

Importance of Patient Satisfaction Measurement and Electronic Surveys: Methodology and Potential Benefits

Stamatia Ilioudi¹, Athina Lazakidou² and Maria Tsironi³

Abstract

Online surveys conducted to find out customer satisfaction are increasingly important for modern businesses and healthcare organizations. Nowadays online customer satisfaction surveys are inextricably linked to business practices, marketing programs as well as other initiatives aimed at accomplishing customer engagement. A patient/customer satisfaction survey has a number of advantages that contemporary companies recognize, advantages that have been proved in the course of time. Patient/customer satisfaction surveys are not only tools of inviting patients to express their opinion, they are also opportunities to invite patients to learn new information about companies or healthcare organizations, such as innovations or changes, and vehicles of establishing customers' viewpoints. Patient satisfaction is related to the extent to which general health care needs and condition-specific needs are met. Evaluating to what extent patients are satisfied with health services is clinically relevant, as satisfied patients are more likely to comply with treatment, take an active role in their own care, to continue using medical care services and stay within a health provider (where there are some choices) and maintain with a specific system. In addition, health professionals may benefit from satisfaction surveys that identify potential areas for service improvement and health expenditure may be optimised through patient-guided planning and evaluation.

Keywords: Patient satisfaction; measurement; healthcare; quality assurance; reliability; validity; electronic surveys

¹University of Peloponnese, Faculty of Human Movement and Quality of Life Sciences, Department of Nursing, Sparta, Greece.
e-mail: mata_ilioudi@yahoo.gr

²University of Peloponnese, Faculty of Human Movement and Quality of Life Sciences, Department of Nursing, Sparta, Greece.
e-mail: lazakid@uop.gr

³University of Peloponnese, Faculty of Human Movement and Quality of Life Sciences, Department of Nursing, Sparta, Greece.
e-mail: tsironi@uop.gr

1 Introduction

The cost of providing health care is escalating at an alarming rate. With challenges ranging from rising malpractice costs to physician turnover, medical practices must maximize resources and make tough choices in order to remain profitable. It is precisely these challenges that make improving patient satisfaction so critical. Important ways to improve patient satisfaction are the reducing of malpractice costs, the decreasing patient defections, the decreasing negative word-of-mouth advertising and the increasing patient referrals. In addition, improving patient satisfaction leads to increased productivity. Physicians and staff often spend a lot of time reacting to complaints and dealing with non-compliant patients, which negatively impacts office efficiency. By contrast, satisfied patients are easier and more rewarding to care for, take up less physician and staff time and are more compliant. Improved patient satisfaction decreases the length of patients' visits and wait times, reduces treatment costs and increases patient volume.

The issue of patient/customer satisfaction has gained increasing attention from executives across the healthcare industry. The measurement of patient satisfaction through patient satisfaction surveys has helped organizational leaders incorporate patient perspectives as a way to create a culture where service is deemed an important strategic goal for healthcare facilities. However, despite their many efforts and successes with satisfaction measurement, evidence shows that more work in this area is still needed. One of the primary challenges has been in sustaining patient/customer satisfaction improvement initiatives in the face of competing priorities and diminishing resources.

Patient complaints have a long history of use in the health system as a measure of dissatisfaction, but it is only in recent decades that formal patient satisfaction surveys have been used as a measure of the quality of care, and a link between this measure, and patient safety, has been made.

The measurement of patient satisfaction and complaints is an attempt to capture elements of the quality care against patient expectations. These elements include: the art of care (caring attitude); technical quality of care; accessibility and convenience; finances (ability to pay for services); physical environment; availability; continuity of care; efficacy and outcome of care. Patient satisfaction surveys and patient complaint letters are widely used in health systems across the world. The tools themselves vary both in type (survey, questionnaire, critical incident technique) and focus. Patient satisfaction surveys and patient complaint data can be easily integrated elements of clinical practice improvement programs. Their effectiveness depends on their construction, their applicability to the service context, and their use as drivers of change.

2 Characteristics that influence the Patient Satisfaction

The satisfaction of a patient by the provided health care, is based on a number of factors. Thoroughly, as can be seen from the overview of the bibliography, those factors can be discriminated into three categories [1; 2].

