ASSESSMENT OF PATIENT SATISFACTION AND EXPERIENCE THROUGH CORRELATION ANALYSIS AND KANO MODEL

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Thesis

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ABSTRACT

In pursuit of service excellence, patient satisfaction survey is widely used by hospitals and healthcare centers to measure their service levels during the course of healthcare delivery. While the traditional approach of interpreting the survey results through summary statistics and trend analysis may help identify the performance of service aspects related to patient's experience, a better understanding of the cause-effect relationships between patients' ratings of these service aspects and of the overall service is needed for the strategic allocation of resources for continuous process improvements. This research proposes a novel approach for patient satisfaction assessment by combining correlation analysis and Kano model. A sample 100 patient satisfaction survey results from a community hospital in Northeast Ohio was obtained and analyzed. Through the use of correlation analysis and Kano model, the main effect of the performance of each service aspect on the overall patient satisfaction was quantified. Furthermore, insightful information was discovered on which service aspects were basic service, which were performance service, and which were excitement service for patient's experience. These findings can help healthcare system administrators prioritize actions for service level improvements.

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CHAPTER I

INTRODUCTION

1.1 Research Motivation

The motivation for this research emphasizes on the importance of patient satisfaction in healthcare delivery system. In every business it is very vital for the business owners to build a reputation based on great customer satisfaction, excellent service quality and etc. Since the implementation of Affordable Care Act (ACA), changes have been made by Center for Medicare and Medicaid Services (CMS) by tying Medicare reimbursements to patient satisfaction scores. This has made hospitals nationwide to focus more on assessing patient experience. This requires a huge commitment both from hospital management to patients. It not only requires the commitment from nurse personnel, providers and staff; but also it takes effort from a program, quality measuring system, engagement of providers, and communication plays a huge role in here. Specifically, in hospitals and health system patient wants to be treated respectfully, starting from their admission how hospital staff greets them, how well nurses or doctors introduce themselves to help the patient, answering patient's questions carefully and acknowledging them for their visit; needless to say each one of these steps must happen with respect and understandable language.

Patients' perceptions of their care, especially in the hospital setting, are not well known. Data from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey provide a portrait of patients' experiences in U.S. hospitals.

The motivation for this research is in addressing the gap between current types of patient satisfaction analysis and how effective the result of these studies are. The current of type of analysis conducted in the targeted health center shows only simple type of analysis which

just by showing these analysis can cause trouble for stakeholders because implication of changes requires them to spend the budget and perhaps changing how some processes are done in the procedure. On the other hand, lack of variety of methodologies in analysis encouraged me to apply different approaches to explain the data and survey results.

1.2 Research objective

The primary focus of our improvement efforts are targeted in addressing and improving patient satisfaction analysis. The purposes of this research are as such:

- Providing correlation between dependent and independent factors.
- Validating the results through the help of patient's feedback which is neglected in current scenarios.
- Is the current type of analysis sufficient or there could be an alteration in the provided analysis to help serve patients better.

CHAPTER II

RESAERCH BACKGROUND AND LITERATURE REVIEW

2.1 Introduction to Healthcare & Patient Satisfaction

Studies on patient satisfaction are growing widely in the United States. Consumer satisfaction is not always backed by extensive methodologies, well supported ideas and customer satisfaction models [1].

In manufacturing system encounters with customers, after each interaction between a provider and the customer, the company asks for feedback. For example in Toyota after a customer takes his car to an auto shop, the company will ask the customer through an email or via phone to rate their experience. In this case customer is asked to rank both excellence of service (how customer was treated), payments (if the customer was not explained well about the cost and thinks the cost is expensive) and quality of result(how well the problem is solved). Each one of these surveys are reviewed in details by Toyota corporate not only for future improvement services, also they hold any of the Toyota franchises responsible for low ratings and bad customer service. Despite the big magnitude of manufacturing industry, the complexity of health system is a lot more in fact. The difference between healthcare system and car dealership company is, in health system the consumer is not medically capable of understanding a right diagnosis [2].

Hospital investors always are concerned about economically effective facilities where they can convey a great and efficient service. During patient stay at a hospital workflow pairs both hospital shareholders with patient safety and the quality of care patient is receiving. Needless to say applying new changes and improvements can take period of time before implementation where stakeholders have different opinions but consequently these can be both a challenge for stakeholders as well as a new opportunity to provide a service while gaining more profit [3].

In order to move forward hospital managers and medical specialist need to consider key factors such as; quality of care consumer is receiving and specialist practices that produces proficiency and competence [4]. Achieving above goals asks for involvement of multiple categories where each one evolves from another factor. Knowledge, gaining experience from previous events, data, evidence and wisdom deal with future projects and design [5].

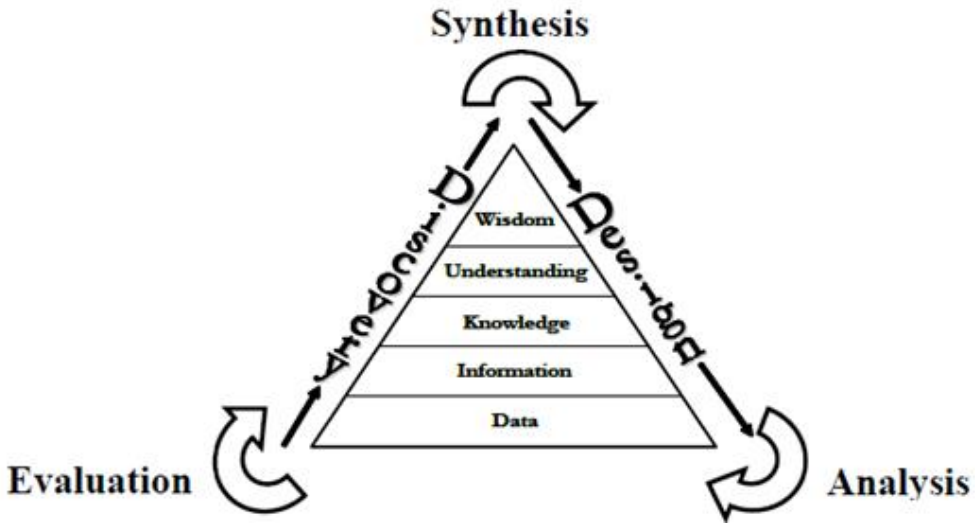


Figure 1. Design and Discovery model (from R.L Ackoff' 1989)

Analyzing data enables industry leaders to find the correlation and data pattern for more profound structure. One of the biggest problems in implementing new transformation and developments is the persuasion of the managers and leaders which make assumptions based on their experience. However, these thoughts are not always wrong or right but they hinder the process of improvements [6].

The fact that how well the U.S healthcare system provides consistent basic quality standards is widely unknown. Several studies have pointed out critical shortage in the system. People need to be well explained about their medical situation, receive best possible care that matches their needs and is built on best decision making [7]. Patients often feel that they are affected by the wrong doings of the health system and these bad experiences could lead to disappointment and failure for a health care provider. U.S health care has a potential to have a significantly better outcome and satisfaction but it requires to fill the huge gaps in between [8]. Science and technology are changing constantly and making changes in healthcare delivery system too. Accepting these alternations has not always been very easy and quick and it can cause damages to providers if they fail to attain the standards, lack of delivering today's science and technology can lead to failure to prepare for future advancements that will arise in next few decades [7].

It is evident that changes do not only happen in an industry, it also affects the customers. American's public healthcare necessities have also been modified over the past few decades; they are living longer partially due to improvements and developments made in healthcare system [9]. On the other hand, the longevity of people can result in increase of chronic conditions such as heart disease, diabetes and asthma which are primary cause of

severe sicknesses and possible deaths. Complexity of health delivery process and patient hands off processes slow down the procedure even more and this makes the hospital managers to have lots of waste in their resources, misplaced information and other harms that can cost stakeholders considerably. In order for stake holders to be able to evaluate their service, Hospital Quality Alliance (HQA) has created Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS or HCAPS) survey as a measurement resource. In March 2008, it was the first time that HCAHPS state data were released. The data that are obtained from HCAHPS enables almost every one related to health system including customers, providers, insurance providers, HQA and etc. to get data, analyze them and evaluate the process. Analyzing these data helps providers to observe patient experience. Variety of the question category such as: doctor and patient communication, nurse and patient communication, hospital environment and pain management helps to provide wide and profound analysis [10].

