.
3. Determinants and Components theory of Ware et al. (1983): personal preferences and expectations mediate patients' subjective responses to experienced care and this is how satisfaction is created.

4. Multiple Model theory of Fitzpatrick and Hopkins (1983): expectations, that reflect the health goals of the patient and the extent to which the illness and healthcare violated the patient's personal sense of self, are socially mediated.
5. Health quality theory of Donabedian 1980 (as cited by (L. Gill, L. White; 2009): the patient's judgment on the quality of care in all its aspects, and particularly in relation to the interpersonal component of care is the expression of satisfaction or dissatisfaction. Thus, satisfaction is the outcome of the interpersonal process of care.

Patient satisfaction, the positive evaluation of distinct dimensions of healthcare, is the key for understanding the reasons behind any gap between patients' expectations or perceptions and the quality of care perceived by patients and provided or delivered through the services or settings.

Patient expectations are an entitlement, anticipation, justification and a likelihood that emerges repeatedly as having a fundamental role in expressions of satisfaction. It is a heterogeneous lot that focuses on structure, process, and outcomes of care. Patients' encounters with an existing care structure and their norms, patients' expectations and experiences constitute the patients' perceptions of their service quality. Such aspirations are the values or services patients perceive to receive with good clinical or process qualities.

This quality, an abstract defining the margin between desirability and reality, is the key to examine patient satisfaction levels. It is patients' expectations versus actual experiences that must be measured and evaluated. Donabedian defined three main categories for measuring quality:

1. Structure: the medical delivery system fixed characteristics such as staff number, types, qualifications and facilities. It is the conditions under which care is provided.

2. Process: what is done to and for the patient such as treatment. Van Maanen, 1984 as well as Redfern and Norman, 1990 added that process is the professional activities associated with providing care.

3. Outcomes: changes in the patients' current and future health attributed to antecedent medical care. R. Kravitz 1996 adds that outcome is the most important aspect that finds that the measures of health, wellbeing, or any other states are not the only result of the whole quality improvement process. They are the physical, psychological, and financial results as well.

As mentioned before, this quality can be seen as clinical or process.
Clinical quality is the technical quality received from the service provider. It is determined by what is delivered from care, and must be improved to ensure patient satisfaction.
Process quality is the patients' perceptions of how the process is created and delivered. It is a nontechnical delivery process that should satisfy patients' perceptions as being accurate and efficient.

Nurses and doctors, the main providers of the services, must apply a patient centered quality system to ensure both clinical and process qualities and to safeguard patients' rights.
Nurses, who liberate patients' resources by promoting health, helping, supporting, educating and developing patients, affect satisfaction levels. They are key factors in quality of care and aim to provide better patient outcomes.
Nevertheless, doctors' performances too affect satisfaction of patients when they meet patients' expectations, should express human personal touch by being attentive, patient sensitive, and aware of all patients' rights.

Patient centered quality that aims to ensure that patient's values guide all clinical decisions, and provide respectful and responsive care to individual patients according to their preferences and needs include six dimensions of care that should be monitored:
1. Respect for patients' values, preferences, and expressed needs.
2. Coordination and integration of care.
3. Information to, communication with, and education of patients.
4. Physical comfort of patients.
5. Emotional support to patients- relieving fear and anxiety.
6. Involvement of family and friends.

(S. Gesell, R. Wolosin; 2004).

We as patients will be concerned about how are we going to be treated, communicated with, given freedom and time to participate in the process of care, as well as kept informed through understandable terms and social interactions. Thus, we will be evaluating according to two main variables set by Tucker and Adams (2001):

1. Provider Performance: it is associated with interpersonal relations and patient-caregiver interactions. It is found to be the most significant in patient evaluations.
2. Access: all the variables and their impediments that are related to the process of patient's ability to gain care.

Thus, to increase the perceived value of patients, care providers must provide clear and appropriate patient information and care, in addition to good relationships between staff and patients.

We should also mention that management has control and influence over the actions and roles that doctors and nurses who are administering care play, and that could be through care teams or through compliance with standard care patterns, or possibly through management priorities and resource allocation strategies. Therefore, effective leadership styles can influence nursing and physicians care resulting in satisfied patient outcomes and less complications. Thus, adopting new organizational models and restructuring of care allows transformational leadership to improve patient outcomes and increase patient satisfaction through such positive leadership behaviors in managing the context. Therefore, managers too increase patient satisfaction by being aware and taking advantage of the ability of patients to evaluate process care and clinical care qualities. That is why hospitals must work on and improve all categories of service that could lead to greater satisfaction of patients such as facilities, information efficiency, and support services.

Satisfied patients exhibit favorable behavioral intentions that are beneficial to the healthcare providers' long-term success. They increase service use and market share by enhancing hospital image.

Lower propensity to sue for malpractice, less doctor shopping and greater adherence to therapy are all results of meeting patients' expectations that produce greater satisfaction with care.

Because our sample of patients is going to be collected from accredited as well as non-accredited hospitals, the concept of accreditation has been discussed as an important context set by effective leadership to improve and maintain better healthcare outcomes.

Chapter Four

Research Frame and Methodology

Research questions:

The research questions that this study will address are the following:

1. What factors have impact on patient satisfaction in a sample of patients from Lebanese hospitals.
2. Is there a difference in patients' satisfaction according to the accreditation status of the hospital.
3. Is there a difference in patients' satisfaction according to socio demographic characteristics of the patient, i.e.; age, education level, marital status, socio economic status.

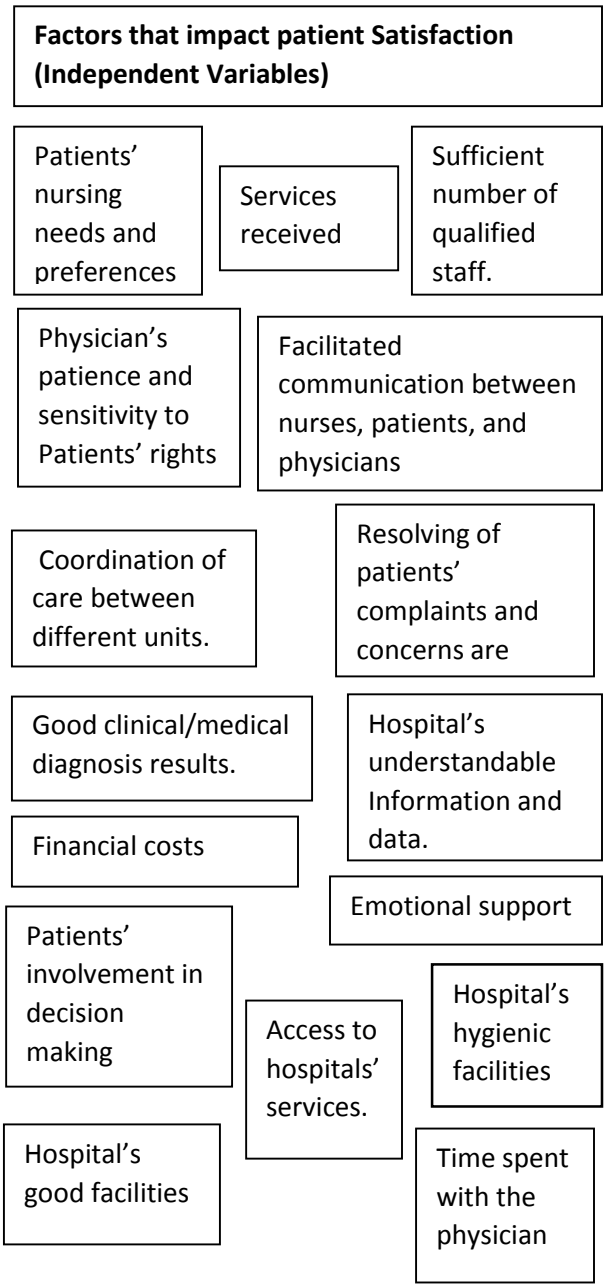
Independent Variables: Factors that affect Patient Satisfaction

1. Services received.
2. Patients' nursing needs and preferences.
3. Physician's patience and sensitivity to patients' rights.
4. Facilitated communication between nurses, physicians, and patients.
5. Coordination of care between different units
6. Sufficient number of qualified staff.
7. Hospital's good Facilities.
8. Hospital's hygienic facilities.
9. Clinical/medical diagnosis results.
10. Emotional support
11. Financial costs
12. Resolving of patients' concerns and complaints.
13. Hospital's understandable Information and data.
14. Patients' involvement in decision making.

15. Time spent with physician.
16. Access to hospital's services.

The Dependent Variables

1. Patient satisfaction with hospital.
2. Patient's adherence to therapy.
3. Patient willingness to return to the same hospital.
4. Patient willingness to recommend the hospital to friends.
5. Patient satisfaction with the physician.



Patient Satisfaction Expressions (Dependent Variables)

- Patient satisfaction with the hospital.
- Patient's adherence to therapy.
- Patient's willingness to return to the same hospital.
- Patient's willingness to recommend the hospital to friends.
- Patient satisfaction with the physician.

Hypotheses

The hypotheses that reflect the questions addressed above are the following:

1. The factors selected as independent variables positively correlate with satisfaction.
2. Patients from accredited hospitals are more satisfied than patients from non-accredited hospitals.
3. There is a difference in the level of satisfaction between patients with different socio demographic characteristics.

Methodology

Instrument

The survey questionnaire, attached as an appendix, was used as the main data-collection instrument for gathering the data used in the statistical analyses. The questionnaire is composed of 26 statements, which aim to explore the effect of different factors on patient satisfaction regarding the quality of care offered by Lebanese hospitals, in addition to the effect of accreditation on their satisfaction, taking into consideration the socio demographic characteristics that might affect their responses.

Based on literature review, the formation of the questionnaire was based on three sections: the independent factors that correlate with satisfaction, the accreditation status of hospitals and its effect on satisfaction, and the socio demographic characteristics and their impact on patients' satisfaction. The three sections were integrated into one questionnaire.

The questionnaire was structured using a Likert scale where respondents were asked to indicate their level of agreement on the mentioned factors according to the following five-point scale: Strongly disagree-Disagree-Neutral-Agree-Strongly Agree.

In order to test the clarity of the questions used in this research study, a face-to-face pilot study was conducted with 7 patients who provided their feedback about the formulation of questions, their wording, and on the length of the questionnaire. Taking into consideration their comments and recommendations, the questionnaire was revised and finalized in the most appropriate way.

The questionnaire statements with their demographic part were listed as follows:

1. The services you received were up to what you expected.
2. Nurses responded to your needs and preferences.
3. The physician listened to your needs.
4. The physician was patient.
5. The physician was sensitive to your rights.
6. The administrative staff facilitated communication between nurses, physicians, and patients.
7. The administrative staff created good coordination of care between different units.
8. The hospital had sufficient qualified staff.
9. The hospital had good Facilities.
10. The hospital had hygienic facilities.
11. The clinical/medical results were correctly diagnosed.
12. In the hospital, your fear and anxiety were relieved and you felt at peace.
13. The financial costs of your healthcare were appropriate.
14. The concerns and complaints were heard.
15. The concerns and complaints were resolved.
16. You felt comforted and emotionally supported by staff.
17. Information and data provided to you were easy to understand.
18. Your family and you were included in the decisions about your treatment.
19. The amount of time you spent with the physician was satisfactory.
20. Nurses helped you to be part of the decision-making regarding your care.
21. It was easy to access the hospital's services.
22. You were satisfied with the healthcare at the hospital.

23. You are willing to return to the hospital when you will need treatment.
24. You will adhere to the therapy provided to you by the hospital.
25. You will recommend this hospital to your friends.
26. You were satisfied with the hospital physician.

- Have you ever visited a hospital for treatment: Yes No

- When was your last visit to the hospital?
  Less than 1 year More than one year

- What was the name of the hospital? ……..

- What was the length of your stay?

  1 day 2-5 days more than 5 days

- Your Gender:
  Male female

- Your family Status:
  Have children Don't have children

- Your Educational level: Didn't finish school BAC II
  Undergraduate Degree Graduate Degree

- Age: Below 30 30-50 50-70 above 70

- My monthly income range is: Below 1000$ 1000-3000$
  3000-5000$ above 5000$

Sample size

Since multiple regression analysis was used for testing the hypothesis that factors selected as independent variables correlate with satisfaction of patients, the number of observations to each independent variable should not fall below five to avoid the risk of fitting, i.e. making the results specific to the sample,thus lacking generalizability (Bartlett,Kotrlik, and Higgins,2001).