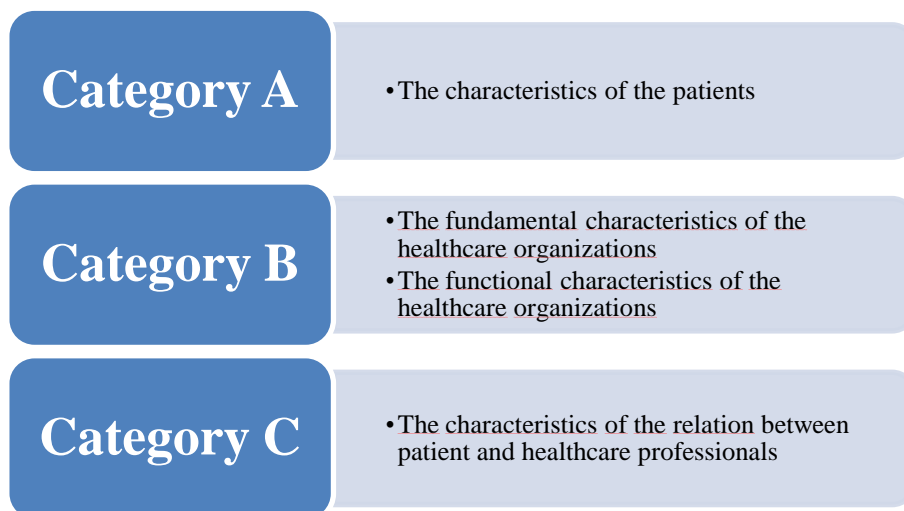


Figure 1: Categories of Factors that influence the Patient Satisfaction

Category A: The characteristics of the patients. In this category are included the social-demographic elements (age, gender, profession, family status, education and social-economic level), as well as the expectations of the provided healthcare.

According to Strasser [3] and Davis the demographic characteristics of the patients, such as gender, profession, age, income, education influence the satisfaction coming from the nursing healthcare and in addition there exists a strong connection between the demographic characteristics of the patients and the choice of doctor and services [3]. Therefore, if the choice of healthcare services is connected with the satisfaction of the patient, then his demographic characteristics, seem related to the quality of those services as the patient understands it [4].

Fitzpatrick, Fox and Storms claim that age plays a main part in the satisfaction, since older patients report high levels of satisfaction and usually give praising answers, since they do not want to challenge the expertise of the doctors and nurses [4; 5]. This fact might be based on the low expectations of the older patients or the different attitude of the older towards daily life and certain values [7], due mostly because of the time during which they were published. For example, people who were raised during unstable times and experienced great difficulties might show higher tolerance to expressing their dissatisfaction for the healthcare system compared to people who grew up during better times [8].

The existing bibliography doesn't pinpoint with precision that the gender factor influences the satisfaction of patients. Certain studies do not reveal a connection between gender and satisfaction [4], other research shows that men voice higher amounts of satisfaction compared to women, while others claim that women are more satisfied [9].

As for the educational level of the patients, Anderson and Zimmerman claim that it is the only variable that influences the satisfaction of the patients, something which wasn't confirmed by similar studies [10]. At the same time, it has been observed that people with low education level express higher levels of satisfaction, in comparison with patients of higher educational level, perhaps due to lower expectations by the former [11; 12].

In addition, the social standing of the patient shows a close relation to their level of condiment. Hall and Dornan believe that the social standing of the patients is the most

important factor [13]. Specifically, studies show that the most well off receive better care by the less privileged, even in the same healthcare, and are therefore more satisfied. On the other hand, the economically weaker groups receive lesser amounts of healthcare, due to lack of choice [4; 14].

Furthermore, apart from the socio demographic characteristics of the patients that are related to their satisfaction degrees from the quality of the given healthcare, the satisfaction of the patients is directly related to the degree of completion of their expectations. Based on that, the satisfaction is defined as the difference between what the patients expects of healthcare services and what he actually receives [15]. In particular, when the result of the healthcare meets the patients' expectations, then they feel satisfied, while on the opposite situation they are displeased. However, researches exist that show the opposite result, like the research of Owens and Batchelor, according to which the expectations might be low or nonexistent and the degree of satisfaction might be high.

Category B: The fundamental and functional characteristics of the healthcare organizations. In this sector belong the bureaucracy, the easy access of the patients to the healthcare services and the arrangement of economical matters.

Specifically, this category is determined by a sum of internal functional procedures, like time and order of waiting for the introduction of the patient, his preparation for the performance of checkups or surgeries, the supplying of medicine, the continuation of health caring and the communication of the personnel with the patient's family.

At the same time, based on the bibliography, we observe that from the fundamental and functional characteristics of the organizations, the easy access and the continuation of care and communication, hotel equipment and administered conveniences affect positively the satisfaction of the patients, since they are a criterion of choosing a healthcare service provider.

In particular, researches estimate that there is a higher percentage of satisfaction from hotel services of modern hospitals, usually at the girth, compared to older hospitals of urban cities [16].

On the other hand the high cost of the administered healthcare services and the extended in-line time of the patients for their entry or checkup at the infirmary of Outpatient or Emergency Department, have a negative impact at the satisfaction level, although research shows satisfaction and tolerance by the patients concerning the increased requirements and pressure that the healthcare personnel receives, especially when the patients are informed or the reason's of the delay [17; 18].

Category C: The characteristics of the relation between patient and healthcare professionals. The last category refers to the correct relation between patients and healthcare professionals, which is successful with the appropriate training of the personnel at communication subjects.