2.2 Patient Satisfaction

The growth in studies conducted about physician-patient communication helped to highlight consumer's perception more determinedly in healthcare system and researches. Research conducted by two sociologists Parson"The Social System" [11] and Hollender in early 1950s seized many attentions in this area [12]. Despite the struggles these researches had in the beginning of their investigation, people soon realized the benefit of the possible developments and supported the idea later. Accordingly, many revisions and investigations took place to explore the interaction between provider and customer. To measure patient's satisfaction a questionnaire was made to discover the links between users and providers.

The relationship with compliance has been used to be disputable about the prominence of satisfaction as a necessary health service goal. Since, high quality results are reliant on compliance, which in turn is dependent on patient satisfaction the ladder has come to be seen as a perquisite of quality care. Consequently, this has helped legitimize the importance of patient's perspective among health care professionals who are primarily concerned with clinical result. It is possible that discovery of consumer satisfaction-compliance connection reinforced the customer movement in its demand for customers to be viewed as the crucial figure of accountability in all community services. Concurrently, the rise in approving in consumers value helped to support future researches based on patient satisfaction. In this case it is evident that despite the lack of interest and support from medical professionals to dispatch more influence and control to patients, the development or failure of providers are already in the hands of patients. If a patient is not pleased from the care he has received, he would refuse to follow doctor's prescription and might not show up to the forthcoming appointments. While the consumer movement has pressed for organizational and structural changes the guiding principle has been a belief in the value of the consumer's opinion. The result of this pressure on the health service is obvious in the shift in the definition of the quality utilized. If the patient is to be served then he or she must have a voice in the process of medical care. Satisfaction has more been seen a genuine and anticipated outcome in itself. Not solely as a means of improving compliance. It has become an attribute of quality; a legitimate health care goal [13].

Customer fulfillment could be included in Quality Assurance valuations as a factor in quality of care in a form of valid and desired result and this can be achieved simply if the patient is satisfy with the service he receives. This satisfaction is not just about the

treatment of the illness and it goes beyond it. Quality itself should be in coherent relationship with patient satisfaction. Donabedian explains his theory as “patient satisfaction may be considered to be an element in health status itself” [14]. The surge in evaluation of public sector services can be the outcome of growth in satisfaction surveys. On the other side, the increase in evaluation of surveys are relatively tangible in two main foundations; primarily, an aspiration for healthcare givers to provider a greater service which is a result of increase in demand; and secondly a need to measure proficiency accurately in a service sector industry demanding constantly increasing resources.

2.3 The presumed definition of satisfaction

Customer satisfaction is an essential factor to gauge the quality of care since it supports providers with information and insight regarding the facility and service they provide to users which points out both their weaknesses and strengths. Accordingly, measurement of customer satisfaction is a prominent instrument for researches, management and development [15].

One model in satisfaction model is the first assumption. This is when the customer expresses gratitude conditionally; meaning satisfaction is expressed only if prior needs of a process are met. Consequently, significance of satisfaction as an attribute of quality is dependent on level to which it actually is the product of the latter. While in most of the studies related to patient satisfaction researchers have tried to find a socio-demographic relation, Locker and Dunt took a different approach to investigate socio-psychological philosophy of satisfaction. They considered customer satisfaction in healthcare as an encouraging feedback which can be both related to customer’s level of understanding of

received care and assessment of the received service [16]. Factors can be considered as individual extents of healthcare (cost effectiveness, comfortability, access, etc.). In another study, William Brian points out that belief strengths and assessment of levels of care are two key pieces for valuation of patient satisfaction [17, 18]. Lawler in his research proposes three theories to explain value-expectancy. Discrepancy theory establishes the idea that satisfaction has been identified by Lawler [19]: discrepancy theory, fulfillment theory and equity theory. Discrepancy theory posits that satisfaction is the result of the perceived discrepancy between that which an individual desires and that experienced as a proportion of those desires. Authors vary in their meaning of 'desires'; some treat the latter as 'expectations', others as what is 'important' and some as what 'should be'. Most satisfaction studies have implicitly used a discrepancy approach [2, 23]. Fulfilment theory is to be found implicitly in a number of studies [24, 25].

2.4 Contributing factors to satisfaction

Expectations develop constantly as having an important role in expression of gratitude and satisfaction in any industry [19]. Among several researches that were conducted in late 1970s and early 1980s about customer satisfaction, the idea that Stimson and Webb in 1975 developed was among the first theories that suggested satisfaction is related to the awareness of the benefits of care and the extent to which these match with patient's expectation [20]. The fundamental basics of expectation are mirrored in multiple definitions of patient satisfaction and are supported by many research evidences. For example, Abrmowitz found that not only patients can have different satisfaction level for variety of aspects in healthcare, also their expectations and satisfaction with explicit aspects

of care plays a self-determining role in foreseeing patient satisfaction [21]. Since, patient satisfaction is considered as an attribute in Quality Assurance, as a result it is appealing to assume that high levels of reported satisfaction is correlated with high levels of quality of service. However, it is essential to consider always that expression of gratitude should be taken in the form of some understanding of the foundation that underlies those terms rather than being taken at a main value [16].

As healthcare consists of several aspects such as nursing, physician, environment, facility and etc. in the nursing aspect, many of the ideas dispute with the idea that satisfaction can be associated with quality of nursing care [21]. Some researchers claim that other than nursing quality, a patient's quality of personal life is influenced by environmental social, informational aspects that can effect on level of satisfaction a customer expresses while receiving a service [22]. Diverse level of satisfaction can show different perceptions on nursing care quality rather than different levels of satisfaction within a same experience. On the other hand, for a doctor-patient interaction; the more a doctor's performance meets a patient's expectations; it is more likely that patient will be satisfied with the doctor. This theory was strongly supported in Abramowtitz study; patients with less expectation are more likely to be better satisfied [21].

2.5 The importance of patient satisfaction surveys

Surveys such as HCAHPS have become an inseparable part of patient-hospital visit these days. The data from these survey questions relating to factors like physician bedside manner, if a patient is willing to recommend this hospital to other people, level of noise on the floor during patient stay and etc. are some of the questions that are very determining for a reputation of a hospital. Two of the question in the survey; how does a patient rate the hospital and how likely they are to recommend it to friends and relatives are the two most important questions that hospital management considers for hospital quality evaluation [23]. Since patient can deliver feedbacks on how well the physicians and hospital staff communicated with them such surveys like HCAHPS are very useful not only for doctors also for hospital stakeholders as they can work on their weaknesses and improve their facilities, tools and strategies. Currently, the wisdom some of the doctors have these days is to keep patients satisfied even if it requires prescribing pain medication, unnecessary admission or scans. According to a study, 46% of doctors have reported that having an experience of encountering with at least one patient who is asking for needless test runs. More than half of the patients in the study admitted to ordering pointless and needless tests when faced with persistent and difficult customers – even though they have advised otherwise or explaining that running tests and prescribing medicine is unnecessary, Moreover, for those doctors who have to break a bad news to family or relatives of a patient(for example, smoking can aggravate patient's asthma) there is a chance that physician is not going to be ranked very high for patient satisfaction [23].

2.6 How to develop patient satisfaction score by using data

It was more than 10 years ago when Cleveland Clinic started giving more credit to patient satisfaction score. CEO of Cleveland Clinic, Dr Cosgrove developed an administrative principle to put customer first in the process. He continues about the process “The reason we started down this path of putting patients first was because we knew our patients had choices for their care. For example, half of our heart patients are from outside of Ohio — they have plenty of other options for their care. Because we wanted our patients to continue to choose Cleveland Clinic, it was important for us to get service right”. The mission of Cleveland clinic throughout the process is to make sure that they are providing the excellent service to the customer. This requires a tactic which includes behaviors and tools that helps patient’s experience [24].