Moreover, since factor analysis was to be used to detect the structure of variables, a researcher cannot factor analyze a sample of fewer than 50 observations and preferably the sample size should be 100 or larger to provide an adequate basis for the calculation of the correlations among variables. As Hair,Black,Babin,Anderson and Tatham (2006) recommend, we should have at least five times as many observations as the number of independent variables.

225 respondents were taken into account for the statistical analysis, which makes the corresponding number of observations on the basis of 8:1ratio.

Sample selection

The sample was chosen from different Lebanese patients who mostly visited the hospital less than 1 year. The range of patients varied between educated and non-educated, young and old, married and not, in addition to different economic status. A survey monkey was conducted to collect responses from all over Lebanon; however, questionnaires were also distributed by hand to people who are not educated and are not able to read or do not understand English. Thus, a convenient sample was used for the sample selection.

Survey Participants

The questionnaire was addressed to Lebanese patients, since we were testing the impact of certain health factors on the Lebanese patients' satisfaction.

Survey Administration

The survey administration period was 10 days during which the questionnaires were sent through emails and Facebook messages in the form of survey monkey link and at the same time a number of questionnaires were distributed to patients.

Ethical Considerations

During the administrations of the survey, certain ethical issues were taken into consideration. Among these were the respondents' right to anonymity and the right to confidentiality of shared information. As addressed in the face sheet of the survey questionnaire, the respondent was not required to disclose any personal information as identifying themselves. Moreover, the data collected from the survey was promised to remain strictly confidential and to be reported in the thesis anonymously.

Chapter Five

Statistical Analysis

Descriptive Statistics:

To facilitate the display and interpretation of data, descriptive statistics were computed from the responses obtained.

Descriptive Statistics

	N	Mean	Std. Deviation
The physician listened to your needs.	220	3.90	.881
The clinical/medical results were correctly diag2sed.	221	3.84	1.039
The physician was patient.	220	3.84	.961
The hospital had good facilities.	220	3.80	.943
The hospital had hygienic facilities.	221	3.79	.975
Information and data provided to you were easy to understand.	221	3.75	.868
The physician was sensitive to your rights.	220	3.73	.992
Nurses responded to your needs and preferences.	219	3.70	.967
Your family and you were included in the decisions about your treatment.	220	3.66	.964
The hospital had sufficient qualified staff.	219	3.66	1.017
You felt comforted and emotionally supported by staff.	221	3.57	1.000
The services you received were up to what you expected.	221	3.51	1.060
In the hospital, your fear and anxiety were relieved and you felt at peace.	221	3.50	1.114
The amount of time you spend with your physician were satisfactory.	220	3.46	1.008

Descriptive Statistics

	N	Mean	Std. Deviation
It was easy to 1ess the hospital's services.	220	3.44	1.029
The administrative staff facilitated communication between nurses, physicians, and patients.	218	3.40	.966
The administrative staff created good coordination of care between different units.	220	3.39	.966
The concerns and complaints were resolved.	221	3.29	.972
Nurses helped you to be part of the decision making regarding your care.	220	3.29	1.019
The concerns and complaints were heard.	220	3.21	1.003
The financial costs of your healthcare were appropriate.	221	3.09	1.071
Valid N (listwise)	211		

Among the independent variables, (the physician listened to your needs) has the highest score 3.90 with the lowest standard deviation 0.881. (The financial costs of your healthcare were appropriate) has the lowest score 3.09.

Reliability Tests:

Cronbach's alpha or coefficient of reliability is used to estimate the internal consistency of the scale. It is most commonly used when we have multiple Likert questions in a questionnaire that form a scale and we wish to determine if the scale is reliable. It measures the extent to which a set of items are related to each other, and increases as the inter-correlations among items increase.

The lower limit for Cronbach's alpha is 0.70, and it can be computed using SPSS.

The reliability of all independent variables of this study was tested. The case processing summary and the reliability of all the 21 independent variables are shown respectively in the tables below:

Case Processing Summary

		N	%
Cases	Valid	211	95.5
	Excluded[a]	10	4.5
	Total	221	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.959	.960	21

The cronbach's alpha is 0.959 > 0.70. That indicates a high level of internal consistency for our scale.

Item Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The services you received were up to what you expected.	.787	.956
Nurses responded to your needs and preferences.	.742	.957
The physician listened to your needs.	.710	.957
The physician was patient.	.673	.958
The physician was sensitive to your rights.	.733	.957
The administrative staff facilitated communication between nurses, physicians and patients.	.783	.957
The administrative staff created good communication of care between different units.	.784	.957
The hospital had sufficient qualified staff.	.754	.957
The hospital had good facilities.	.730	.957
The hospital had hygienic facilities.	.739	.957
The clinical/medical results were correctly diagnosed.	.686	.958
In the hospital, your fear and anxiety were	.791	.956

relieved and you felt at peace.		
The financial costs of your healthcare were appropriate.	.485	.960
The concerns and complaints were heard.	.645	.958
The concerns and complaints were resolved.	.750	.957
You felt comforted and emotionally supported by staff.	.797	.956
Information and data provided to you were easy to understand.	.681	.958
Your family and you were included in decisions about your treatment.	.601	.959
The amount of time you spend with the physician was satisfactory.	.681	.958
Nurses helped you to be part of the decision making regarding your care.	.720	.957
It was easy to access the hospital's services.	.718	.957

The "Corrected Item-Total Correlation" displays the correlation between a given variable and the sum score of the other items assessing how well one variable's score is internally consistent with composite scores from all other variables.

Any item-total correlation less than .30 is weak for variable analysis purposes and the variable should be removed from the study.

The “Cronbach’s Alpha if item deleted” displays Cronbach’s alpha that would result if a given item is added. It determines which item from among a set of items contribute to the total alpha.

As long as the value for the “Cronbach’s Alpha item it Deleted” is lower than Cronbach’s Alpha, there is no tendency to remove the item.

From the table of “Item-Total Statistics”, since all the corrected item-total correlations are above 0.30, and since the removal of any item results in a lower cronbach’s alpha, none of the variables should be removed from the study.

Cronbach’s alpha was also conducted on each set of variables that represent the categories of health quality set by Donabedian: Structure, Process, and Outcome.

Variables of Structure Category:

Case Processing Summary

		N	%
Cases	Valid	218	98.6
	Excluded[a]	3	1.4
	Total	221	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.809	4

The cronbach's alpha of the 4 independent variables related to structure category is 0.809> 0.70. That indicates a high level of internal consistency for our scale.

Variables of Outcome Category:

Case Processing Summary

		N	%
Cases	Valid	220	99.5
	Excluded[a]	1	.5
	Total	221	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.907	.907	6

The cronbach's alpha of the 6 independent variables related to the outcome category is 0.907> 0.70. That indicates a high level of internal consistency for our scale.

Variables of Process Category:

Case Processing Summary

		N	%
Cases	Valid	213	96.4
	Excluded[a]	8	3.6
	Total	221	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.924	11

The cronbach's alpha of the 11 independent variables related to process category is 0.924 > 0.70. That indicates a high level of internal consistency for our scale.

Factor Analysis

It is a tool to define the underlying structure among the variables in the analysis.

Factor analysis is used to analyze the structure of the interrelationships (correlations) among a large number of variables by defining sets of variables that are highly correlated, known as factors.

Exploratory factor analysis is used to measure the extent to which a measure or set of measures correctly represent the concept of the study.

The appropriateness of factor analysis can be determined by examining the Bartlett Test of Sphericity and Kaiser-Myer-Olkin Measure of sampling adequacy (KMO MSA).

The Bartlett Test of Sphericity tests the overall significance of all correlations within a correlation matrix. It examines the hypothesis that the variables are uncorrelated in the population. It is an identity matrix, each variable correlates perfectly with itself (r=1) but has no correlation with the other variables (r=0).

Whenever alpha<0.05, Bartlett Test of Sphericity is significant, and the null hypothesis (the correlation matrix is an identity matrix) is rejected. Thus, factor analysis can be conducted on the study.

Kaiser-Myer-Olkin Measure of Sampling Adequacy (KMO MSA) is used to quantify the degree if inter-correlations among the variables. It ranges from 0 to 1. Whenever 1 is reached, that means that each variable is perfectly predicted without error by the other variable. Above 0.50 is the adequacy level so that the researcher can proceed with factor analysis.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.945
Bartlett's Test of Sphericity	Approx. Chi-Square	3440.878
	df	210
	Sig.	.000

As KMO and Bartlett's Test table shows, the KMO measure of sampling adequacy is 0.945 which is greater than 0.5, and Bartlett's Test of Sphericity is 0.000 which is less than 0.05. Thus, it is satisfactory to proceed with the factor analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.727	55.841	55.841	11.727	55.841	55.841
2	1.252	5.962	61.803	1.252	5.962	61.803
3	1.053	5.016	66.819	1.053	5.016	66.819
4	.897	4.271	71.090			
5	.785	3.739	74.829			
6	.647	3.083	77.912			
7	.556	2.650	80.562			
8	.493	2.350	82.911			
9	.461	2.194	85.105			
10	.428	2.038	87.143			
11	.375	1.785	88.928			
12	.357	1.698	90.626			
13	.310	1.477	92.104			
14	.292	1.389	93.493			
15	.265	1.262	94.755			
16	.243	1.156	95.911			
17	.211	1.005	96.915			
18	.196	.932	97.847			
19	.182	.868	98.715			
20	.142	.676	99.391			
21	.128	.609	100.000			

All 21 varibles was gathered into 3 main factors.

	Component Matrix	Component		
		1	2	3
1	The services you received were up to what you expected.	0.815	-0.087	-0.134
2	Nurses responded to your needs and preferences.	0.775	-0.144	-0.026
3	The physician listened to your needs.	0.739	0.522	0.036
4	The physician was patient.	0.706	0.561	0.136
5	The physician was sensitive to your rights.	0.76	0.46	0.126
6	The administrative staff facilitated communication between nurses, physicians, and patients.	0.81	-0.171	-0.043
7	The administrative staff created good coordination of care between different units.	0.809	-0.229	-0.023

8	The hospital had sufficient qualified staff.	0.786	-0.049	-0.305
9	The hospital had good facilities.	0.763	0.03	-0.396
10	The hospital had hygienic facilities.	0.773	0.13	-0.42
11	The clinical/medical results were correctly diag2sed.	0.721	0.238	-0.306
12	In the hospital, your fear and anxiety were relieved and you felt at peace.	0.816	-0.091	-0.011
13	The financial costs of your healthcare were appropriate.	0.517	0.089	0.54
14	The concerns and complaints were heard.	0.679	-0.211	0.09
15	The concerns and complaints were resolved.	0.774	-0.165	0.103
16	You felt comforted and emotionally supported by staff.	0.824	-0.176	0.019
17	Information and data provided to you were easy to understand.	0.712	-0.079	0.024
18	Your family and you were included in the decisions about your treatment.	0.637	-0.149	0.103
19	The amount of time you spend with your physician were satisfactory.	0.71	0.094	0.351
20	Nurses helped you to be part of the decision making regarding your care.	0.751	-0.224	0.147
21	It was easy to 1ess the hospital's services.	0.749	-0.246	0.099

Extraction Method: Principal Component Analysis.

a 3 components extracted.

As the component matrix table shows, all variables greater than 0.5 are in factor one. 1 factor dominated all variables.

Factor analysis that was conducted for similar purposes as cronbach's alpha, and to identify if new structures exist, showed that data is very well related.

Factor analysis was conducted again on each set of variables that represent the 3 categories set by Donabedian: Structure, Process, and Outcome.