The right relationship between healthcare professionals and patients has been described as important, complicated and multifaceted by a lot of researchers. The relationship between doctor and patient can be achieved with the best training of the former at communication subjects. Specifically, it is based on elements like friendly attitude, concern, trust and discretion of the healthcare professionals for the patient's condition. On many occasions this can limit or remove the patient's fear and stress, since even if the technology used is advanced and the success rate the highest possible, it's doubtful that the patient will be satisfied if he is not treated with dignity, politeness, delicacy, susceptibility and

understanding [19].

Thereafter, the intermediate state of healthcare seems to contribute to the patient satisfaction [20; 58; 59], whereas many studies show that such a communication has an influence on the patient [57; 22].

Specifically, there appear to be two dissociations in the relationship between patient and doctor, which are about:

- ✓ the quality and quantity of information provided by the healthcare personnel to the patient,
- ✓ the interest and sympathy shown by the personnel towards the patient [60].

The quality of information the patient receives is a decisive element for his satisfaction. Usually the displeasure of patients is influenced greatly by the minimum information they receive and the limited or nonexistent communication between them and the healthcare team. This is a result of either the healthcare professionals not being trained in constant communication and providence of information for the patient (especially when it concerns "bad news", or because they try to control the patient, therefore limiting information at minimum levels or by concealing information regarding his/her health or life. This kind of conventional information and lack of communication is usually preferred by the healthcare professionals because in turn, it influences negatively the medical procedure [23]. At the same time the medical choices and the time the doctor dedicates to communicating with the patient and answering his questions, is estimated to be directly connected to both the satisfaction of the patient from the healthcare services and the patient's acceptance of his health condition, as well as cooperation in his medical treatment [24].

Indisputably, the relationship between the patient and the healthcare professionals is determined by the information received by the former, the participation of the patient himself in taking decisions regarding the medical treatment he should receive and the ability of the doctor to listen to him, understand him and respect him, apart from communication [25]. Consequently, the level of satisfaction is based greatly on the ability of the hospitalized to express their feelings and concerns to someone who is willing to listen.

3 Patient Satisfaction Evaluation

The satisfaction of the patients is an adjusted way of measurement for the efficiency of the healthcare providers [26]. In addition, a large number of researchers claim that evaluation of satisfaction is an important tool for research, management and design of the provided healthcare services, since the information feedback by the patients can be used systematically in choosing alternative organization methods or providing healthcare [27].

The measurement of patient satisfaction is based on researching various aspects of health and therefore should not be considered only as a marker for the quality of provided services but as the purpose of any modern health care system for its improvement.

Patient satisfaction appears to be a useful indicator that provides a direct indication of the quality of health services. Therefore should be measured frequently, so as to develop a modern plan for improving the health system [21]. The satisfaction of users is a very important part of any clinical practice, it is therefore imperative that research is often carried by in order, to deliver better quality services [28; 41].

Additionally, private companies successfully use the method of research for improving

services or products, thus, in the same way can be used successfully, despite the current criticism, satisfaction survey of health services and to become a useful tool in orientation of the health system to the citizen-user of health services [29].

Taking into account the shift to consumerism, which is observed in all public and private services, patients are treated either as health care consumers, or as users of health services and their rights are recognized, as well as their need to participate in decision-making, planning and implementation of healthcare policies [61].

Under this framework, information is collected from user's health services, the patient, in order to highlight any issues relating to quality of clinical, medical and administrative activities. In detail, through the patient satisfaction surveys the desires of patients are studied and through their priorities the services are evaluated and problems or deficiencies emerge of the health system, with the ultimate goal being to design and implement all necessary changes that will lead to the rebirth and thus on improve the quality of services [62].

Evaluations of user-patients may be subject to education on the staff of a health care both for their achievements, and failures, helping them to better meet the needs of their patients. The assessment, which derives from the patients, may propose guidelines to improve attitude of health professionals to better serve patients and thus improve the level of satisfaction of health services [30]. Satisfying patients is influenced by various factors, for example, they need to be satisfied with physicians, treatment, equipment operator and generally with conditions. It is also affected by the knowledge that they themselves have for mainstream health services.

Research results indicate that patients recover more quickly satisfied and are hospitalized for a shorter time compared to those that are not satisfied. Even the research process for measuring satisfaction has positive results, as it has been shown to increase patient satisfaction and encourage their active participation. Therefore, patient satisfaction evaluation should be done at regular intervals for the evaluation and improvement of service [31].

However, despite the importance and great interest of researchers to measure satisfaction of health services users, and the increasing number of efforts made in recent years to improve and establish credible measuring tools, it is not easy to implement commonly accepted methodological tools and models for measuring patient satisfaction [32].

4 Objectives of the Patient Satisfaction Evaluation

In recent decades, most industrialized countries have understood the importance of patient satisfaction evaluation, if the international bibliography is a reliable indicator for the evaluation of health policies and is directly related with adequate satisfaction of general, and special health needs [31], providing them at the same time, with important information for the health unit management, concerning the efficiency of its staff.