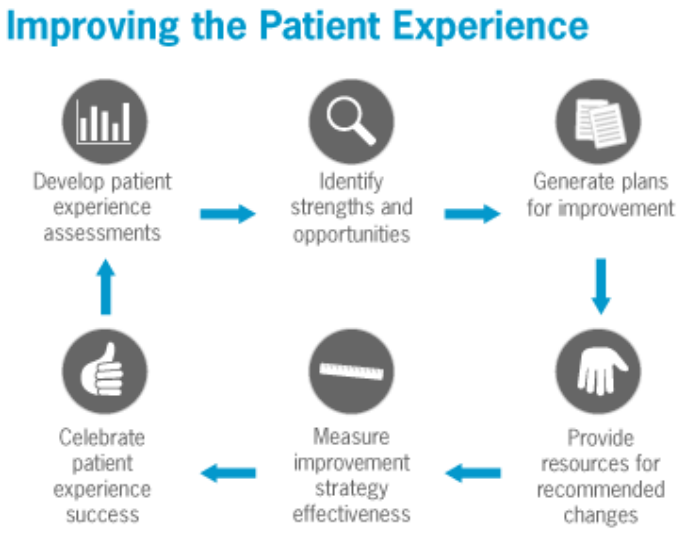


Figure 2. Cleveland Clinic model for improving patient experience

2.7 Developing a quality-excellence method by analyzing data

In 2009, Cleveland clinic's patient satisfaction score was lacking comparing Cleveland clinic data with top hospitals in the US such as Mayo Clinic, The John Hopkins Hospital, Massachusetts General hospital proved that Cleveland Clinic was lacking patient-doctor communication [25, 26]. Based on a research conducted in Cleveland clinic; respect, good communication between staffs and happy employees throughout the patient stay are the main three concerns that patients have. In order to discover these main concerns, Cleveland clinic had hired external teams to facilitate robust quantitative and qualitative examinations to find the above concerns.

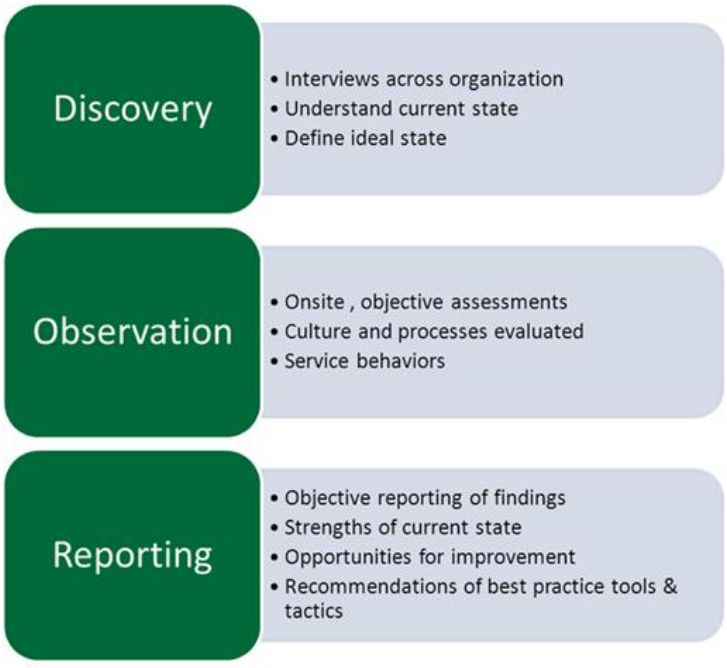


Figure 3. Patient experience Assessment in Cleveland Clinic

Dr Cosgrove (Cleveland Clinic's CEO at the time) adds on that they were shocked by the result of the studies and how massively the outsider team helped them to find these concerns by digging into data immensely [24-26].

Each of the concerns mentioned above are key factors in patient perspective**.** Patients expect physicians to treat them with respect and to participate in a conversation with them in personal level. Although, patient's anticipation is in contradiction of what doctors have learned, since they were thought to be unemotional, however, building this connection is very crucial for the patient so that they can trust the doctor even more. Since patients are not medically professional they take the communication between doctors and nurses as an attribute to assess the quality of care they are receiving. For example, if the doctor visits the patient in the morning and discusses patient's problem with them and a few minutes after that, nurse talks to the patient and does not know how to answer patient's question this is perceived as deficiency in communication between the staff. Customers like to see happy smiling faces when they are receiving a service, in healthcare also patients are more satisfy with providers who seem happier and approachable. If a physician or nurse talks to patient and seems to be in a hurry or with an angry face, patients is more likely to not to ask questions and will have lesser contribution with the healthcare givers since they do not seem approachable [24].

All along, Cleveland Clinic stakeholder's prediction was, terribly long waiting times is the reason of low customer satisfaction, after the research and study of data they realized patients value staff-customer communication and respect a lot more. Hereby, hospital management started training the staff in emergency department (ED) to communicate with each of the customers during their waiting time, this can include janitor starting a simple conversation and greeting with a patient or asking if they can help them anyway, this massively helped Cleveland Clinic to have a higher patient satisfaction [24].

Throughout experiments and studies, one of the biggest barriers in moving forward are wrong predictions and assumptions. In the beginning after we realized the low satisfaction of the customers, we asked ED leaders what they assume could be the biggest contributor to lack of satisfaction, their response was “long waiting times” however this assumption was rejected later [24, 26].

Figure 4. Scale of importance for Patient Satisfaction in Cleveland Clinic

In order to have a continuous improvement it requires the organization to put the customers first. Analysis of data massively helped the management to show what the important factors are contributing to patient satisfaction [27].

Dr James Merlino, Chief Experience Officer of Cleveland Clinic adds on that however our hospital is not where our mission is, but Cleveland Clinic is at 67th percentile for all hospitals which report on their physician-patient communication scores. The progress has been amazing and has helped us to accomplish a lot, but we could not achieve this without analysis of data [24].

Figure 5. Patient satisfaction dashboard visualization of Cleveland Clinic sample

According to the figure above, number 1 shows the automated integration of HCAHPS survey data. Average monthly scores are shown in number 2. Number 3 represents performance vs. goal measures. Average patient satisfaction scores trended over time are displayed in upper right corner. Detail results are at the bottom of the figure [24].

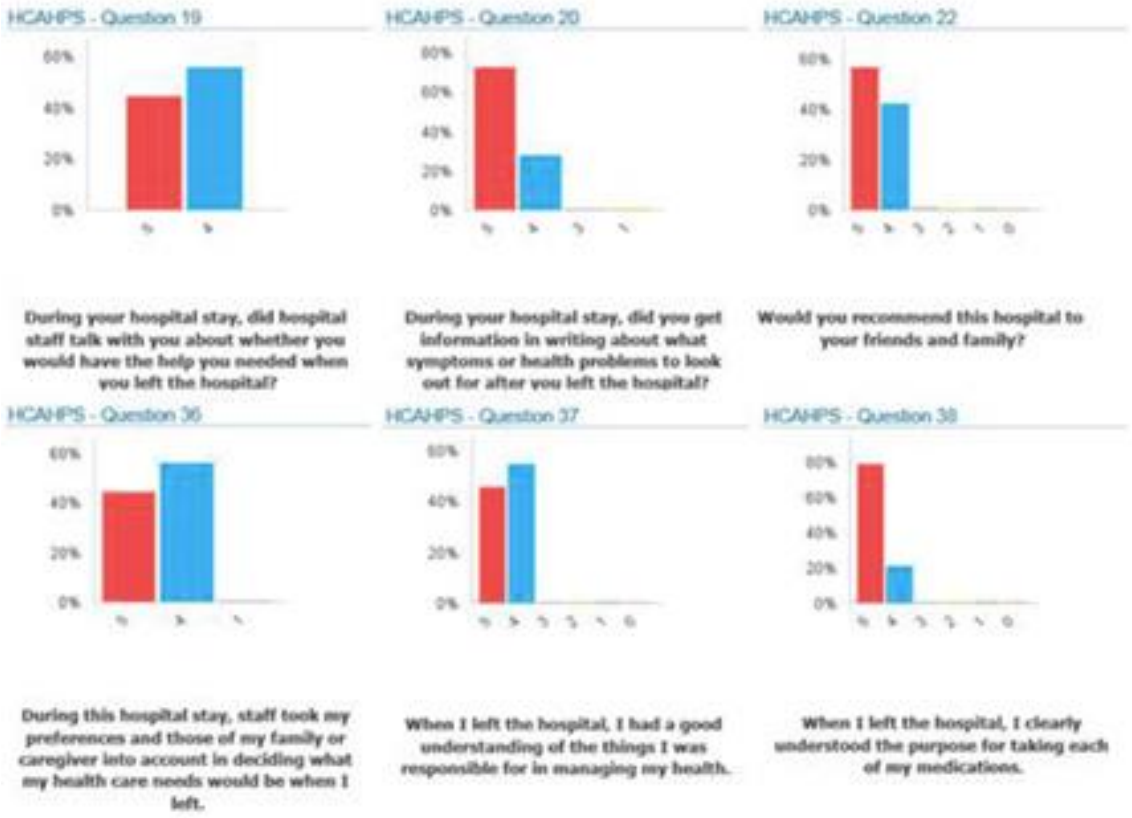


Figure 6. Sample of Population health – Heart failure surveys

Graph above is an example of HCAHPS result in Cleveland clinic. Displaying and analyzing data differently helps organization to realize customer's needs and eliminate wrong assumptions and thoughts. Nevertheless, in some cases it might be impossible to completely eradicate the problem but it is very possible to minimize the negative effects of it in that matter, the educated and professional way to reach this level is to investigate the data more deeply [27]. A team of intelligent experts in office of patient experience in Cleveland clinic investigate the data in surveys; they also offer a survey education whilst collaborating with leadership teams to disclose feedbacks on surveys and help improve patient experience [28].