Structure Category:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.899
Bartlett's Test of Sphericity	Approx. Chi-Square	1293.839
	df	36
	Sig.	.000

As KMO and Bartlett's Test table shows, the KMO measure of sampling adequacy is 0.899 which is greater than 0.5, and Bartlett's Test of Sphericity is 0.000 which is less than 0.05. Thus, it is satisfactory to proceed with the factor analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	5.412	60.132	60.132	5.412	60.132
2	1.137	12.638	72.770	1.137	12.638
3	.582	6.463	79.233		
4	.526	5.849	85.083		
5	.393	4.366	89.449		
6	.310	3.442	92.891		
7	.238	2.642	95.533		
8	.221	2.456	97.989		
9	.181	2.011	100.000		

Total Variance Explained

Component	Extraction ...	Rotation Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	60.132	3.782	42.024	42.024
2	72.770	2.767	30.747	72.770
3				
4				
5				
6				
7				
8				
9				

Extraction Method: Principal Component Analysis.

The independent variables related to the structure category were gathered in 2 factors and explained 72% of the total variance.

Process Category:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.902
Bartlett's Test of Sphericity	Approx. Chi-Square	1580.182
	df	55
	Sig.	.000

As KMO and Bartlett's Test table shows, the KMO measure of sampling adequacy is 0.902 which is greater than 0.5, and Bartlett's Test of Sphericity is 0.000 which is less than 0.05. Thus, it is satisfactory to proceed with the factor analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	6.369	57.903	57.903	6.369	57.903
2	1.128	10.252	68.154	1.128	10.252
3	.807	7.335	75.489		
4	.558	5.076	80.565		
5	.493	4.477	85.042		
6	.374	3.397	88.439		
7	.350	3.186	91.625		
8	.331	3.007	94.633		
9	.227	2.064	96.697		
10	.202	1.832	98.529		
11	.162	1.471	100.000		

Total Variance Explained

Component	Extraction ...	Rotation Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	57.903	4.349	39.537	39.537
2	68.154	3.148	28.617	68.154
3				
4				
5				
6				
7				
8				
9				
10				
11				

Extraction Method: Principal Component Analysis.

The independent variables related to the process category were gathered in 2 factors and explained 68.154% of the total variance.

Outcome Category:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	410.058
	df	6
	Sig.	.000

As KMO and Bartlett's Test table shows, the KMO measure of sampling adequacy is 0.763 which is greater than 0.5, and Bartlett's Test of Sphericity is 0.000 which is less than 0.05. Thus, it is satisfactory to proceed with the factor analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	2.645	66.137	66.137	2.645	66.137
2	.813	20.315	86.452		
3	.338	8.441	94.893		
4	.204	5.107	100.000		

Total Variance Explained

Component	Extraction ...
	Cumulative %
1	66.137
2	
3	
4	

Extraction Method: Principal Component Analysis.

The independent variables related to the outcome category were gathered in 1 factor that explained 66.137% of the total variance.

Multiple Regression analysis:

Multiple regression with Stepwise Method is used to determine a subset of regressor independent variables that are parsimonious; few but needed regressors.

The aim is to include as few possible variables because each irrelevant regressor decreases the precision of the estimated coefficients and predicted values. In addition, the presence of extra variables increases the complexity of data collection and model maintenance.

Stepwise Method works on selecting the most effective variables in predicting the dependent variables; it starts by selecting the best predictor of the dependent variable, to include it in the regression model.

Thus, the independent variable with the greatest contribution to the regression model is added first. Additional independent variables are selected in terms of the incremental exploratory power they can add to the regression model. Independent variables are added as long as their partial correlation coefficients are statistically significant.

Variables are added to the regression equation one at a time, using the statistical criterion of maximizing the R square of the included variables. When none of the possible addition can make a statistically significant improvement in R square, the analysis stops.

In Stepwise Multiple Regression, the independent variables are entered according to their statistical contribution in explaining the variance in the dependent variable; thus, all the independent variables selected for inclusion will have a statistically significant relationship with the dependent variable.

It is important to highlight on the concept of multicollinearity that exists when two or more of the predictors in a regression model are moderately or highly correlated. The research conclusions can be limited whenever multicollinearity exists. Therefore, if a variable is included in the Stepwise analysis, it is highly recommended that it be intercorelated with other independent variables included.

Multiple Regression with Stepwise method with all 21 independent variables was performed on each of the 5 dependent variables.

The 21 independent Variables regressed against how much the patient is satisfied with the healthcare at the hospital.

Variables Entered/Removed

Model	Variables entered	Variables removed
1	The services you received were up to what you expected.	
2	The amount of time you spent with your physician was satisfactory.	
3	In the hospital, your fear and anxiety were relieved and you felt at peace.	
4	The hospital had hygienic facilities.	
5	It was easy to access the hospital's services.	
6	The administrative staff facilitated communication between nurses, physicians and patients.	

Dependent Variable: You were satisfied with the healthcare at the hospital.

Method: Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

Model Summary[g]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773[a]	.597	.595	.612
2	.833[b]	.694	.691	.535
3	.852[c]	.726	.722	.507
4	.860[d]	.739	.734	.496
5	.866[e]	.750	.744	.487
6	.870[f]	.757	.750	.481

a. Predictors: (Constant), The services you received were up to what you expected.

b. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory.

c. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace.

d. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities.

e. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., It was easy to 1ess the hospital's services.

f. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., It was easy to 1ess the hospital's services., The administrative staff facilitated communication between nurses, physicians, and patients.

g. Dependent Variable: You were satisfied with the healthcare at the hospital.

In regression model 1, 59.7% of the total variance in the patients' satisfaction with the healthcare at the hospital is explained from the services the patient received were up to what he/she expected.

The amount of time you spend with your physician were satisfactory was added in the second regression model, explaining 69.4% of the total variance in the patients' satisfaction with the health care at the hospital.

As other predictors are added, 72.6%, 73.9%, and 75% were explained in the total variance regarding patient satisfaction with the health care at the hospital, until regression model is reached, including the best subset with 75.7% in explaining the total variance when 6 predictors were added.

The Anova table shows the goodness of fit of the model, that is, how significantly the regression model predicts the outcomes variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	115.454	1	115.454	308.564	.000[b]
	Residual	77.827	208	.374		
	Total	193.281	209			
2	Regression	134.107	2	67.053	234.562	.000[c]
	Residual	59.174	207	.286		
	Total	193.281	209			
3	Regression	140.253	3	46.751	181.614	.000[d]
	Residual	53.028	206	.257		
	Total	193.281	209			
4	Regression	142.905	4	35.726	145.386	.000[e]
	Residual	50.375	205	.246		
	Total	193.281	209			
5	Regression	144.921	5	28.984	122.266	.000[f]
	Residual	48.360	204	.237		
	Total	193.281	209			
6	Regression	146.358	6	24.393	105.531	.000[g]
	Residual	46.923	203	.231		
	Total	193.281	209			

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. Predictors: (Constant), The services you received were up to what you expected.

c. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory.

d. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace.

e. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities.

f. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., It was easy to 1ess the hospital's services.

g. Predictors: (Constant), The services you received were up to what you expected., The amount of time you spend with your physician were satisfactory., In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., It was easy to 1ess the hospital's services., The administrative staff facilitated communication between nurses, physicians, and patients.

The probability of F statistics (105.531) for the regression analysis Model 6 is 0.00 which is less than 0.05, hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable (You are satisfied with the healthcare at the

hospital). Thus, the regression model (Model 6) is statistically significant in predicting the dependent variable.

The coefficients for the independent variable show how much the dependent variable changes when the independent variable changes by one unit.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	The hospital had hygienic facilities.	.147	.049	.145	2.998	.003
	It was easy to 1ess the hospital's services.	.138	.047	.145	2.916	.004
6	(Constant)	.057	.155		.371	.711
	The services you received were up to what you expected.	.298	.051	.324	5.841	.000
	The amount of time you spend with your physician were satisfactory.	.197	.042	.208	4.677	.000
	In the hospital, your fear and anxiety were relieved and you felt at peace.	.136	.045	.156	3.006	.003
	The hospital had hygienic facilities.	.133	.049	.132	2.727	.007
	It was easy to 1ess the hospital's services.	.121	.047	.127	2.549	.012
	The administrative staff facilitated communication between nurses, physicians, and patients.	.128	.051	.128	2.494	.013

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

We can represent the regression equation as:

X= 0.057 + 0.298(a) + 0.197(b) + 0.136(c) + 0.133(d) + 0.121(e) + 0.128(f)

Where X= you were satisfied with the healthcare at the hospital,

a= the services you received were up to what you expected.

b= the amount of time spend with the physician were satisfactory,

c= in the hospital, your fear and anxiety were relieved and you felt at peace,

d= the hospital had hygienic facilities,

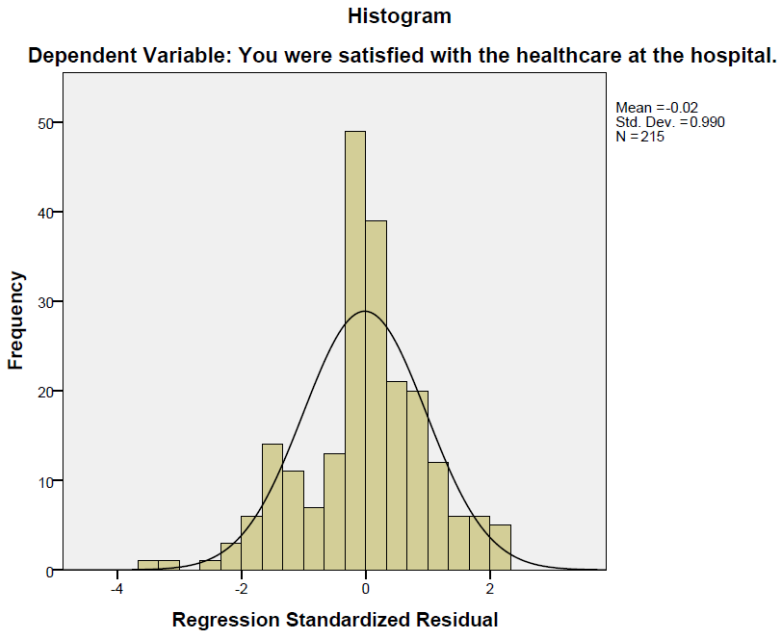
e= it was easy to access the hospital's services,

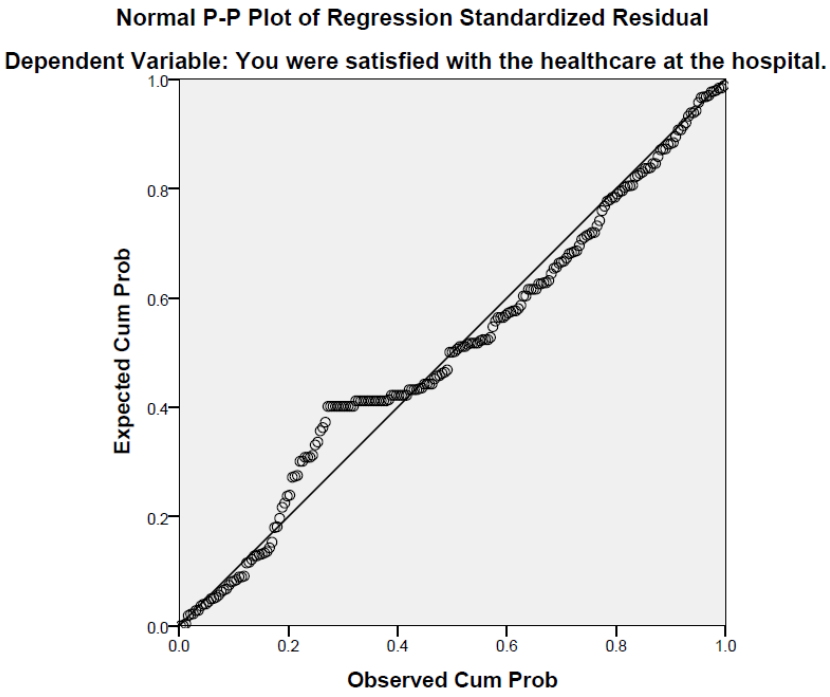
f= the administrative staff facilitated communication between nurses, physicians and patients.

Since the significance of the t-values for all the variables are less than 0.05, and since all the coefficients have a positive value, we conclude that there is a statistically significant positive linear relationship between the 6 predictors and the dependent variable.