About the technical quality indicators, such as eligibility criteria or custom models results, the data on patients' satisfaction is easy to assemble, but difficult to interpret, due to which many health organizations are tempted to stop at the first step, collection. Because the goals and values of patients vary greatly and should be satisfied, the fact that it is not predictable based on the demographic data and their disease only, but many times are subject to change, the only way to determine what patients want and if their needs are met or not, is to ask. In this perspective, the aspect of care "through the eyes of the patient" is

a moral and professional imperative [33].

Health organizations today operate in a very competitive environment where patient satisfaction is an important key to maintaining a market share of the health services [63].

The ability to satisfy the patients is vital for various reasons. First of all, it is useful, especially for healthcare organizations, to create healthcare services oriented to the patients, which are characterized by high quality, instead of focusing only to the disease of the patient. Patient satisfaction is also a valuable competitive tool for the health authority, to increase the staff's efforts. Recent studies have shown that patient satisfaction may drastically improve their life quality [34].

The unsatisfactory levels of patient satisfaction, may deny approval of the health programs by certifying bodies or funding. Consequently, various health plans will lack this important competitive advantage [63].

Additionally, patient satisfaction surveys are the main sources of feedback from patients about health services [35]. They can be used as tools for market making services by patients, affect decisions regarding the restructuring of provision services, as well as be used to assess the impact of various policy changes of the health services [64].

Specifically, the incorporation of a sound-designed, robust and reliable program to measure patient satisfaction, in a healthcare service, is necessary and has positive effects on patients, health professionals, and by extension to the healthcare system. Specifically, the evaluation of satisfaction aims:

- to provide the most objective information for a successful health service, which helps the management of a health organization, to improve the quality of medical and nursing, administrative and other support activities;
- to contribute to the understanding of the perceptions of patient-client and more specifically to identify and analyze the needs, expectations and desires,
- to strengthen the management, ensure the introduction of innovations,
- to enhance employee morale,
- to document different levels of work execution,
- to facilitate the process of evaluating the activities and generally be a strong tool for organizational development and strategic management for health organizations.

Additionally, the major advantages of a survey measuring patients' satisfaction are summarized in the following points [36; 37]:

- The satisfaction measurement programs, since they are continuous and systematic efforts of the organization, improve communication with the patients within the organization and increase the authenticity of measurement.
- The organization can observe whether the services, meet the expectations of patients, if the views formed by patients, by received care affect future decisions and preferences regarding the choice of health service providers. Moreover, the opportunity to study whether new actions, efforts and programs have an impact on patients of the organization.
- The important aspects of satisfaction are identified, which should be improved, as well as ways to achieve this improvement. Since the opinion of the patient is an important way for the evaluation and measurement of the results of the treatment and care received.
- The major advantages and disadvantages of the organization are determined, compared with the competition, according to the views and perceptions of patients. In other words, it is an important guide for management decisions and better resource management of health services [38].

- Motives are given to the agency personnel to increase productivity and its sense of responsibility for demonstrating high levels of performance on the satisfaction of the patient, since efforts to improve services offered, are evaluated by the patients-clients themselves . Therefore, that staff is directed to function more driven by the patients [39; 40].
- The cost of services is reduced and this contributes to the long-term resource saving provided that the patient is happy to comply with medical instructions, his recovery is faster and he has a shorter hospitalization [39; 42].

It is clear that patients interviewed for their opinions and feeling, thus, that themselves play an important role in shaping the services directed to them, feel important, a fact that has positive effects on their health restoration. Studies show that the process of collecting the opinions of patients can be considered as a therapeutic agent because patients feel they have been involved in making a decision and are more likely to comply with it and to follow [43].

Furthermore, the patient's satisfaction is defined as a variable that affects the effectiveness of care, since, as proved by related research there's a positive connection between patient cooperation and the level of satisfaction received by the provided healthcare [44]. A satisfied patient is more willing to follow medical instructions compared to one less satisfied, thus achieving even better clinical results, a faster recovery and reducing hospitalization time.

Staff must be trained in every possible way, in order to focus on the needs of patients [21]. The behavior and mood of the medical and nursing staff should be governed mainly by respect and civility, features which are as important as the technical support provided by the body health. Furthermore, reducing the waiting time is a very important parameter that plays a key role in patient satisfaction [45].

At the same time, a patient less satisfied, by the provided healthcare, is likely not only to bring himself and his family to a competitor, but also to spread negative remarks for the services of the organization, talking about the experience to nine to ten others who are relatives or friends. Furthermore, it is noteworthy that one out of eight dissatisfied patients will share his experience with more than twenty people, while instead a satisfied patient will share his experience with at most three or four people [40].

Therefore based on the rules of the field of marketing, it is understood that research on the views of patients -clients and thus the processing and assessment of satisfaction with the received health services, can be used successfully in promoting health services, providing a competitive advantage to an organization of health services, as it surpasses its likes [46] given that:

- It recognizes in time the requirements and needs of patients/customers and compares them with the capabilities of the organization and understands what the customer ultimately receives.
- It sets new goals for the staff to meet those needs.
- It foresees whether patients will follow the suggested remedies and if they will choose again the same care provider.