Chapter III

Methodology and Kano Theory

Organizations and industries must emphasis more on data collection, understanding information, and gathering requirements and finding customer expectations. Once the adequate products and service are provided the organization should control and come up with the best reasonable technique and methods that suits customer satisfaction. There is a deficiency in finding the relation between consumer satisfaction and quality of service or products. In healthcare, customer satisfaction can be crucial basis of the quality of care or it can be merely result of treatment [29, 30]. In order to distinguish the likely effects that customers can play in connection with health services we will take a look researches that involve studying behavior of consumer satisfaction.

3.1 Comparison of customer expectation vs customer likings

Throughout the years there have been several theories attempting to explain behavior of customer satisfaction. In 1973, Rolph Anderson developed the theory of unconfirmed expectancy, which claims that expectations are one of the most important factors in customer satisfaction; level of gratification is very dependent on degree of provided care while customer constantly compares the surrounding facility with his perception; the larger the gap between the expectations and likings the greater will be customer's gratification or dissatisfaction, depending on direction of discrepancy [30]. Expectations are explained as set of views that consumer has developed over time which can be perfect, too specific or

unrealistic. The gap between expectations and preferences grows bigger when there are misconceptions that can be held in relation with areas that customers does not have much knowledge about and demands more service and facilities which are often hard to meet [30, 31].

Furthermore, it was discovered that customer-oriented organizations are significantly superior to predict the changes and behaviors of their customers and therefore they can better meet their consumer's needs and expectations. Recognizing in advance what are the meaningful values for consumers, collecting data and analyzing data based on feedbacks customers give on perceived products helps investors to meet customers' needs and maintain long-term relationship with their customers and generate benefits for the organization [32].

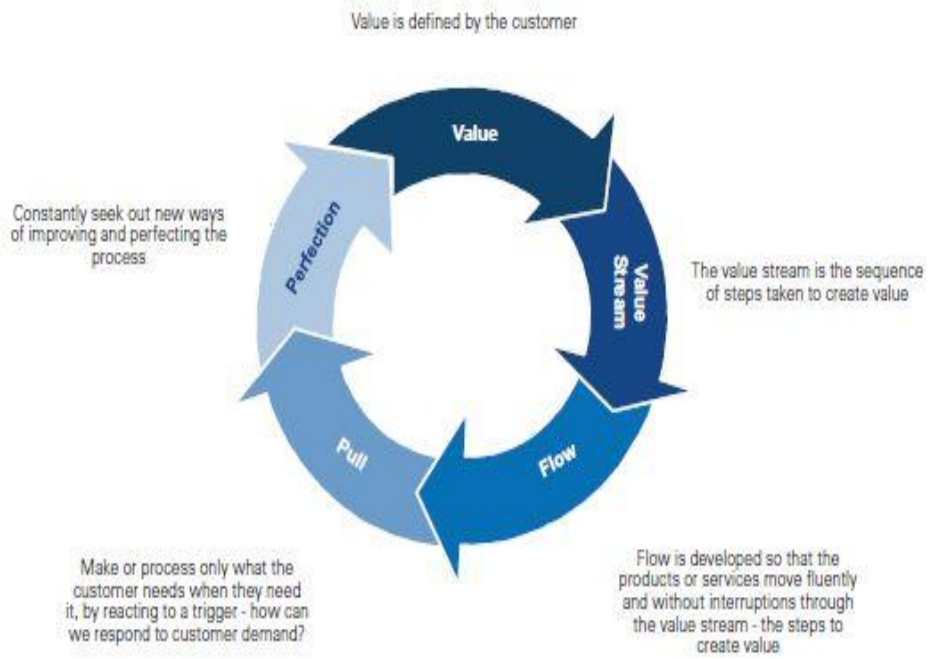


Figure 7. The value of customer voice

In health services, service quality and customer satisfaction are known as key attributes to customer loyalty [33]. Any health care industry should focus on continuous quality improvement with connections to customer's perceptions of service quality to detect flaws and strengths and come up with reasonable strategies. Significant differences between expectations and preferences in healthcare leads to different design strategies in health services [34]. In 2004, Meltzer pointed out that the necessity of satisfaction assessment as a sign of service performance and thus it can help the upcoming status of organization since quality of service is a vibrant factor [35]. Even though many people try to avoid getting sick by taking precautions but getting ill is inevitable from time to time for people, subsequently, they need proper hospital treatment and medicinal prescriptions. The efficiency and effectiveness of health care services are determined by doctors, nurses, updated facilities and equipment, time management, responding to patient's needs and etc. while providing the best possible health care services [36].

Strategic meaning of patient's satisfaction has been comprehended by hospital management including healthcare businesses like in other industries during a past few decades.in order to fill the bridge the hole between customer's preferences and expectations customer satisfaction must be more focused on; as Matzler explains in his theory that satisfaction assessment is growing significantly among organizations as a means of performance evaluation for services and future of particular organizations [37]. Controlling performance and attribute characteristics can lead to higher service quality and consumer satisfaction. Since not all the factors are contributing to enhance patient satisfaction it is imperative to learn what effective elements are in patient experience which can influence patient's satisfaction [38]

3.2 Kano Theory

Kano theory illuminates how excellency of providing features can change degree of satisfaction for customers. This helps to understand how consumers progress, asses and distinguish quality factors and concentrate more on characteristics that are more contributing towards customer satisfaction [39]. According to researches related to Kano model, this theory is useful for:

- Continuous development of service quality ;
- Defining client gratification
- Manufacturing and distributing of services;
- Analyzing the characteristics of product and facility;
- Designing products and services

The model demonstrates that satisfaction and dissatisfaction are two self-determining concepts in the mind of the customer and must be measured distinctly. Kano concluded that the connection between presentation of need and satisfaction or dissatisfaction as experience is not certainly linear [40]. One of the challenged manufacturing enterprises have had always was to find a way to discover customer behavior which by using this theory can recognize customer's needs to succeed in market place. Analysis of customer needs data is a significant task with focus on understanding and analysis of voice of consumers that can explicitly shows what are customer's need. There are three main issues that analysis of voice of customers highlights generally [41]:

- Requirement prioritization
- Requirement classification

- Recognizing consumers likings

In fields of marketing, psychology, social sciences and health care there have been several ideas attempting to explain potential factors that are contributing towards customer satisfaction [42, 39]. Professor Noriaki Kano at Tokyo Rika University developed the Kano model which attracted more attention [42]. The model is used in the field of marketing to carry out market studies for the launching of new products and services to show interaction between consumers and producers as illustrated in figure 8 [55, 53].