To test the assumption of Normality of the Error Term Distribution, a Histogram and Normal P-P Plot of Regression Standardized Residual were performed.

The Histogram of standardized residuals allows visual check for a distribution approximating normal distribution, and the P-P plot of Regression Standardized Residual compares the observed standardized residuals against expected standardized residuals from a normal distribution. For a normal distribution, the residual line closely follows the straight diagonal line of the normal distribution.





The histogram shows a bell shaped curve and the normal plot of the residuals shows the points close to the diagonal line.

The 21 dependent variables regressed against how much the patient is willing to return to the hospital.

Variables Entered/Removed

Model	Variables entered	Variables removed
1	In the hospital, your fear and anxiety were relieved and you felt at peace.	
2	Nurses responded to your needs and preferences.	
3	The physician was sensitive to your rights.	
4	The hospital had sufficient qualified staff.	
5	It was easy to access the hospital's services.	
6	The clinical/medical results were correctly	

	diagnosed.	

Dependent variable: You are willing to return to the hospital when you will need treatment.

Method: Stepwise (criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100)

Model Summary[g]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.739[a]	.546	.544	.774
2	.789[b]	.623	.620	.707
3	.811[c]	.658	.653	.675
4	.825[d]	.681	.675	.653
5	.831[e]	.691	.683	.645
6	.835[f]	.698	.689	.639

a. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace.

b. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences.

c. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights.

d. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights., The hospital had sufficient qualified staff.

e. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights., The hospital had sufficient qualified staff., It was easy to 1ess the hospital's services.

f. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights., The hospital had sufficient qualified staff., It was easy to 1ess the hospital's services., The clinical/medical results were correctly diag2sed.

g. Dependent Variable: You are willing to return to the hospital when you will need treatment.

As the model summary shows, all regression models have a value of R square between 0 and 1, showing 54.6%, 62.3%, 65.8%, 68.1%, 69.1%, and 69.8% of the total variance in how much the patient is willing to return to the hospital when

he/she needs treatment is explained by (In the hospital, your fear and anxiety were relieved and you felt at peace), (Nurses responded to your needs and preferences), (The physician was sensitive to your rights), (The hospital had sufficient qualified staff), (It was easy to access the hospital's services), and (The clinical results were correctly diagnosed) respectively.

Regression model 6 includes the best subset of independent variables explaining 69.8% of the total variance in how much the patient is willing to return to the hospital when he/she needs treatment.

Anova

6	Regression	192.310	6	32.052	78.492	.000[g]
	Residual	83.302	204	.408		
	Total	275.611	210			

a. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace.

b. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences.

c. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights.

d. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights., The hospital had sufficient qualified staff.

e. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights., The hospital had sufficient qualified staff., It was easy to 1ess the hospital's services.

f. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., Nurses responded to your needs and preferences., The physician was sensitive to your rights., The hospital had sufficient qualified staff., It was easy to 1ess the hospital's services., The clinical/medical results were correctly diag2sed.

g. Dependent Variable: You are willing to return to the hospital when you will need treatment.

The probability of the F statistic (78.492) for the regression model 6 is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is s statistically significant relationship between the subset of independent variables and the dependent variable.

Coefficients

6	(Constant)	-.670	.214		-3.137	.002
	In the hospital, your fear and anxiety were relieved and you felt at peace.	.292	.062	.282	4.709	.000
	Nurses responded to your needs and preferences.	.206	.066	.172	3.097	.002
	The physician was sensitive to your rights.	.201	.061	.174	3.285	.001
	The hospital had sufficient qualified staff.	.168	.066	.145	2.556	.011
	It was easy to 1ess the hospital's services.	.164	.061	.145	2.694	.008
	The clinical/medical results were correctly diag2sed.	.135	.062	.121	2.179	.031

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

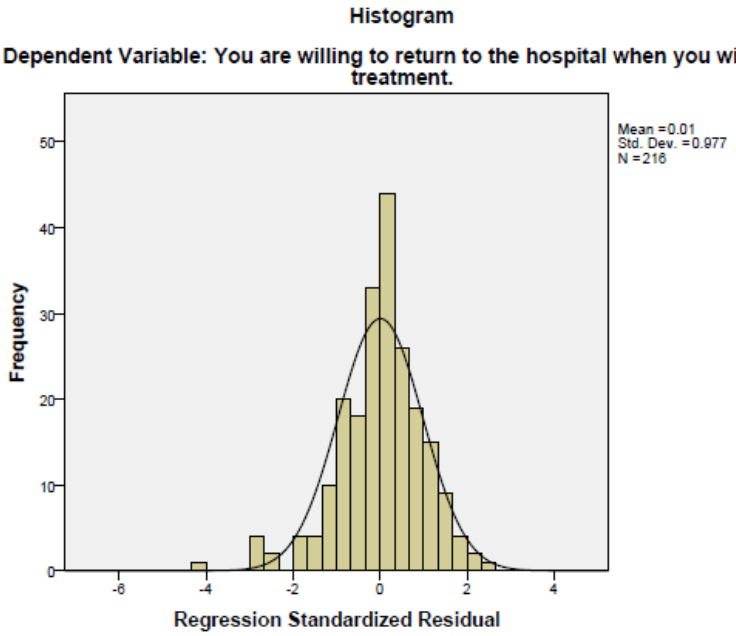
We can represent the regression equation as:

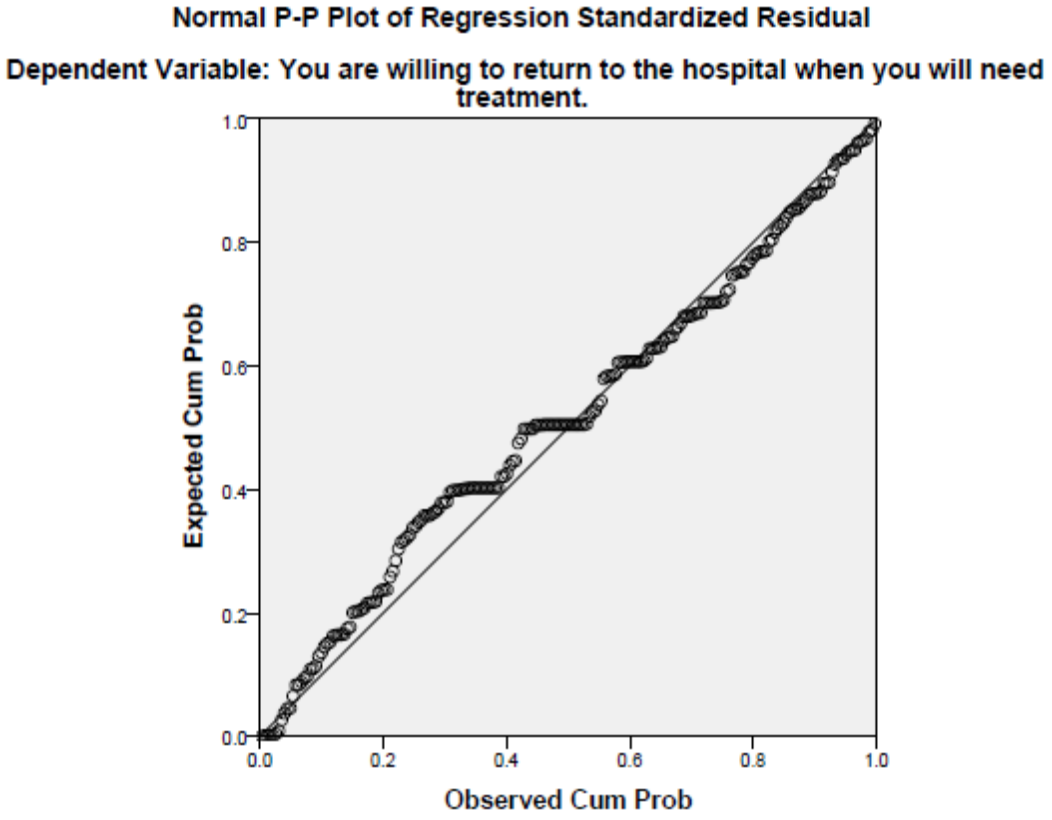
X= -0.670 + 0.292(a) + 0.206(b) + 0.201(c) + 0.168(d) + 0.164(e) + 0.135(f)

Where X represents how much you are willing to return to the hospital when you need treatment.

(a) Represents In the hospital, your fear and anxiety were relieved and you felt at peace.
(b) Represents Nurses responded to your needs and responses.
(c) The physician was sensitive to your rights.
(d) The hospital had sufficient qualified staff.
(e) It was easy to access the hospital's services.
(f) The clinical/medical results were correctly diagnosed.

Since the coefficients are positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant positive relationship between the selected independent variables and the dependent variable.





The histogram shows a bell-shaped curve and the normal P-P plot of the residuals shows the points close to the diagonal line.

The 21 independent variables regressed against how much you will adhere to the therapy provided to you by the hospital.

Variables Entered/Removed

Model	Variables Entered	Variables Removed
1	In the hospital your fear and anxiety were relieved and you felt at peace.	
2	The hospital had hygienic facilities.	
3	Nurses responded to your needs and preferences.	
4	It was easy to access the hospital's services.	
5	Information and data provided to you were easy to understand.	

Dependent variable: You will adhere to the therapy provided to you by the hospital.

The table above shows that 5 independent variables are statistically significant in explaining the variance in (You will adhere to the therapy provided to you by the hospital).

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.682[a]	.465	.463	.728
2	.742[b]	.551	.546	.669
3	.771[c]	.594	.588	.637
4	.783[d]	.613	.605	.624
5	.790[e]	.624	.615	.617

a. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace.

b. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities.

c. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences.

d. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., It was easy to 1ess the hospital's services.

e. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., It was easy to 1ess the hospital's services., Information and data provided to you were easy to understand.

f. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

The R square obtained in the Model summary shows 46.5% of the total variance of the dependent variable in regression model 1, 55.1% in regression model 2, 59.4% in regression model 3, 61.3% in regression model 4, and 62.4% in regression model 5.

Thus, regression model 5 includes the best subset of independent variables (In the hospital your fear and anxiety were relieved and you felt at peace, The hospital had hygienic facilities, Nurses responded to your needs and preferences, It was easy to access the hospital's services, and Information and data provided to you were easy to understand) explaining 62.4% of the total variance in the dependent variable (You will adhere to the therapy provided to you by the hospital).

Anova

5	Regression	129.250	5	25.850	68.013	.000[f]
	Residual	77.916	205	.380		
	Total	207.166	210			

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace.

c. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities.

d. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences.

e. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., It was easy to 1ess the hospital's services.

f. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., It was easy to 1ess the hospital's services., Information and data provided to you were easy to understand.