5 Methodological Approach to the Measurement Process of Patient Satisfaction

The measurement of patient-client satisfaction is basically a survey, which is designed to measure their judgment. The collection of the most and best information is the key input, which facilitates appropriately edited decision-making and results, which are characterized by a low degree of uncertainty and risk, but a high degree of clarity, consistency and accuracy. As so, it must meet certain limits. The boundaries of a survey can be distinguished as follows:

- **Time limits:** Each survey takes time to implement, which is proportional to its range, its organization and its requirements. Time is not only valuable in conducting research, but also in deciding based on the survey data. The validity criterion in decision making is essential.
- **Scientific methods and techniques:** A survey should be done with strict scientific criteria and methods, because despite the rapid scientific and technical evolution, due to which there is room for combining different fields of science, it is possible to present survey results with deviations from reality. In the case of patient satisfaction, which is a delicate and unstable state, this phenomenon is usual.
- **Purpose:** Each survey is not an end in itself but also a means to an end. Research is not a decision, but a help in making a decision, whose effectiveness depends on appropriate data processing.

The selection, design and results of research are based on the selection of suitable indicators that represent what is to be measured. These indicators are used to measure a particular property or activity. The choice and development of indicators is an iterative process that requires constant attention and flexibility. These indicators are used to measure patient satisfaction and can be divided into three categories:

- **Structure**, which includes the structural elements related to inputs, such as equipment, personnel, buildings and the physical layout of an organization.
- **Procedure**, which refers to activities undertaken by people within the organization to convert the structural elements into results. For instance, a nurse who dispenses drugs or transports patients to internal areas of the healthcare.
- **Results**, which are determined as the result of the structure and the process and include various indicators such as mortality rate and morbidity of patients [47].

The most common methods for collecting information from the patients are:

- **focus groups**
- **semi-structured interviews**
- **structured interviews**
- **open interviews**
- **telephone / postal surveys**
- **observation of participants**
- **direct observation**
- **self managed surveys and**
- **critical incident interviews**

Therefore, any comprehensive approach to assessing patient-client satisfaction should be governed by a combination of methods described, consistently.

Qualitative Methods of Patient Satisfaction Measurement

In a successful measurement method, the researcher gathers information by asking patients, through a variety of questions, to write or express verbally their opinion about the stimuli, their judgments of values and their reactions. Such questions could include, for example, either asking the dissatisfied patients to write impressions about how well they contacted with the health personnel, or to specify two aspects of their stay in a health care, which they liked most or least. In successful measurements there is field in the end for general comments.

A basic step concerning this manner of research is the analysis of written or oral comments. Therefore, mechanisms of complex systematic coding should be developed for the analysis of data, which will allow in turn the categorization and classification. Often quality data may be more useful than quantity, because:

- Patients may feel less committed when not restricted to a form of multiple choices. The elements of a quantity research may not be spelled out comprehensively to patients so they can not cooperate. Moreover, restrictions, imposed by the quantitative scale response can fail to represent the depth and intensity of the experience of healthcare for the individual patient. In contrast, quality comments often allow patients to more accurately describe what they feel in their own words.
- Patients may be more willing to give negative feedback through their own quality comments. In many researches the patient indicates quantitatively high levels of satisfaction with their experience and yet, the same quality comments are addressed in many areas, by which he was unhappy too. This contrast is driven by the fact that questions of qualitative research allow patients to express their own judgments of values and reactions with greater accuracy resulting in a response like "I know that the nursing staff did what it could, was very busy, but continually delayed my medication and this annoyed me " On the one hand dissatisfaction is received, but understanding as well. Therefore, the use of quality research questions allow patients' to express exactly their view, sometimes alleviating a negative comment.

The main objective of quality satisfaction research is to extract analytical information and additional clarification about the attitudes and opinions of a set of patients. The main characteristics of quality research focus mainly on the following points:

- responses of patients have no fixed form,
- the results of quality research are based, largely, on observation,
- the patient sample used is small, but an in-depth analysis of their behavior is made,
- usually, the generalization of the results is not possible.

Specifically, common examples of quality research are:

- **Interviews in depth:** This process includes personal interviews with patients of the organization, which usually contain general questions in the form of a non-structured questionnaire. Moreover, the answers given are of open type, if there is no predetermined questionnaire, but a framework with the main points of the interview. The timing of the interview is bounded, but relatively large (up to one hour) and each interview is treated as a distinct form of communication with the patient.
- **Discussion groups of patients:** This type quality research refers to groups of patients (5-10 people) with common characteristics, which openly discuss one predetermined topic related to health authority.
- **Comments:** In some cases, patients are not able to know their needs and expectations in advance. Therefore, this process is based on collecting quality information, which

derives from the observation of patients during acceptance / use of the health service. At this point we should mention that there is no strict selection among a quality and quantity method, for the approach of a satisfaction survey, since each category has a different objective and aims to retrieve different kinds of information. However, the two methods are used supplementary, during the implementation of a program to measure satisfaction. In general, every satisfaction survey should have the following properties [48]:

- 1) Reliability: The degree of stability exhibited when a measurement is repeated under identical conditions.
- 2) Validity: How well a survey measures what it sets out to measure.
- 3) Lack of systematic errors, such as systemic 'guidance' of patients to respond in a particular way.
- 4) Accuracy, the ability to detect a change in the attitudes of patients and calculating size of the error.
- 5) Meaning, whether the results of satisfaction surveys are important and logical and how "unconstrained" the information provided by patients is.