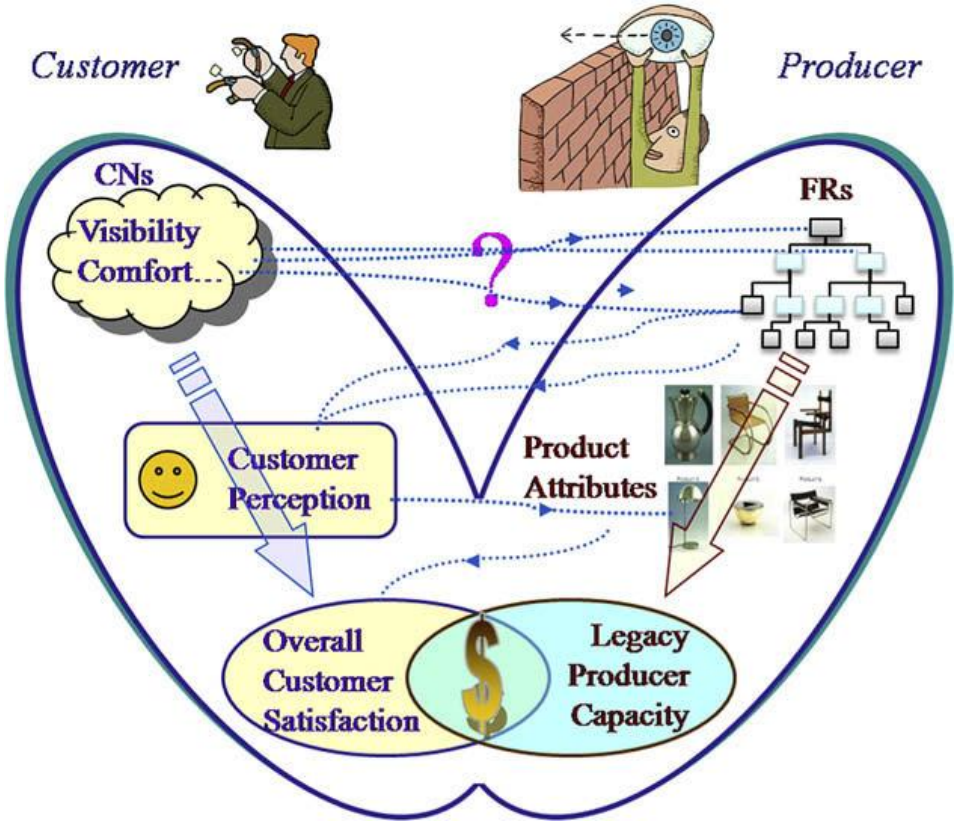


Figure 8. Customer – producer interaction in product value chain

Generally, business success is accomplished by bringing closer customer satisfaction and legacy producer capacity which can be either achieved by expanding producer's capacity to

match with customer's needs or by educating customers to learn limitations of producer's capacity which is less likely [44].

Usage of Kano model has spread out in many industries due to a fact that it provides both theoretical aspects and also operative methodology for studying not so much the area of expectations as that of preferences, which has received less attention in studies on the factors affecting satisfaction [45]. Based on customer's survey, Kano can develop great interest on distinguishing behavior of customer satisfaction and how it can alter based on customer preferences. This model which is fairly new in health care services relies on two main models; one dimensional and the two dimensional models.

3.2.1 One-dimensional model

This concept of Kano exemplifies the expression of 'more begets more, and less begets less.' In cases of continuous improvement, the one dimensional model declares that in any given service level of gratification in consumers is directly proportional to the specific quality factors. The one-dimensional relationship between customer gratification and presence or lack of a specific quality element can be clearly illustrated in the one-dimensional concept of Kano model. Generally, customers express their happiness or dissatisfaction about the received product with reasons, this helps organizations to sustain and keep improving strengths to increase satisfaction and reach higher satisfaction ranking. For example, in healthcare industry if a clinic has low waiting time and physicians visit patients in a faster phase comparing with other offices on average this can significantly help the clinic to have a high satisfaction rating [46, 40].

The diagram below shows the one-dimensional type of satisfaction conduct. The existence of this factor to a certain sufficient degree can make customers satisfy and its nonappearance or presence in inadequate level can cause customers to be dissatisfied with the quality of product they are receiving [47].

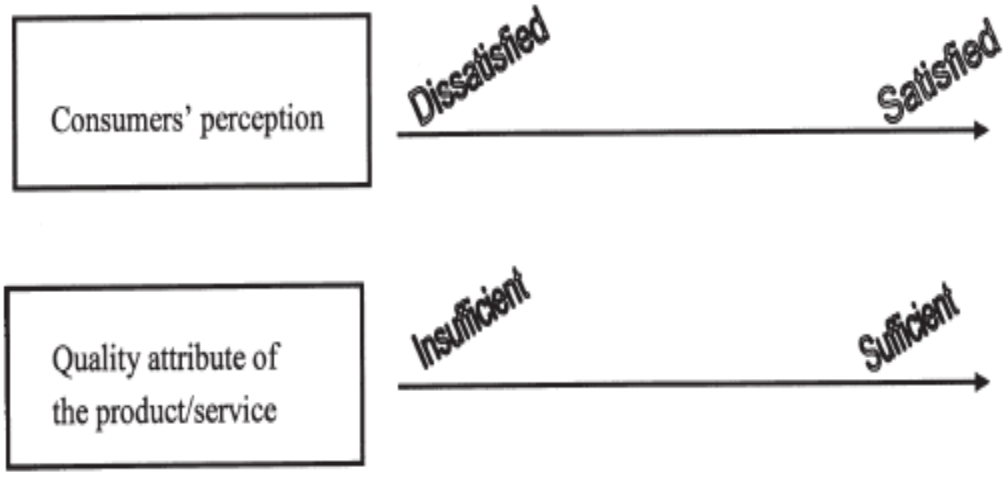


Figure 9 – One-Dimensional model of satisfaction

According to the figure above, as the quality attribute of products increases customer's satisfaction also goes up gradually [47] which is known as one-dimensional or performance factor. This factor over time progressively shifts towards basic factor in customer perspective which proves the idea that quality classification of factors are dynamic and can alter over time. Performance factor is the only feature in one-dimensional type of Kano model; however Kano's second type indicates other situations that have a dissimilar direction which are categorized in two-dimensional type. This model points to two model of conditions that are different from one-dimensional model that was described earlier.

Two-dimensional model includes two types of feature known as Expected quality and Attractive quality.

3.2.2 Expected quality

Expected-quality which is also known as basis factor or must-be factor is simply the type of attribute that the organization must not fail to provide them. The irony of this factor is that its presence or even major growth in its occurrence does not make changes in customer's satisfaction, however, the absence or decrease in its presence can harm the organization and cause swift and huge dissatisfaction.

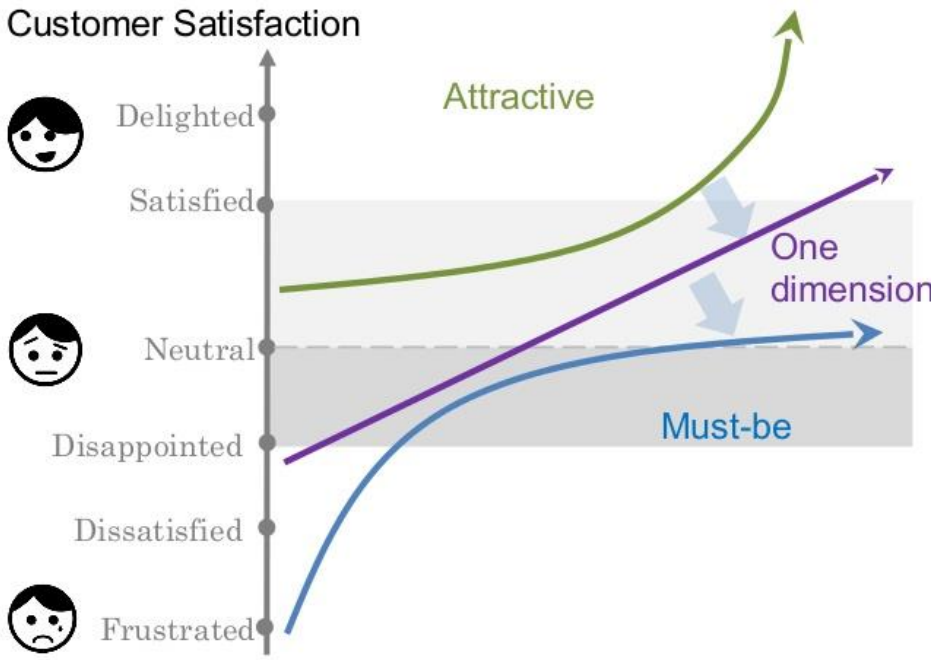


Figure 10 – Customer satisfaction behavior based on Kano philosophy

In Kano philosophy such factors are known as basic factor situations, that the service factor is presumed expected by customer or by a larger group of customer is considered

customary and is viewed as a must-be given factor. As it can be seen in the diagram in next page, unrelatedly to the increase in presence of this factor the curve does not cross the x-axis (horizontal axis) in the diagram which can be seen as the neutral level of satisfaction. It is vitally essential for organizations to provide basic needs for customers otherwise lack of these features can harm the organization significantly and lead to excessive dissatisfaction, therefore, adequate compliance with these attributes even if they do not help fulfillment of satisfaction should not be underestimated when service is provided. Basically, basic feature qualities are the ones that should be greatly assured and that should never fail. Features of must be quality are the characteristic and situations that there is little to gain and much to lose.