The probability of the F statistic (68.013) for the regression model 5 is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
5	(Constant)	.031	.219		.144	.886
	In the hospital, your fear and anxiety were relieved and you felt at peace.	.247	.055	.274	4.474	.000

The hospital had hygienic facilities.	.237	.060	.227	3.934	.000
Nurses responded to your needs and preferences.	.180	.063	.174	2.870	.005
It was easy to 1ess the hospital's services.	.165	.059	.167	2.768	.006
Information and data provided to you were easy to understand.	.158	.064	.134	2.456	.015

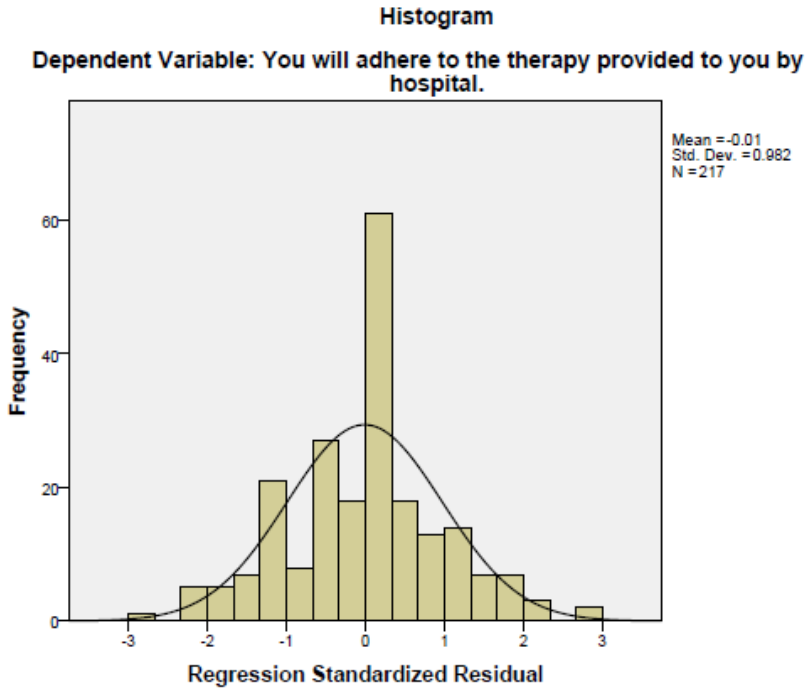
We can represent the regression equation as:

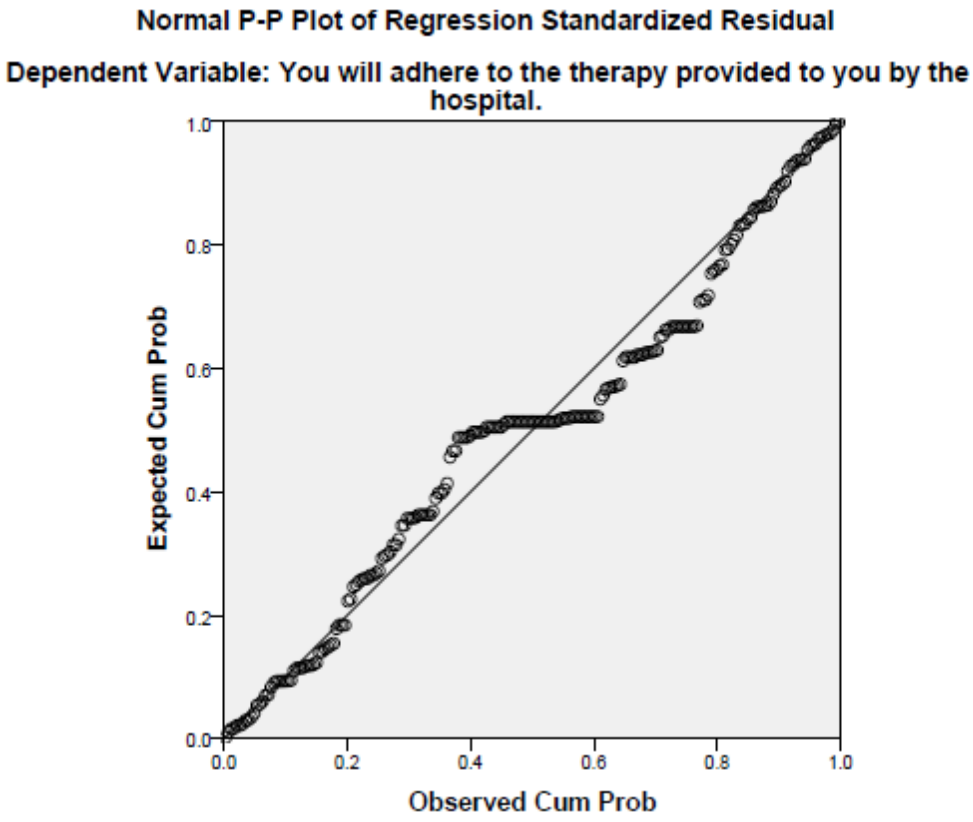
X= 0.031 + 0.247(a) + 0.237(b) + 0.180(c) + 0.165(d) + 0.158(e)

Where X represents the dependent variable (You will adhere to the therapy provided to you by the hospital).

(a) Represents (In the hospital your fear and anxiety were relieved and you felt at peace).
(b) Represents (The hospital had hygienic facilities).
(c) Represents (Nurses responded to your needs and preferences).
(d) Represents (It was easy to access to the hospital's services).
(e) Information and data provided to you were easy to understand.

Since the coefficients are positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant positive relationship between the selected independent variables and the dependent variable.


Histogram
Dependent Variable: You will adhere to the therapy provided to you by the hospital.
Mean = -0.01
Std. Dev. = 0.982
N = 217
Frequency
60
40
20
0
-3
-2
-1
0
1
2
3
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: You will adhere to the therapy provided to you by the hospital.
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob

The histogram shows a bell-shaped curve and the normal P-P plot of the residuals shows the points close to the diagonal line.

The 21 independent variables are regressed against your ability to recommend the hospital to your friends.

Variables Entered/Removed

Model	Variables Entered	Variables Removed
1	In the hospital, your fear and anxiety were relieved and you felt at peace.	
2	The hospital had hygienic facilities.	
3	Nurses responded to your needs and preferences.	
4	The amount of time you spend with your physician were satisfactory.	
5	The administrative staff facilitated good communication between nurses, physicians and patients.	

Dependent variable: You will recommend the hospital to your friends.

Method: Stepwise (criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

The table above shows that 5 independent variables are statistically significant in explaining the variance in (You will recommend the hospital to your friends).

Model Summary[f]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.711[a]	.505	.503	.805
2	.782[b]	.611	.607	.716
3	.814[c]	.663	.658	.668
4	.830[d]	.689	.683	.643
5	.836[e]	.698	.691	.635

a. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace.

b. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities.

c. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences.

d. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., The amount of time you spend with your physician were satisfactory.

e. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., The amount of time you spend with your physician were satisfactory., The administrative staff facilitated communication between nurses, physicians, and patients.

f. Dependent Variable: You will recommend the hospital to your friends.

The R square obtained in the Model summary shows 50.5% of the total variance of the dependent variable in regression model 1, 61.1% in regression model 2, 66.3% in regression model 3, 68.9%in regression model 4, and 69.8% in regression model 5.

Thus, regression model 5 includes the best subset of independent variables (In the hospital your fear and anxiety were relieved and you felt at peace, The hospital had hygienic facilities, Nurses responded to your needs and preferences, The amount of time you spend with the physician were satisfactory, The administrative staff facilitated good communication between nurses, physicians, and patients) explaining 69.8% of the total variance in the dependent variable (You will recommend the hospital to your friends).

Anova

5	Regression	190.206	5	38.041	94.388	.000[f]
	Residual	82.218	204	.403		
	Total	272.424	209			

a. Dependent Variable: You will recommend the hospital to your friends.

b. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace.

c. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities.

d. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences.

e. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., The amount of time you spend with your physician were satisfactory.

f. Predictors: (Constant), In the hospital, your fear and anxiety were relieved and you felt at peace., The hospital had hygienic facilities., Nurses responded to your needs and preferences., The amount of time you spend with your physician were satisfactory., The administrative staff facilitated communication between nurses, physicians, and patients.

The probability of the F statistic (94.388) for the regression model 5 is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
5	(Constant)	-.831	.211		-3.946	.000
	In the hospital, your fear and anxiety were relieved and you felt at peace.	.258	.058	.249	4.451	.000

The hospital had hygienic facilities.	.316	.062	.263	5.085	.000
Nurses responded to your needs and preferences.	.253	.064	.211	3.927	.000
The amount of time you spend with your physician were satisfactory.	.204	.054	.180	3.757	.000
The administrative staff facilitated communication between nurses, physicians, and patients.	.163	.066	.136	2.458	.015

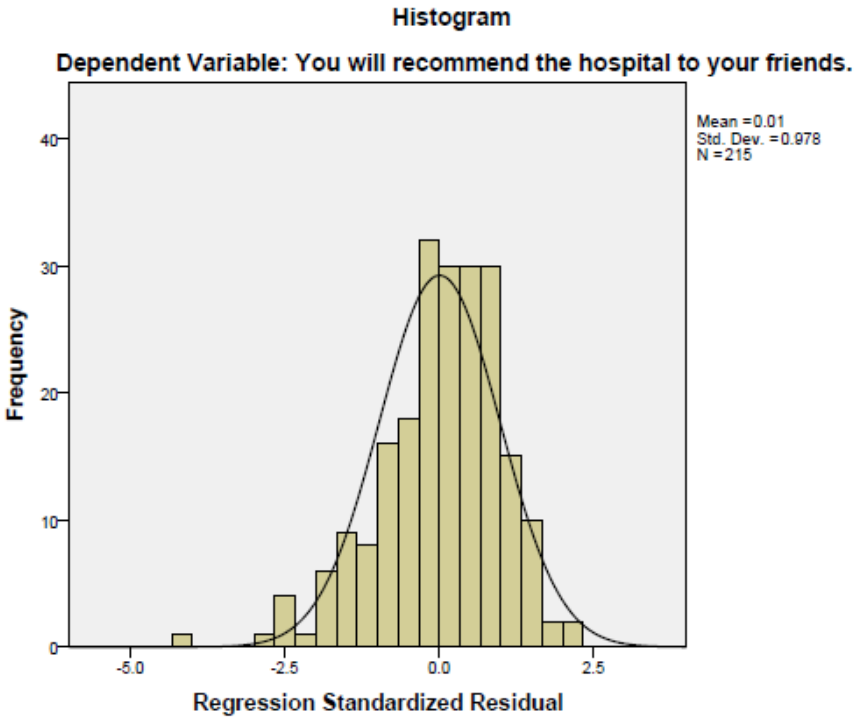
We can represent the regression equation as:

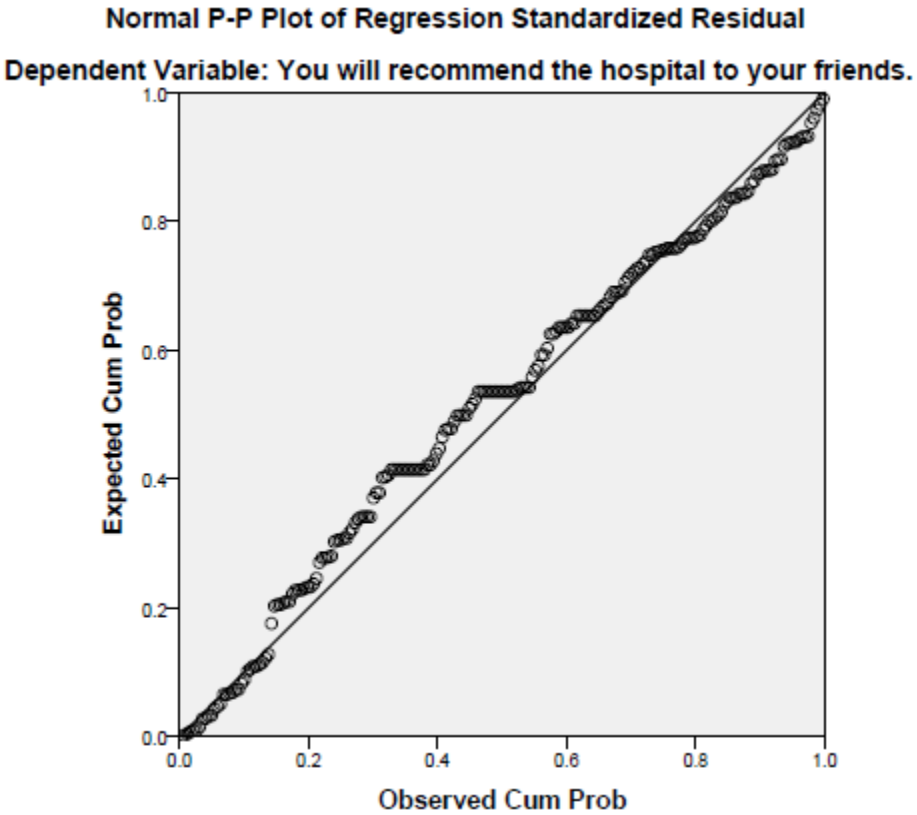
X= -0.831 + 0.258(a) + 0.316(b) + 0.253(c) + 0.204(d) + 0.163(e)

Where X represents the dependent variable (You will recommend the hospital to your friends.).

(a) Represents (In the hospital your fear and anxiety were relieved and you felt at peace).
(b) Represents (The hospital had hygienic facilities).
(c) Represents (Nurses responded to your needs and preferences).
(d) Represents (The amount of time you spend with the physician were satisfactory).
(e) Represents (The administrative staff facilitated communication between nurses, physicians, and patients).