The key principles results of a satisfaction survey are oriented to the validity and reliability, mainly due to the systematic and the incidental errors which may arise and should be dealt with properly.

Quantitative Methods of Patient Satisfaction Measurement

Quantitative measurement of patient satisfaction is defined as the measurement of stimuli, judgment and responses of patients to the experience of health care through numerical representations. Quantitative methods for measuring the rate of patient satisfaction and usually follow quality research. This is justified since, as mentioned, through quality research the points of ailing health services that need further attention to a quantitative study of patient satisfaction are noticed. A quantitative method is the most frequent for the measurement of satisfaction, where responses are given via a scale. Therefore, this method is based on the collecting and analysis of information in numerical form.

Because most survey is based on samples studying, the existence of a random rate sample variability in results, which are obtained in this way, is inevitable. Because of this, the results of performing quantitative Environmental Research. These types methods are useful for getting answers to questions like "How many?". For example, the quantitative method would answer a question such as ' How many patients undergoing surgery are dissatisfied with the nursing care they received postoperatively; ".

Then the patients, using a scale of graded responses which are given by the interviewer, are asked to rank the features of the examination services. Example of this scale is as follows:

- very dissatisfied
- dissatisfied
- neither dissatisfied / not satisfied
- content
- very satisfied

Each of the above responses included on the scale can take numerical value (for example, 5 = very dissatisfied, 2 = dissatisfied), a value which is also the grade given to the patient in the examination department. Parallel, quantity method can be based on a more philosophical form of gauging to include the creation of multistage of elements, wherein

each element is assigned an individual score which is summed to create a final aggregate score.

Undoubtedly, with quantitative methods beyond the use of calibrated scales for retrieve results, additional conclusions can be obtained from the simple recording and studying of the measurements obtained. For example, measurements can be the number of patients who complained, the number of patients who stated that they were satisfied with the nursing staff or the number of people intending to recommend the hospital to a friend. Regarding the scales, four broad categories of scales used in the quantitative research methods can be identified [49]:

- **Nominal Scales:** Nominal scales are used for the classification of patients-clients, for example, based on the section under which they were hospitalized, patients in the general surgery department or pathological, and do not provide positive or negative evaluations.
- **Arithmetic (regular) scales (Ordinal Scales):** The numerical scales allow the researcher to discern a direction based on rating of the patients, indicating that a result is clearly higher or lower than another.
- **Ratio Scales or ratio ranges:** The calibrating scales introduce the zero point, which in this case represents the actual absence of a characteristic. Although zero is typically without meaning to ratings of behavior, it could be useful in other rating variables such as income, age, the time and formal education. The calibrating scale allows the researcher to correlate results with each other, not merely on the basis of the distance between them, but the scoring of one value in comparison to the rating of the other.
- **Scales intervals (Interval Scales):** The interval scales allow the researcher to articulate precisely how many measurable units separate two answers. Additionally, all points on the scale are separated by equal intervals. The only point that is not displayed in such a scale is absolute zero. The assumption done in this case is that the distance between "very satisfied" and "satisfied" is the same between "satisfied" and "Neither dissatisfied / nor dissatisfied", "dissatisfied Neither / nor dissatisfied" and "dissatisfied" and finally "dissatisfied" and "very dissatisfied." But this is an assumption researchers are doing, which in many cases is questionable. For example, researchers argue that the distance between "very satisfied" and "happy" is not clearly defined and is much greater than believed [50].

Most known scale of this kind is the scale of five point Likert. The basic advantage of these scales is that they are automatically translated into numerical values by conceptual labels. Ideal scales are those that offer something which approximates a normal distribution of points around an average. This means that results are arrayed so that exactly half are above the average and the other half below the average. The Likert scale is the most widespread and widely used scale in questionnaires and configuration shown in the majority of researches on patient satisfaction [31] advantages of Likert-type questions are that:

- ✓ they provide the same response options for all questions and
- ✓ they make the construction of a questionnaire easier

Conducting quantitative research methods consists of the following cases:

- to assess the degree of patient satisfaction in comparable sizes (percentages)
- to collect useful information from patients regarding the evaluation of health services and institutions.
- for recording information regarding real and objective events, such personal characteristics of the patient (for example age), characteristics of the health

organization (for example the number of beds a surgical clinic) and characteristics that define the structure of a service.

- to make comparisons between different periods or different health institutions, and when we want to predict future patient behavior, asking for example, if they would prefer to receive again health services from the same health institution.