3.2.3 Attractive quality

This element is a key to client satisfaction. If they are present or have adequate performance, they will bring advanced satisfaction. This feature is also known as delighters, performance feature and excitement factor.

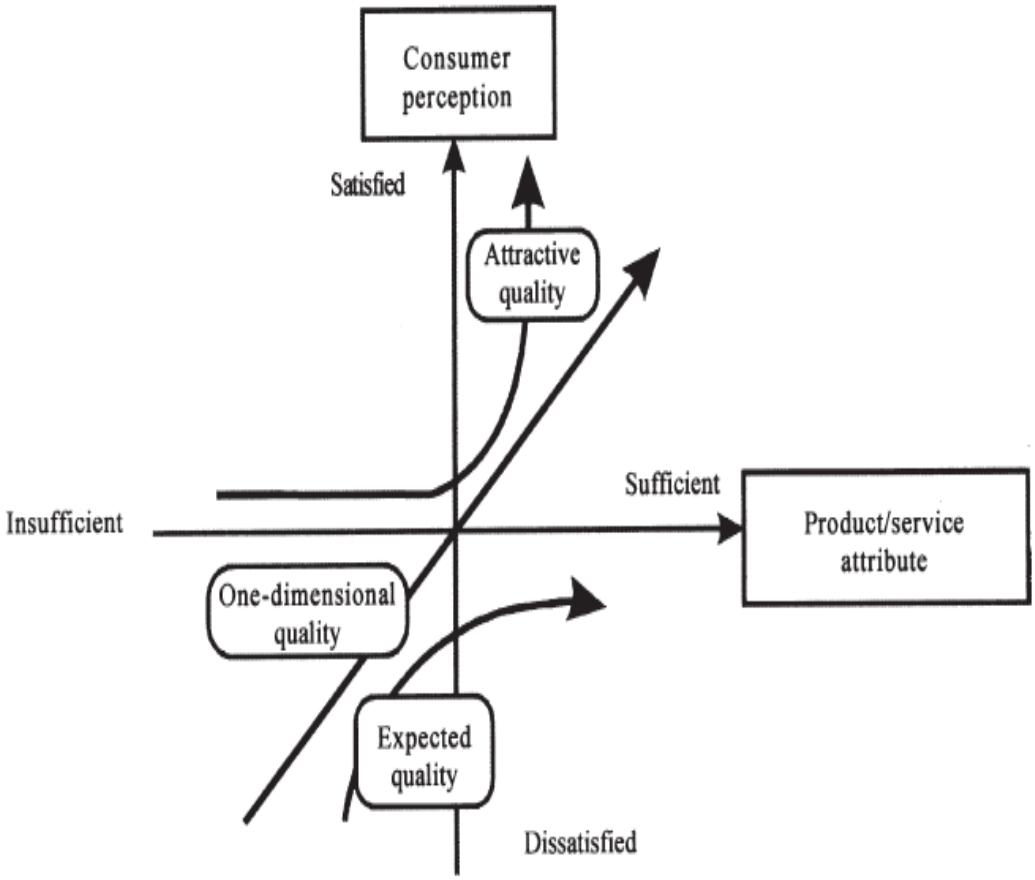


Figure 11 – Kano Model

In this model, the presence of specific quality services can cause a great amount of satisfaction for customers, while on the contrary absence of the same quality service does not cause dissatisfaction. Situations involving excitement feature happen when clients are not used to receiving such services or do not expect them. It could also be that the client never imagined receiving the particular attribute or did not know about chances of its existence therefore its presence can make the customer happy and surprised. Referring to figure 11, this feature is represented in the upper left of the graph with a curve. Increase in presence of such attribute can noticeably produce significant customer gratification.

Chapter IV

Data Collection

4.1 Data Collection

Survey results were requested from the IT department of the hospital for the months of March, April and May with total of 100 patients. HCAHPS survey consist of multiple concepts asking patients to rate the hospital service such as staff communication, cleanliness of environment, pain management and etc. based on patient's satisfaction.

4.2 Who Gets an HCAHPS Survey?

Eligibility to get the survey and excluded patients are as listed below:

Eligible

18+ years old

Admission of at least one overnight stay in the hospital (admission date is different than discharge date)

Non-Psych MS/DRG principal diagnosis at discharge

Alive at discharge

Exclusions

No publicity

Prisoners

Foreign home address

Discharged to Hospice

State regulations

Discharged to nursing homes/SNF

Transfers to Clinic/UH/Etc.? Yes, eligible.

Questions left blank? They don't count against us.

4.3 Current Scenario of Survey Analysis

The survey is conducted among 100 patients who are discharged from Division 4 of a community hospital in northeast of Ohio between February and May. There are continuous and categorical types of questions in the survey. The survey is designed to explore patient's experience in different areas, such as Care from Nurses, The Hospital Environment, Overall Rating of the Hospital, About You. The limitation with the type of analysis that the hospital does is that, it is only narrowed down to one question and comparison of that with the state of Ohio and the overall national data base.

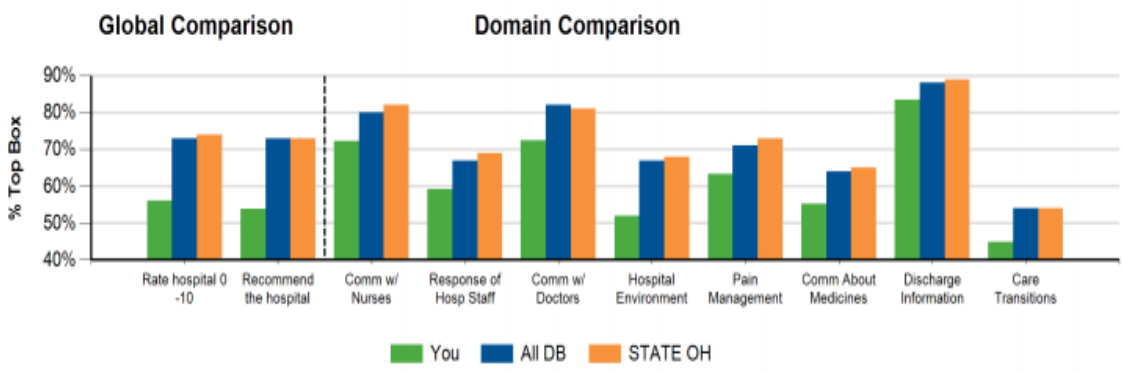


Figure 12 - Press Ganey HCAHPS summary report

Figure above shows a snapshot of a summary report for a year period. According to the figure, it gives instant overall facts whilst comparing the healthcare center in global, national and within state domain. On the left side, shows the overall rate of the hospital based on correspondent's answers to the survey and if they are likely to recommend the hospital. On the right side of the graph, it shows overall rating of multiple aspects of the