Since the coefficients are positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant positive relationship between the selected independent variables and the dependent variable.


Histogram
Dependent Variable: You will recommend the hospital to your friends.
Mean =0.01
Std. Dev. =0.978
N =215
Frequency
40
30
20
10
0
-5.0
-2.5
0.0
2.5
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: You will recommend the hospital to your friends.
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob

The histogram shows a bell-shaped curve and the normal P-P plot of the residuals shows the points close to the diagonal line.

The 21 independent variables regressed against how much you are satisfied with the hospital's physician.

Variables entered/ removed

Model	Variables Entered	Variables Removed
1	The physician listened to your needs.	
2	The clinical/medical results were correctly diagnosed.	
3	The amount of time you spend with the physician were satisfactory.	
4	The physician was sensitive to your rights.	
5	In the hospital, your fear and anxiety were relieved and you felt at peace.	

Dependent variable: You were satisfied with the hospital's physician.

Method: Stepwise (criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

The table above shows that 5 independent variables are statistically significant in explaining the variance in (You were satisfied with the hospital's physician).

Model Summary[f]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713[a]	.508	.506	.687
2	.773[b]	.598	.594	.623
3	.796[c]	.633	.628	.596
4	.804[d]	.646	.640	.587
5	.808[e]	.653	.645	.583

a. Predictors: (Constant), The physician listened to your needs.

b. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed.

c. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed., The amount of time you spend with your physician were satisfactory.

d. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed., The amount of time you spend with your physician were satisfactory., The physician was sensitive to your rights.

e. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed., The amount of time you spend with your physician were satisfactory., The physician was sensitive to your rights., In the hospital, your fear and anxiety were relieved and you felt at peace.

f. Dependent Variable: You were satisfied with the hospital's physician.

The R square obtained in the Model summary shows 50.8% of the total variance of the dependent variable in regression model 1, 59.8% in regression model 2, 63.3% in regression model 3, 64.6% in regression model 4, and 65.3% in regression model 5.

Thus, regression model 5 includes the best subset of independent variables (The physician listened to your needs, The clinical/medical results were correctly diagnosed, The amount of time spend with your physician were satisfactory, The physician was sensitive to your rights, In the hospital your fear and anxiety were relieved and you felt at peace) explaining 65.3% of the total variance in the dependent variable (You were satisfied with the hospital's physician).

Anova

5	Regression	131.036	5	26.207	77.160	.000[f]
	Residual	69.628	205	.340		
	Total	200.664	210			

a. Dependent Variable: You were satisfied with the hospital's physician.

b. Predictors: (Constant), The physician listened to your needs.

c. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed.

d. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed., The amount of time you spend with your physician were satisfactory.

e. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed., The amount of time you spend with your physician were satisfactory., The physician was sensitive to your rights.

f. Predictors: (Constant), The physician listened to your needs., The clinical/medical results were correctly diag2sed., The amount of time you spend with your physician were satisfactory., The physician was sensitive to your rights., In the hospital, your fear and anxiety were relieved and you felt at peace.

The probability of the F statistic (77.160) for the regression model 5 is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
5	(Constant)	-.006	.199		-.033	.974
	The physician listened to your needs.	.353	.073	.311	4.812	.000
	The clinical/medical results were correctly diag2sed.	.230	.054	.241	4.259	.000
	The amount of time you spend with your physician were satisfactory.	.159	.052	.164	3.043	.003
	The physician was sensitive to your rights.	.153	.068	.155	2.243	.026
	In the hospital, your fear and anxiety were relieved and you felt at peace.	.102	.052	.115	1.978	.049

We can represent the regression equation as:

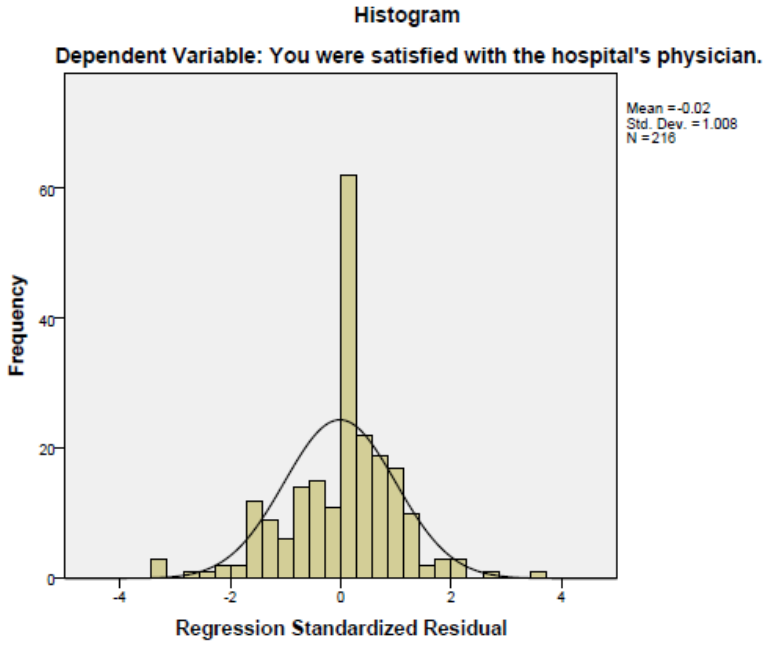
X= -0.006 + 0.353(a) + 0.230(b) + 0.159(c) + 0.153(d) + 0.102(e)

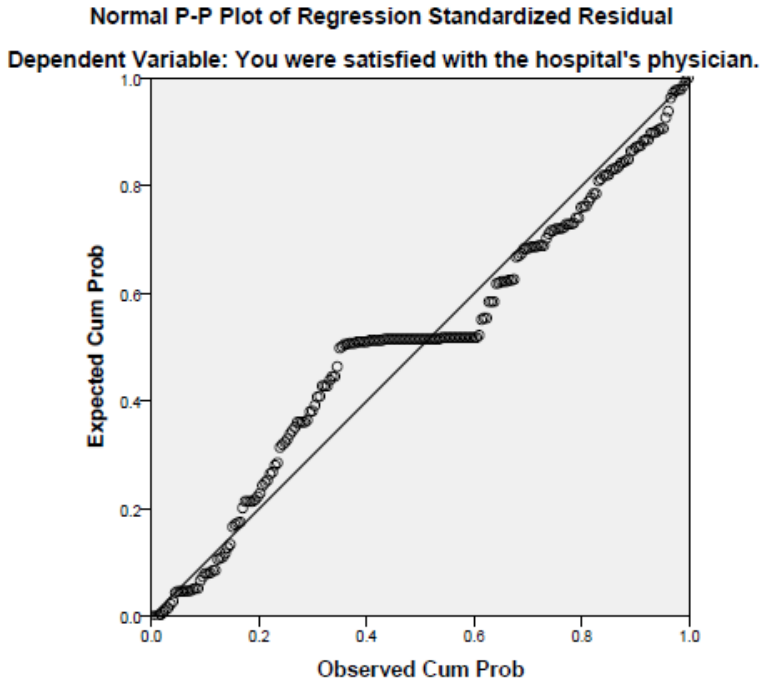
Where X represents the dependent variable (You were satisfied with the hospital's physician).

(a) Represents (The physician listened to your needs).
(b) Represents (The clinical/medical results were correctly diagnosed).
(c) Represents (The amount of time you spend with the physician were satisfactory).
(d) Represents (The physician was sensitive to your rights).
(e) Represents (In the hospital your fear and anxiety were relieved and you felt at peace).

Since the coefficients are positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant positive

relationship between the selected independent variables and the dependent variable.





The histogram shows a bell-shaped curve and the normal P-P plot of the residuals shows the points close to the diagonal line.

Regression of each of the dependent variables with the each main factor obtained from factor analysis shows the following results:

Factor 1 of first category is regressed against the first dependent Variable (You are satisfied with the healthcare in the hospital).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 1[b]	.	Enter

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687[a]	.472	.469	.697

a. Predictors: (Constant), REGR factor score 1 for analysis 1

The R square obtained in the Model summary shows 47.2% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	91.462	1	91.462	188.293	.000[b]
	Residual	102.491	211	.486		
	Total	193.953	212			

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. Predictors: (Constant), REGR factor score 1 for analysis 1

The probability of the F statistic (188.293) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.625	.048		75.913
	REGR factor score 1 for analysis 1	.655	.048	.687	13.722

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 1	.000

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

We can represent the regression equation as:

Y= 3.625 + 0.655(a)

Where Y represents the dependent variable (You were satisfied with the healthcare at the hospital).

(a) Represents the regressed factor 1 of the first category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Factor 1 of second category is regressed against the first dependent Variable (You are satisfied with the healthcare in the hospital).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 2[b]	.	Enter

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756[a]	.572	.570	.647

a. Predictors: (Constant), REGR factor score 1 for analysis 2

The R square obtained in the Model summary shows 57.2% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119.989	1	119.989	286.870	.000[b]
	Residual	89.928	215	.418		
	Total	209.917	216			

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. Predictors: (Constant), REGR factor score 1 for analysis 2

The probability of the F statistic (286.870) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.603	.044		82.074
	REGR factor score 1 for analysis 2	.744	.044	.756	16.937

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 2	.000

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

We can represent the regression equation as:

Y= 3.603 + 0.744(a)

Where Y represents the dependent variable (You were satisfied with the healthcare at the hospital).

(b) Represents the regressed factor 1 of the second category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Factor 2 of third category is regressed against the first dependent Variable (You are satisfied with the healthcare in the hospital).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 2 for analysis 3[b]	.	Enter

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.396[a]	.157	.153	.892

a. Predictors: (Constant), REGR factor score 2 for analysis 3

The R square obtained in the Model summary shows 15.7% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.483	1	31.483	39.569	.000[b]
	Residual	169.475	213	.796		
	Total	200.958	214			

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

b. Predictors: (Constant), REGR factor score 2 for analysis 3

The probability of the F statistic (39.569) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.614	.061		59.414
	REGR factor score 2 for analysis 3	.383	.061	.396	6.290

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 2 for analysis 3	.000

a. Dependent Variable: You were satisfied with the healthcare at the hospital.

We can represent the regression equation as:

Y= 3.614 + 0.383(a)

Where Y represents the dependent variable (You were satisfied with the healthcare at the hospital).

(c) Represents the regressed factor 2 of the third category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Factor 1 of First category is regressed against the second dependent Variable (You are willing to return to the hospital when you will need treatment).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 1[b]	.	Enter

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.603[a]	.364	.361	.910

a. Predictors: (Constant), REGR factor score 1 for analysis 1

The R square obtained in the Model summary shows 36.4% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	100.493	1	100.493	121.286	.000[b]
	Residual	175.656	212	.829		
	Total	276.150	213			

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

b. Predictors: (Constant), REGR factor score 1 for analysis 1

The probability of the F statistic (121.286) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.579	.062		57.525
	REGR factor score 1 for analysis 1	.687	.062	.603	11.013

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 1	.000

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

We can represent the regression equation as:

Y= 3.579 + 0.687(a)

Where Y represents the dependent variable (You are willing to return to the hospital when you will need treatment).

(a)Represents the regressed factor 1 of the first category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Factor 1 of the second category is regressed against the second dependent variable (You are willing to return to the hospital when you need treatment).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 2[b]	.	Enter

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.736[a]	.542	.540	.786

a. Predictors: (Constant), REGR factor score 1 for analysis 2

The R square obtained in the Model summary shows 54.2% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158.009	1	158.009	255.481	.000[b]
	Residual	133.591	216	.618		
	Total	291.601	217			

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

b. Predictors: (Constant), REGR factor score 1 for analysis 2

The probability of the F statistic (255.481) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.564	.053		66.916
	REGR factor score 1 for analysis 2	.853	.053	.736	15.984

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 2	.000

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

We can represent the regression equation as:

Y= 3.564 + 0.853(a)

Where Y represents the dependent variable (You are willing to return to the hospital when you will need treatment).