Quantitative methods are used and are appropriate when the researcher raises questions of the following kind:

- How satisfied are the patients?
- Changes in the parameters of a service will affect satisfaction levels patients?
- Patients are more or less satisfied in section A with respect to the section B?
- Has patient satisfaction changed (for example in the last two years)?
- By which part of the service are patients more or less satisfied?

A basic method for performing quantitative research is standardized questionnaires which ask all those involved in research the same questions with the same sequence and using exactly the same words. Moreover, both completion instructions, and the form of responses are the same for all participants in research. The term "profile" is used to describe a variety of instruments for data collection. For example, Franklin and Osborne, define questionnaire as an instrument that consists of a series of questions and expressed views or statements, designed to elicit responses which can be converted into measurements of the variable, which is studied, in this case of satisfaction [51].

Using surveys is the most common method of research for the satisfaction of patients. Specifically, the one most commonly encountered is the use of composite structured questionnaires, which combine qualitative and quantitative dimensions of care [52].

The content of the surveys is mostly closed-ended questions, where choices of answers are predetermined for the respondent. This results in recording the answer by selecting one of the predefined answers, that best fits. Of course in many cases there are open-ended questions where the research participant is asked to provide a written opinion. Here we must highlight the main advantage of the closed-ended questions, which allow the comparison of responses, which is essential for the use of data that are obtained after a quantity survey.

Common examples of quantitative satisfaction surveys are:

- personal interviews,
- postal surveys,
- telephone surveys.

The limitations of a survey assessing patient satisfaction of a health authority, in quantitative methods of data analysis and statistical modeling, are summarized in following key points:

- This subject is approached not only as a measurement problem, but as a problem of analysis and interpretation of patient satisfaction. In other words, it is not enough for a health organization to know whether patients are satisfied or not, but methods and techniques that are used, should focus on the reasons which show a similar result.
- Information on the problem of assessing satisfaction should come directly from the patients of the organization. This makes it imperative to conduct satisfaction surveys and thus collect large amounts of data and use balanced samples.
- The use of multivariate analysis methods for the collection of information is necessary, given that customer satisfaction depends on a number of factors or service profiles.

6 Problems in Patient Satisfaction Measurement

The attempt to measure patient satisfaction makes many problems obvious [53]. First of all, in a process of valuing satisfaction occurs a personal and subjective nature of assessments, from the perspective of patients, resulting in opinions on specific care services to vary. Therefore, different and unique judgments of patients reflect their personal situations and backgrounds, which can not be objectively measured.

Furthermore, the level of satisfaction, which is recorded, may reflect on both knowledge and expectations of users, rather than quality of health service. Consequently, users with limited knowledge of the opportunities and low or unclear expectations of service quality can show high satisfaction even if they have been provided with poor quality care. Similarly, patients' that could be characterized as passive consumers of healthcare, have minor expectations. Therefore, a satisfied patient-client may be someone who has no opinion about anything or anyone who uncomplainingly relies on recommendations of staff.

Therefore, to measure satisfaction, it is necessary to understand how patients, each one separately, assess the care and thus make judgments. Research shows that consumer reviews are based on attitudes of physicians [65], but in general little is known about the mechanisms by which opinions on satisfaction are formulated.

Additionally, there is need to separate the feelings of satisfaction or dissatisfaction with the provision of services, or the process of care, from those related to the result of health care. The creation of metrics for evaluation of this view is complicated due to the interrelation between the results health and satisfaction with care. This means that data on satisfaction can not be interpreted independently of the information on health [54].

Meanwhile, the perceived dissonance theories (cognitive dissonance) require that people will not appear dissatisfied with the services that they have chosen on their own to use, because it indicates an inconsistency in behavior. Further complications in the measurement of satisfaction arise because patients may express different degrees of satisfaction from their personal care by extension of the healthcare system [55].

7 Benefits of Patient Satisfaction Measurement

The following benefits are shown by the measurement of patient satisfaction from health services:

- Medical benefits: early diagnosis, show a decrease in pain and prevention complications, procedures which in many cases prolong hospitalization and shoot the cost [56].
- Psychological benefits: satisfied patients are led to reduced hospitalization time and faster recovery, while many researchers are equated with self-healing. This feeling of trust that develops in satisfied patients, is based mainly on the sense of control of the situation and participation of their own, and the possibility of expression of opinion about the quality of health services. Therefore, even the search for the patients' opinion, can be considered a therapeutic agent, since it increases satisfaction and encourages active participation [56].
- Improvement of the quality of services: When measuring patient satisfaction the multitude of information is very important, but more important is the evaluation and its realization, as they can contribute to improving the quality of services.