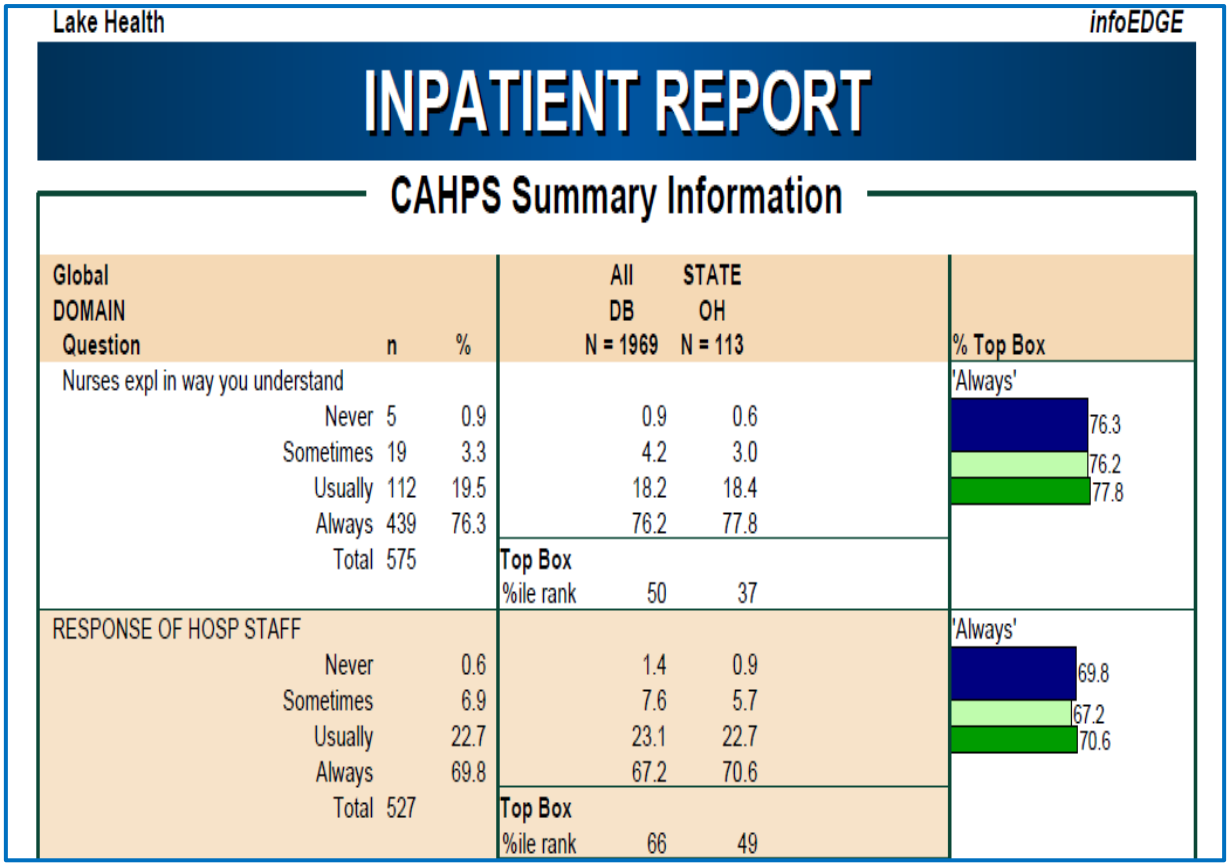
survey such as nurse communication, responsiveness of hospital staff, hospital environment, pain management and discharge information.

Figure below shows the percentage score of the hospital in division four and comparing that in the state of Ohio and in the nation. The problem with this type of simple analysis is that they do not show the correlation with the overall satisfaction of the customers.

DivFour					All DB N = 2081	STATE OH N = 117		
		Your Top Box Score						
Domains and Questions	n	Previous % Feb 15-Jan 16	Current % Feb 16-Jan 17		Percentile Rank	Percentile Rank		
Rate hospital 0-10	517	60.4%	56.1%	▼	3	3		
Recommend the hospital	512	58.9%	53.9%	▼	3	3		
Comm w/ Nurses	523	73.6%	72.2%	▼	6	3		
Nurses treat with courtesy/respect	***517***	***82.2%***	***81.2%***	▼	***12***	***3***		
Nurses listen carefully to you	***522***	***68.6%***	***68.2%***	▼	***6***	***2***		
Nurses expl in way you understand	***521***	***70.0%***	***67.2%***	▼	***6***	***3***		
Response of Hosp Staff	466	57.6%	59.1%	▲	15	11		
Call button help soon as wanted it	443	53.2%	55.5%	▲	14	10		
Help toileting soon as you wanted	273	62.1%	62.6%	▲	19	12		
Comm w/ Doctors	518	72.7%	72.5%	▼	4	4		
Doctors treat with courtesy/respect	***516***	***79.7%***	***80.6%***	▲	***6***	***6***		
Doctors listen carefully to you	***515***	***71.6%***	***70.7%***	▼	***5***	***4***		
Doctors expl in way you understand	***516***	***66.8%***	***66.1%***	▼	***4***	***6***		
Hospital Environment	521	52.3%	51.9%	▼	2	1		
Cleanliness of hospital environment	***515***	***66.4%***	***61.9%***	▼	***5***	***4***		
Quietness of hospital environment	***513***	***38.3%***	***41.9%***	▲	***3***	***1***		
Pain Management	353	63.2%	63.3%	▲	8	1		
Pain well controlled	348	56.4%	54.6%	▼	8	2		
Staff do everything help with pain	***350***	***70.0%***	***72.0%***	▲	***11***	***3***		

Figure 13 – Percentile rank of the top ten questions

Every month a report is sent out to office managers, leadership team and quality leaders of the analysis of the survey but it is very brief and only provides very summarized data.


Lake Health

infoEDGE

INPATIENT REPORT

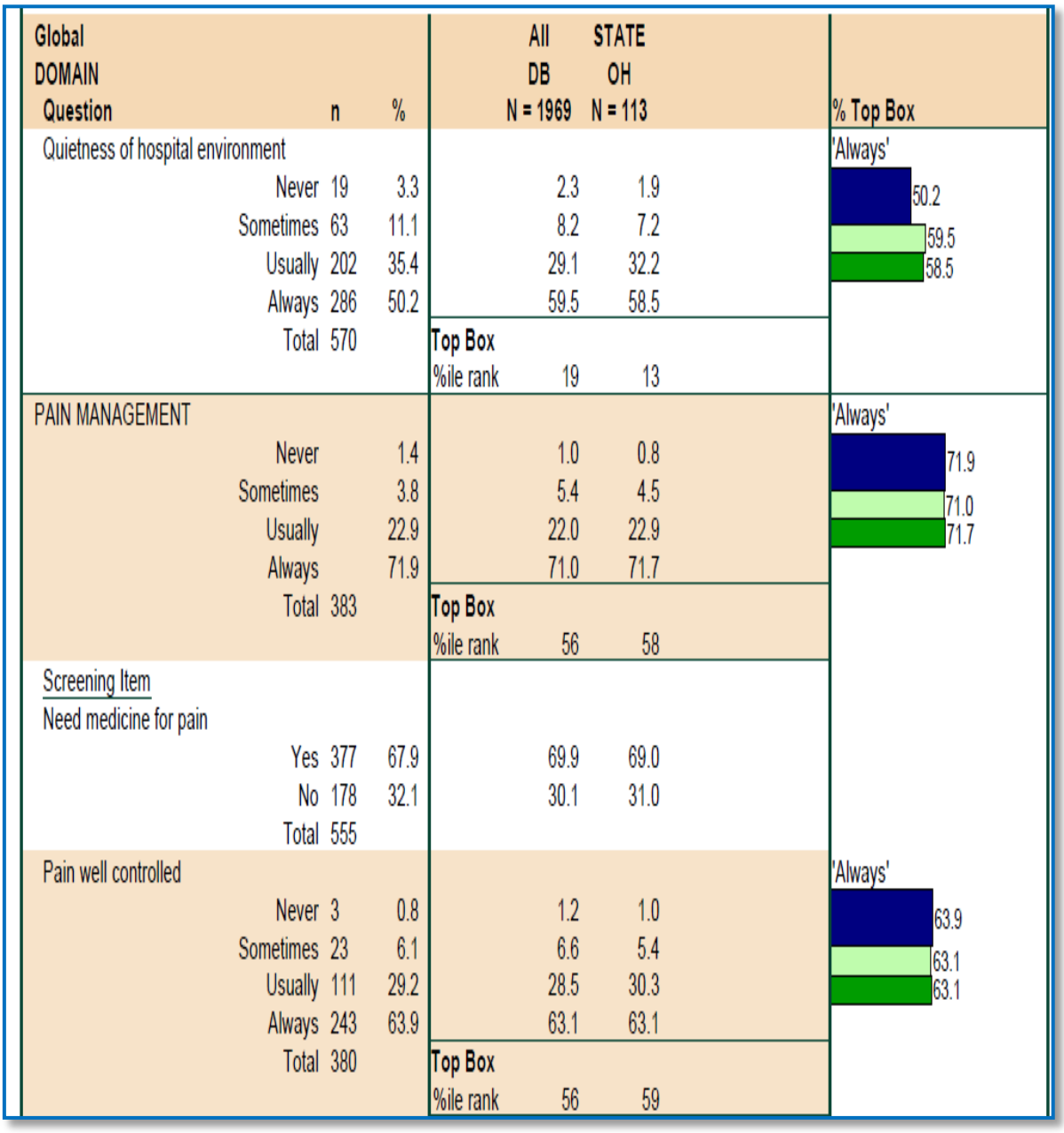
CAHPS Summary Information

Global DOMAIN Question	n	%	All DB N = 1969	STATE OH N = 113	% Top Box
Nurses expl in way you understand					'Always'
Never	5	0.9	0.9	0.6	
Sometimes	19	3.3	4.2	3.0	
Usually	112	19.5	18.2	18.4	
Always	439	76.3	76.2	77.8	
Total	575		Top Box		
			%ile rank	50 37	
RESPONSE OF HOSP STAFF					'Always'
Never		0.6	1.4	0.9	
Sometimes		6.9	7.6	5.7	
Usually		22.7	23.1	22.7	
Always		69.8	67.2	70.6	
Total	527		Top Box		
			%ile rank	66 49	

Figure 14 – CAHPS summary information on nurse communication

The above figure shows the percentile for nurse communication. In this period five of the patients claimed that nursed did not explain things well to patients, twenty of them were only sometimes satisfied the way patients were explanations, hundred twelve said usually they understood what nurses were explaining and more than four hundreds of patients always were satisfied with patients.