(d) Represents the regressed factor 1 of the second category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Factor 2 of the third category is regressed against the second dependent variable (You are willing to return to the hospital when you will need treatment).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 2 for analysis 3[b]	.	Enter

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.449[a]	.201	.198	1.028

a. Predictors: (Constant), REGR factor score 2 for analysis 3

The R square obtained in the Model summary shows 20.1% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.956	1	56.956	53.931	.000[b]
	Residual	226.002	214	1.056		
	Total	282.958	215			

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

b. Predictors: (Constant), REGR factor score 2 for analysis 3

The probability of the F statistic (56.931) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.569	.070		51.048
	REGR factor score 2 for analysis 3	.515	.070	.449	7.344

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 2 for analysis 3	.000

a. Dependent Variable: You are willing to return to the hospital when you will need treatment.

We can represent the regression equation as:

Y= 3.569 + 0.515(a)

Where Y represents the dependent variable (You are willing to return to the hospital when you will need treatment).

(a)Represents the regressed factor 2 of the third category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Factor 1 of the first category is regressed against the third dependent variable (You will adhere to therapy provided to you by the hospital).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 1[b]	.	Enter

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.573[a]	.328	.325	.811

a. Predictors: (Constant), REGR factor score 1 for analysis 1

The R square obtained in the Model summary shows 32.8% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.094	1	68.094	103.501	.000[b]
	Residual	139.476	212	.658		
	Total	207.570	213			

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. Predictors: (Constant), REGR factor score 1 for analysis 1

The probability of the F statistic (103.501) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.636	.055		65.568
	REGR factor score 1 for analysis 1	.565	.056	.573	10.174

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 1	.000

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

We can represent the regression equation as:

Y= 3.636 + 0.565(a)

Where Y represents the dependent variable (You will adhere to the therapy provided to you by the hospital).

(a)Represents the regressed factor 1 of the first category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The first factor of the second category is regressed against the third dependent variable (You will adhere to the therapy provided to you by the hospital).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 2[b]	.	Enter

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713[a]	.509	.506	.712

a. Predictors: (Constant), REGR factor score 1 for analysis 2

The R square obtained in the Model summary shows 50.9% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.755	1	112.755	222.510	.000[b]
	Residual	108.950	215	.507		
	Total	221.705	216			

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. Predictors: (Constant), REGR factor score 1 for analysis 2

The probability of the F statistic (222.510) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear

relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.609	.048		74.687
	REGR factor score 1 for analysis 2	.721	.048	.713	14.917

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 2	.000

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

We can represent the regression equation as:

Y= 3.609 + 0.721(a)

Where Y represents the dependent variable (You will adhere to the therapy provided to you by the hospital).

(a)Represents the regressed factor 1 of the second category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The second factor of the third category is regressed against the third dependent variable (You will adhere to the therapy provided to you by the hospital).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 2 for analysis 3[b]	.	Enter

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.399[a]	.159	.155	.918

a. Predictors: (Constant), REGR factor score 2 for analysis 3

The R square obtained in the Model summary shows 15.9% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.163	1	34.163	40.512	.000[b]
	Residual	180.462	214	.843		
	Total	214.625	215			

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

b. Predictors: (Constant), REGR factor score 2 for analysis 3

The probability of the F statistic (40.512) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.625	.062		58.016
	REGR factor score 2 for analysis 3	.399	.063	.399	6.365

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 2 for analysis 3	.000

a. Dependent Variable: You will adhere to the therapy provided to you by the hospital.

We can represent the regression equation as:

Y= 3.625 + 0.399(a)

Where Y represents the dependent variable (You will adhere to the therapy provided to you by the hospital).

(a)Represents the regressed factor 2 of the third category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The first factor of the first category is regressed against the fourth dependent variable (You will recommend the hospital to your friends).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 1[b]	.	Enter

a. Dependent Variable: You will recommend the hospital to your friends.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.631[a]	.399	.396	.882

a. Predictors: (Constant), REGR factor score 1 for analysis 1

The R square obtained in the Model summary shows 39.9% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108.896	1	108.896	139.826	.000[b]
	Residual	164.325	211	.779		
	Total	273.221	212			

a. Dependent Variable: You will recommend the hospital to your friends.

b. Predictors: (Constant), REGR factor score 1 for analysis 1

The probability of the F statistic (139.826) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.484	.060		57.621
	REGR factor score 1 for analysis 1	.717	.061	.631	11.825

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 1	.000

a. Dependent Variable: You will recommend the hospital to your friends.

We can represent the regression equation as:

Y= 3.484 + 0.717(a)

Where Y represents the dependent variable (You will recommend the hospital to your friends).

(a)Represents the regressed factor 1 of the first category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The first factor of the second category is regressed against the fourth dependent variable (Toy will recommend the hospital to your friends).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 2[b]	.	Enter

a. Dependent Variable: You will recommend the hospital to your friends.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.761[a]	.579	.577	.751

a. Predictors: (Constant), REGR factor score 1 for analysis 2

The R square obtained in the Model summary shows 57.9% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.847	1	166.847	295.819	.000[b]
	Residual	121.264	215	.564		
	Total	288.111	216			

a. Dependent Variable: You will recommend the hospital to your friends.

b. Predictors: (Constant), REGR factor score 1 for analysis 2

The probability of the F statistic (295.819) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.472	.051		68.104
	REGR factor score 1 for analysis 2	.878	.051	.761	17.199

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 2	.000

a. Dependent Variable: You will recommend the hospital to your friends.

We can represent the regression equation as:

Y= 3.472 + 0.878(a)

Where Y represents the dependent variable (You will recommend the hospital to your friends).

(a)Represents the regressed factor 1 of the second category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The second factor of the third category is regressed against the fourth dependent variable (You will recommend the hospital to your friends).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 2 for analysis 3[b]	.	Enter

a. Dependent Variable: You will recommend the hospital to your friends.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.438[a]	.192	.188	1.030

a. Predictors: (Constant), REGR factor score 2 for analysis 3

The R square obtained in the Model summary shows 19.2% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.633	1	53.633	50.542	.000[b]
	Residual	226.023	213	1.061		
	Total	279.656	214			

a. Dependent Variable: You will recommend the hospital to your friends.

b. Predictors: (Constant), REGR factor score 2 for analysis 3

The probability of the F statistic (50.542) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3.478	.070		49.504
	REGR factor score 2 for analysis 3	.500	.070	.438	7.109

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 2 for analysis 3	.000

a. Dependent Variable: You will recommend the hospital to your friends.

We can represent the regression equation as:

Y= 3.478 + 0.5(a)

Where Y represents the dependent variable (You will recommend the hospital to your friends).

(e) Represents the regressed factor 2 of the third category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The first factor of the first category is regressed against the fifth dependent variable (You were satisfied with the hospital's physician).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 1[b]	.	Enter

a. Dependent Variable: You were satisfied with the hospital's physician.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.421[a]	.177	.173	.887

a. Predictors: (Constant), REGR factor score 1 for analysis 1

The R square obtained in the Model summary shows 17.7% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.587	1	35.587	45.253	.000[b]
	Residual	165.144	210	.786		
	Total	200.731	211			

a. Dependent Variable: You were satisfied with the hospital's physician.

b. Predictors: (Constant), REGR factor score 1 for analysis 1

The probability of the F statistic (45.253) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.740	.061		61.401
	REGR factor score 1 for analysis 1	.409	.061	.421	6.727

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 1	.000

a. Dependent Variable: You were satisfied with the hospital's physician.

We can represent the regression equation as:

Y= 3.740 + 0.409(a)

Where Y represents the dependent variable (You were satisfied with the physician at the hospital).

(a)Represents the regressed factor 1 of the first category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The first factor of the second category is regressed against the fifth dependent variable (You were satisfied with the hospital's physician).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 1 for analysis 2[b]	.	Enter

a. Dependent Variable: You were satisfied with the hospital's physician.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.705[a]	.497	.494	.711

a. Predictors: (Constant), REGR factor score 1 for analysis 2

The R square obtained in the Model summary shows 49.7% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	107.189	1	107.189	212.083	.000[b]
	Residual	108.663	215	.505		
	Total	215.853	216			

a. Dependent Variable: You were satisfied with the hospital's physician.

b. Predictors: (Constant), REGR factor score 1 for analysis 2

The probability of the F statistic (212.083) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.719	.048		77.053
	REGR factor score 1 for analysis 2	.703	.048	.705	14.563

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 1 for analysis 2	.000

a. Dependent Variable: You were satisfied with the hospital's physician.

We can represent the regression equation as:

Y= 3.719 + 0.703(a)

Where Y represents the dependent variable (You were satisfied with the hospital's physician).

(a) Represents the regressed factor 1 of the second category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

The second factor of the third category is regressed against the fifth dependent variable (You were satisfied with the hospital's physician).

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	REGR factor score 2 for analysis 3[b]	.	Enter

a. Dependent Variable: You were satisfied with the hospital's physician.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.611[a]	.374	.371	.784

a. Predictors: (Constant), REGR factor score 2 for analysis 3

The R square obtained in the Model summary shows 37.4% of the total variance of the dependent variable.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77.873	1	77.873	126.595	.000[b]
	Residual	130.408	212	.615		
	Total	208.280	213			

a. Dependent Variable: You were satisfied with the hospital's physician.

b. Predictors: (Constant), REGR factor score 2 for analysis 3

The probability of the F statistic (126.595) is 0.000 which is less than 0.05. Thus, we accept the alternative hypothesis that there is a statistically significant Linear

relationship between the best subset of independent variables and the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	3.733	.054		69.632
	REGR factor score 2 for analysis 3	.604	.054	.611	11.251

Coefficients[a]

Model		Sig.
1	(Constant)	.000
	REGR factor score 2 for analysis 3	.000

a. Dependent Variable: You were satisfied with the hospital's physician.

We can represent the regression equation as:

Y= 3.733 + 0.604(a)

Where Y represents the dependent variable (You were satisfied with the hospital's physician).

(a)Represents the regressed factor 2 of the third category.

Since the coefficient is positive, and the p-value of the T-test is less than alpha (< 0.05), there is enough evidence that there is a statistically significant linear relationship between the selected independent variables and the dependent variable.

Independent Samples T Test

The independent samples T-Test determines whether there is a statistically significant difference between the means of two independent groups.

Two assumptions are used to run this test:

1. The assumption of the normality of the dependent variable.
2. The assumption of homogeneity (equality) of variances. It is tested by Levene's Test for equality of Variances.
   a. If the significance for Levene's test is greater than 0.05, then the two group variances can be treated as equal.
   b. If the significance for Lenene's test is equal or below 0.05, the assumption of homogeneity of variances is rejected and the Equal Variances not assumed is used to test the equality of means.

   In both cases, the basic criterion for statistical significance difference between the two population's means is a "2-tailed significance" less than 0.05, thus we reject the null hypothesis that the two population means are equal, and we accept the alternative hypothesis that the two population means are not equal.

The independent T-test was performed on the accreditation status to see whether patients in accredited hospitals had greater satisfaction than patients in non-accredited hospitals in Lebanon.

Group Statistics

	Accreditation Status	N	Mean	Std. Deviation	Std. Error Mean
You were satisfied with the healthcare at the hospital.	accredited	91	4.12	.712	.075
	non accredited	110	3.23	1.020	.097

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of
		F	Sig.	t
You were satisfied with the healthcare at the hospital.	Equal variances assumed	17.620	.000	7.055
	Equal variances not assumed			7.290

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
You were satisfied with the healthcare at the hospital.	Equal variances assumed	199	.000	.894
	Equal variances not assumed	193.843	.000	.894

The Levene's test is 0.000 which is smaller than 0.05, thus variances are not equal, the assumption of homogeneity of variances is rejected and "Equal variances not assumed" is used to test the equality of means.

The t- statistic is 0.000 which is less than 0.05, thus we accept the alternative hypothesis that satisfaction of patients in accredited hospitals differs than satisfaction of patients in non-accredited hospitals, with higher satisfaction in accredited hospitals (mean=4.12) than in non-accredited ones (mean=3.23).

Other Independent T-tests were performed on Gender and Family status separately to see if there is a difference between levels of satisfaction of patients in hospitals regarding each factor.