More specifically:

- ✓ Such measurements feed back into the system and help redesign by providing information to management for problematic areas of healthcare in order to take corrective measures, which either directly have a positive effect on patients' health, or in the long term increase the level of patient satisfaction [56].
- ✓ An attempt to address patient satisfaction can be in turn a way to estimate the performance of the agency's staff. On the same time from patient satisfaction data can be obtained useful data for attitudes and behaviors of staff in order to take appropriate corrective interventions [56]. Therefore it gives rise to management of any organization of health services to reward or to direct the staff to improve the services.
 - Comparative Advantage: Finally, the measurement of patient satisfaction as a tool evaluation of staff performance, gives a comparative advantage in this organization providing health services if:
 - ✓ recognizes the needs and requirements of patients/customers
 - ✓ identifies any gaps between them and the final service received by the patient/customer
 - ✓ detects and sets new goals for staff and patients.

8 Design of Powerful Electronic Surveys

To learn patients/customers' opinions and criticism, the online questionnaire is the most typical tool. Designing an efficient questionnaire which fulfills its purposes is an art which has its specific rules. Below is a set of 7 tips that help to design powerful electronic questionnaires:

1. The wording of questions in a questionnaires' design should be not only clear but also in plain language, free of specialized acronyms which can be unfamiliar to most respondents. Clear and plain wording is essential to convey the question message and purpose.
2. For a productive electronic questionnaire, the questions designed should be unbiased, in order to elicit the opinions of respondents and not mislead them by the use of leading words. The wording chosen should be reviewed before a questionnaire is launched online, to replace loaded or leading words or phrases.
3. The overall approach to the design of an electronic questionnaire should be the funnel approach. The questions in the beginning should be the general questions, and the specific questions should be placed in the end. Thus general questions serve as introduction, and also as a sort of warm up for the specific questions which follow.
4. When designing multiple choice questions as part of an electronic survey, the principle of mutual exclusiveness of the response categories should be observed. This is mandatory for enabling respondents to make their clear choices.
5. Designing specific questions is very important to enable respondents to understand the question message promptly and clearly. For example, when asking respondents whether they do certain activities on a regular basis, the exact frequency meant by regularly is not clear, there is the need for more specific wording to enable respondents to understand and reply accordingly.
6. In the design of an online survey, avoid including questions on respondents' intentions for the future. Such predictions tend to be inaccurate most of the times, so they do not offer reliable data.

7. Finally, if the questions in an electronic questionnaire are very broad, non directed, they can provide respondents with excessive latitude for their answers.

The design of an electronic survey is really an artistic activity, and the questions designed should be reread and edited to conform to the rules predetermining the effective communication of clear messages which invite respondents' opinions and suggestions. Pretesting questionnaires prior to launching them can also help to assess their efficiency.

9 Benefits of Electronic Surveys

Knowing what patients think and how they perceive the services rendered to them is a growing necessity in modern healthcare management. Among other key factors, patient satisfaction is of utmost importance for credentialing and quality assurance. Patient satisfaction is a recognized instrumental component in monitoring a healthcare facility's quality of care in relation to costs and services offered.

There are multiple ways the patient can be surveyed, including through the mail, online, and by phone. A new way to reach more patients and increase the number of surveys returned is electronic surveys. Practices can collect patients' e-mail addresses and distribute the survey a day after the visit. Electronic surveying lets the interested parties survey so many more patients, and as a result, the cost per returned survey is significantly lower, and the ability to get feedback faster is greater. Electronic surveys can help the interested parties to:

- Support of the ongoing service quality delivery program,
- Gather data on average wait per patient, admission/discharge satisfaction, payment issues, patient/physician interaction, patient/nurse interaction, medical testing/treatment satisfaction, and other important issues,
- Develop understanding what motivates patient satisfaction and determine factors that lead to patient dissatisfaction,
- Improve knowledge of patient expectations,
- Identify areas for improvement,
- Fuel the existing management information system with current needs and wants,
- Find out what prompted a patient visit and why patients chose your facility,
- Get input for patient profiling,
- Identify opportunities for new or extended services and product offerings,
- Monitor staff performance,
- Conduct patient assessments with and without instant result presentation.

10 Conclusions

Improvement in selected aspects of health care delivery through quality assurance and outcome assessment has been driven by political expediency. While this is important, a 'bottom up' assessment of patient satisfaction seems preferable if service improvement is to be translated into outcomes meaningful to patients, especially improved quality of life. Patient satisfaction is considered by some to be of dubious benefit in facilitating the process of clinical care, as patients have no specific clinical expertise and are -perhaps-readily influenced by non-medical factors; in addition, there are few reports on the

reliability of satisfaction surveys. Nevertheless, satisfied patients are more likely to comply with medical treatment and therefore ought to have a better outcome. Patient satisfaction is related to the extent to which general health care needs and condition-specific needs are met. Evaluating to what extent patients are satisfied with health services is clinically relevant, as satisfied patients are more likely to comply with treatment, take an active role in their own care, to continue using medical care services and stay within a health provider (where there are some choices) and maintain with a specific system. In addition, health professionals may benefit from satisfaction surveys that identify potential areas for service improvement and health expenditure may be optimised through patient-guided planning and evaluation.

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