Group Statistics

	What is your gender?	N	Mean	Std. Deviation	Std. Error Mean
You were satisfied with the healthcare at the hospital.	male	76	3.54	.986	.113
	female	143	3.64	.982	.082

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of
		F	Sig.	t
You were satisfied with the healthcare at the hospital.	Equal variances assumed	.021	.885	-.744
	Equal variances not assumed			-.743

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
You were satisfied with the healthcare at the hospital.	Equal variances assumed	217	.457	-.104
	Equal variances not assumed	152.500	.458	-.104

The Levene's test is 0.885 which is greater than 0.05, thus equal variances assumed.

The t- statistic is 0.457 which is greater than 0.05, thus we accept the null hypothesis that satisfaction of patients in Lebanese Hospitals does not differ according to the gender of the patient, with approximately equal means of 3.54 for males and 3.64 for females.

Group Statistics

	Your family status	N	Mean	Std. Deviation	Std. Error Mean
You were satisfied with the healthcare at the hospital.	have children	122	3.66	1.025	.093
	i don't have children	96	3.53	.929	.095

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of
		F	Sig.	t
You were satisfied with the healthcare at the hospital.	Equal variances assumed	.342	.559	.988
	Equal variances not assumed			1.000

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
You were satisfied with the healthcare at the hospital.	Equal variances assumed	216	.324	.133
	Equal variances not assumed	211.730	.318	.133

The Levene's test is 0.559 which is greater than 0.05, thus equal variances assumed.

The t- statistic is 0.324 which is greater than 0.05, thus we accept the null hypothesis that satisfaction of patients in Lebanese Hospitals does not differ according to the family status of the patient, with approximately equal means of 3.66for those who have childrenand 3.53 for those who do not have.

One –Way Anova

One Way analysis of Variance (ANOVA) is used to determine whether there are significant differences between the means of at least three independent groups.

In this study, One-Way Anova was performed to test whether there is a statistically significant differences in level of satisfaction of patients with the healthcare in Lebanese hospitals among the 4 different educational level groups.

ANOVA

You were satisfied with the healthcare at the hospital.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.620	3	2.207	2.366	.072
Within Groups	196.775	211	.933		
Total	203.395	214			

The significance of the F statistics (2.366) is 0.072 which is greater than 0.05, thus there is insufficient evidence that there are statistically significant differences among the 4 groups of educational level.

In addition to the educational level groups, One Way ANOVA was performed on different groups of age, monthly income, and length of stay in the hospital to test whether there is a statistically significant differences in level of satisfaction of patients with the healthcare in Lebanese hospitals among the different groups of each factor separately.

ANOVA

You were satisfied with the healthcare at the hospital.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.149	3	1.716	1.808	.147
Within Groups	203.130	214	.949		
Total	208.280	217			

The significance of the F statistics (1.808) is 0.147 which is greater than 0.05, thus there is insufficient evidence that there are statistically significant differences among the 4 groups of age.

ANOVA

You were satisfied with the healthcare at the hospital.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.841	3	.280	.285	.836
Within Groups	206.397	210	.983		
Total	207.238	213			

The significance of the F statistics (0.285) is 0.836 which is greater than 0.05, thus there is insufficient evidence that there are statistically significant differences among the 4 groups of monthly income.

ANOVA

You were satisfied with the healthcare at the hospital.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.656	2	2.828	2.943	.055
Within Groups	200.848	209	.961		
Total	206.505	211			

The significance of the F statistics (2.943) is 0.055 which is equal to 0.05, thus there is insufficient evidence that there are statistically significant differences among the 3 groups of length of stay in the hospital.

Chapter Six

Summary of Findings and Recommendations

Findings:

As stated through the research questions, this study mainly aimed to test what factors of quality health care have impact on patient satisfaction in a sample of patients from Lebanese Hospitals. It also tested if there was a difference in patients' satisfaction according to the accreditation status of their hospital. In addition, it tested if there was a difference in patients' satisfaction according to socio demographic characteristics of patients, i.e.; age, education level, family status, monthly income and gender.

Findings from Regression Analysis:

The first test of hypotheses tested to know whether the 21 independent variables positively correlate with each of the five dependent variables: patient satisfaction with healthcare in the hospital, patient's adherence to therapy, patient's willingness to return to the same hospital, patient willingness to recommend the hospital to friends, and patient satisfaction with the physician.

Finding 1:

The more the patient perceives that:

1. The services he receives were up to what he expected.
2. The amount of time spent with the physician was satisfactory.
3. His fear and anxiety at the hospital were relieved and he felt at peace.
4. The hospital had hygienic facilities.
5. He was easily able to access the hospital's services.
6. Administrative staff facilitated communication between nurses, physicians, and patients.

The more the patient is satisfied with healthcare at the hospital.

Finding 2:

The more the patient perceives that:

1. His fear and anxiety at the hospital were relieved and he felt at peace.
2. Nurses responded to his needs and preferences.
3. The physician was sensitive to his rights.
4. The hospital has sufficient qualified staff.
5. It was easy to access the hospital's services.
6. The clinical/medical results were correctly diagnosed.

The more the patient will be willing to return to the hospital when he needs treatment.

Finding 3:

The more the patient perceives that:

1. His fear and anxiety in the hospital were relieved and he felt at peace.
2. The hospital had hygienic facilities.
3. Nurses responded to his needs and preferences.
4. It was easy to access the hospital's services.
5. Information and data provided to you were easy to understand.

The more the patient will adhere to the therapy provided to him by the hospital.

Finding 4:

The more the patient will perceive that:

1. His fear and anxiety in the hospital were relieved and he felt at peace.
2. The hospital had hygienic facilities.

3. Nurses responded to his needs and preferences.
4. The amount of time he spend with his physician was satisfactory.
5. The administrative staff facilitated good communication among nurses, physicians, and patients

The more the patient will recommend the hospital to his friends.

Finding 5:

The more the patient perceives that:

1. The physician listened to his needs.
2. The clinical/medical results were correctly diagnosed.
3. The amount of time spend with the physician were satisfactory.
4. The physician was sensitive to his rights.
5. His fear and anxiety in the hospital were relieved and he felt at peace.

The more the patient will be satisfied with the hospital's physician.

Findings from the Independent Sample T-Test:

Finding 6:

Satisfaction of patients in accredited hospitals differs from satisfaction of patients in non-accredited hospitals, i.e.: patients of accredited hospitals are more satisfied than patients in non-accredited hospitals.

Finding 7:

Gender and Family status do not affect satisfaction. Results of T-test show that Satisfaction of patients in Lebanese hospitals doesn't depend neither on the gender of the patient, nor on his family status (if he has children or not).

Findings from One Way ANOVA:

Finding 8:

Results of One Way ANOVA revealed that there was no significant difference between satisfaction of patients according to age, monthly income, educational level, and length of stay in the hospital.

This finding regarding lack of difference in level of satisfaction between patients with different socio demographic characteristics is different from what the literature describes. This may perhaps be linked to the Lebanese reality were a number of patients would be satisfied just to have received healthcare, whether that care is high quality or not.

Recommendations:

1. Our statistical analysis showed that the specific factors of quality healthcare that we have focused on, were all positively related with patient satisfaction. This finding is in accordance to the literature that we have referred to.
   Therefore, we recommend that managers of hospitals focus on the factors that affect satisfaction, and work on improving them so that patients will achieve better satisfaction levels.

   As Donabedian categorized quality factors into structure, process, and outcome, concentration of managers should be focused on each of the categories separately, then integrating their work and efforts at the end for better patient satisfaction results.

   Regarding structure, managers should concentrate on having hygienic facilities, maintaining sufficient number of qualified staff, and assuring coordination of care between different units.

   In the process category, patients are interested in the sufficient amount of time they spend with their physician who should be sensitive to their rights

and listen to their needs. Furthermore, they want to deal with nurses who respond to their needs and communicate with them using understandable terms and data. Therefore, managers' role is to maintain the presence of such cooperative nurses and physicians for better satisfaction levels.

Better satisfaction outcomes can also be achieved by managers when they work on patients' rights to receive what they expect from services, to have easy access to all hospital's services, to get correct medical/clinical diagnosis of their health problems, thus when relieving patients' fear and anxiety so that patients feel at peace.

Moreover, since accreditation of hospitals provide services that satisfy patients more, Lebanese Hospitals that do not have accreditation at this point should aim to achieve accreditation status.

Questionnaire Invitation Letter

Factors of Healthcare Quality that Affect Patient Satisfaction in Lebanese Hospitals

Dear Participants,

As a part of finishing the steps of my MBA Degree from Haigazian University, I am conducting a survey about patient satisfaction and its relation to the quality of healthcare provided to patients by Lebanese hospitals.

Giving me time to fill out the attached questionnaire will be really appreciated.

Any of the personal information regarding your name or address is not required. All your responses will remain strictly confidential, and will be reported anonymously in the thesis.

The questionnaire consists of 25 statements that should be filled according to your level of agreement on the practices of physicians and nurses, as well as services provided by Lebanese hospitals. The scale will vary among Strongly Disagree – Disagree – Neutral – Agree – Strongly Agree.

The name of the Lebanese hospital should be mentioned and your response to its services will be evaluated when answering the questionnaire.

I will be thankful if you clicked on the following link to fill up the survey:

https://www.surveymonkey.com/r/8S5VGRT

For any clarification, please do not hesitate to contact me at

Maya.abm@hotmail.com

Your cooperation and support are highly appreciated,

Sincerely,

Maya AbouMelhem

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The services you received were up to what you expected.					
2. Nurses responded to your needs and preferences.					
3. The physician listened to your needs.					
4. The physician was patient.					
5. The physician was sensitive to your rights.					
6. The administrative staff facilitated communication between nurses, physicians, and patients.					
7. The administrative staff created good coordination of care between different units.					
8. The hospital had sufficient qualified staff.					
9. The hospital had good Facilities.					
10. The hospital had hygienic facilities.					
11. The clinical/medical results were correctly diagnosed.					
12. In the hospital, your fear and anxiety were relieved and you felt at peace.					
13. The financial costs of your healthcare were appropriate.					
14. The concerns and complaints were heard					
15. The concerns and complaints were resolved.					
16. You felt comforted and					

emotionally supported by staff.					
17. Information and data provided to you were easy to understand.					
18. Your family and you were included in the decisions about your treatment.					
19. The amount of time you spent with the physician was satisfactory.					
20. Nurses helped you to be part of the decision-making regarding your care.					
21. It was easy to access the hospital's services.					
22. You were satisfied with the healthcare at the hospital.					
23. You will continue being treated in this hospital.					
24. You will adhere to the therapy provided to by the hospital.					
25. You will recommend this hospital to your friends.					
26. You were satisfied with the physician.					

List of References

1. http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-14-466
2. http://www.ncbi.nlm.nih.gov/pubmed/9447632
3. http://www.ncbi.nlm.nih.gov/pubmed/16548402
4. http://www.emeraldinsight.com/doi/abs/10.1108/CGIJ-12-2014-0038
5. http://www.ncbi.nlm.nih.gov/pubmed/15301268
6. http://www.ncbi.nlm.nih.gov/pubmed/15532516
7. http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-4-26
8. http://www.ncbi.nlm.nih.gov/pubmed/14608220
9. http://www.ncbi.nlm.nih.gov/pubmed/19957421
10. http://www.emeraldinsight.com/doi/abs/10.1108/08876040010352727?journalCode=jsm
11. http://www.ncbi.nlm.nih.gov/pubmed/10156434
12. http://www.emeraldinsight.com/doi/abs/10.1108/17511870910927994
13. https://www.researchgate.net/publication/230137339_The_Role_of_Clinical_and_Process_Quality_in_Achieving_Patient_Satisfaction_in_Hospitals
14. https://www.researchgate.net/publication/26784552_Factors_affecting_patient_satisfaction_and_healthcare_quality
15. https://intqhc.oxfordjournals.org/content/intqhc/20/5/363.full.pdf
16. http://www.ncbi.nlm.nih.gov/pubmed/23690327
17. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4354453/
18. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3862820/
19. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1757991/pdf/v011p00335.pdf
20. http://www.sciencedirect.com/science/article/pii/0271712378900391
21. http://www.ncbi.nlm.nih.gov/pubmed/12445102
22. https://www.researchgate.net/publication/250614997_The_relationship_between_nursing_leadership_and_patient_outcomes_A_systematic_review