Figure below is another example of summary report which shows data on hospital environment and pain management which on average it looks like the hospital has succeeded to satisfy its patients.



Global DOMAIN Question	n	%	All DB N = 1969	STATE OH N = 113	% Top Box
Quietness of hospital environment					'Always'
Never	19	3.3	2.3	1.9	50.2
Sometimes	63	11.1	8.2	7.2	59.5
Usually	202	35.4	29.1	32.2	58.5
Always	286	50.2	59.5	58.5	
Total	570		Top Box		
			%ile rank	19	13
PAIN MANAGEMENT					'Always'
Never		1.4	1.0	0.8	71.9
Sometimes		3.8	5.4	4.5	71.0
Usually		22.9	22.0	22.9	71.7
Always		71.9	71.0	71.7	
Total	383		Top Box		
			%ile rank	56	58
Screening Item					
Need medicine for pain					
Yes	377	67.9	69.9	69.0	
No	178	32.1	30.1	31.0	
Total	555				
Pain well controlled					'Always'
Never	3	0.8	1.2	1.0	63.9
Sometimes	23	6.1	6.6	5.4	63.1
Usually	111	29.2	28.5	30.3	63.1
Always	243	63.9	63.1	63.1	
Total	380		Top Box		
			%ile rank	56	59

Figure 15 – CAHPS summary report on hospital environment and pain management

Similarity and lack of variety in type of analysis that are provided is evident in these reports.

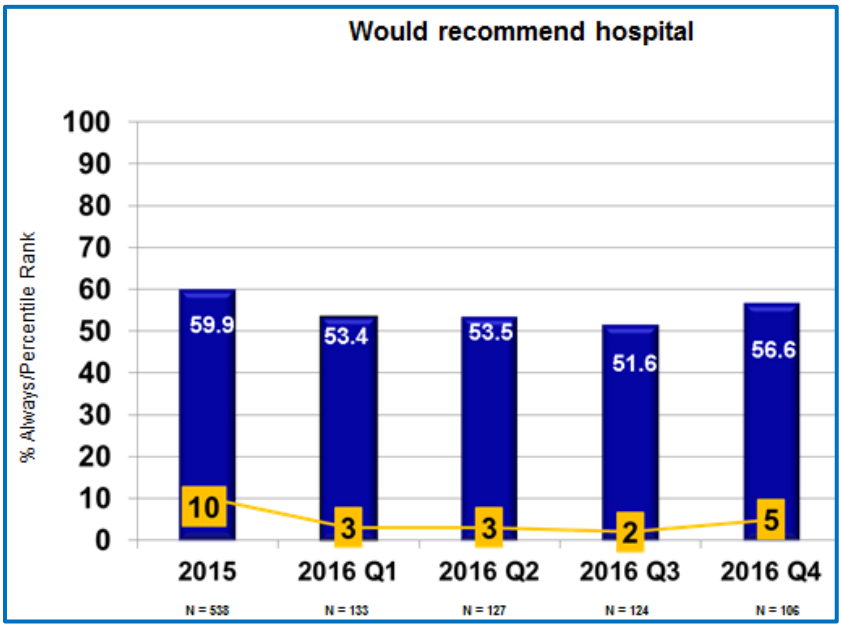


Figure 16 –Likelihood of recommending the hospital (West 4)

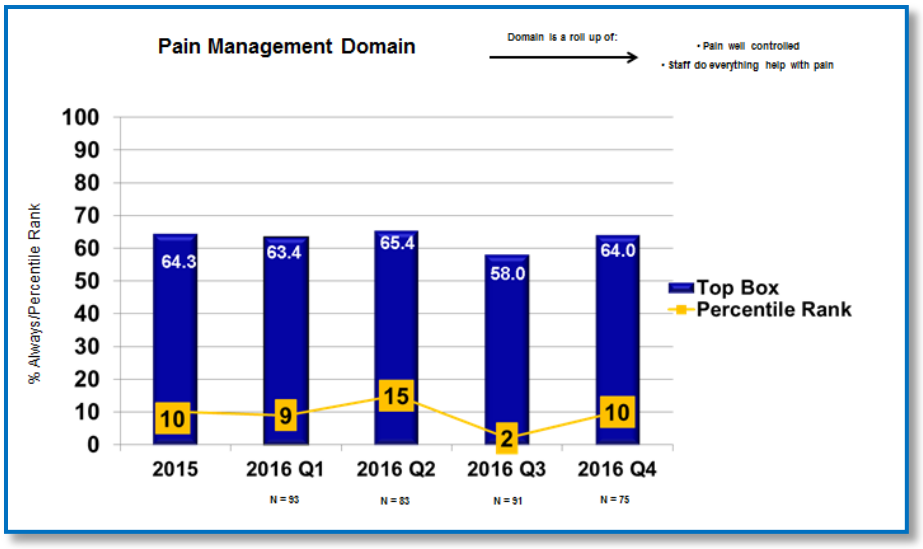


Figure 17 – Pain management percentile diagram

Lack of providing more information is apparent in given reports and more importantly these reports do not reflect patient's comments.

Chapter V

Data Analysis and Results

5.1 Survey Analysis and Results

In this part of the research we look at different aspects of the survey and exploring their connection with hospital overall rating and patient's satisfaction.

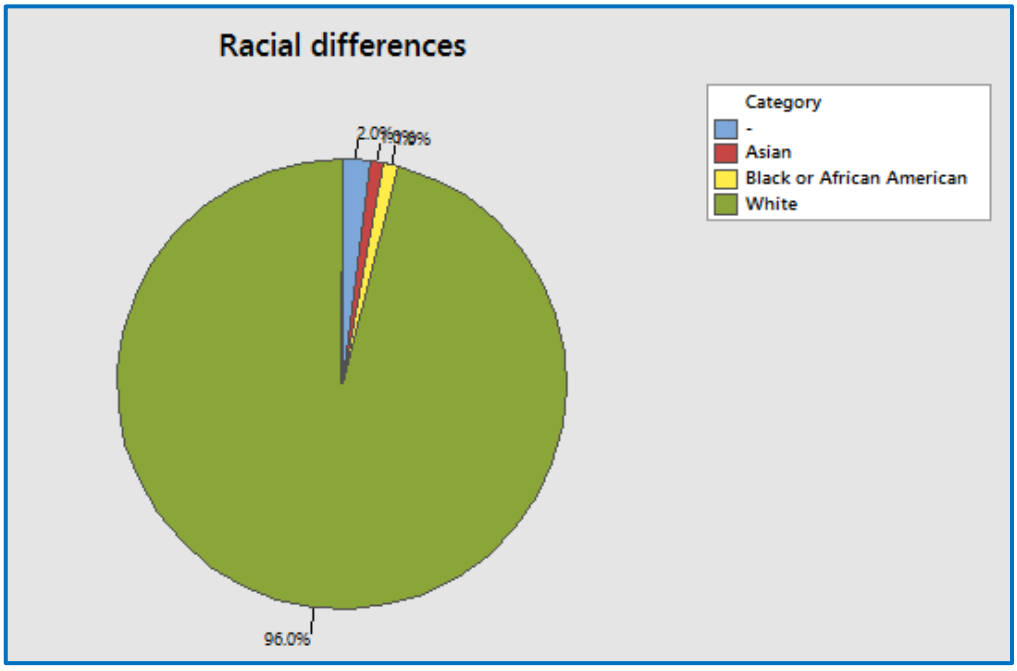


Figure 18 – Racial diversity between patients

Pie chart above shows the racial diversity of the customers who responded to the survey in this research. According to the pie chart almost all of the customers have chosen white and merely 4% of customers not white, including 2% unknown (did not answer the question), 1% Asian and 1% African American.

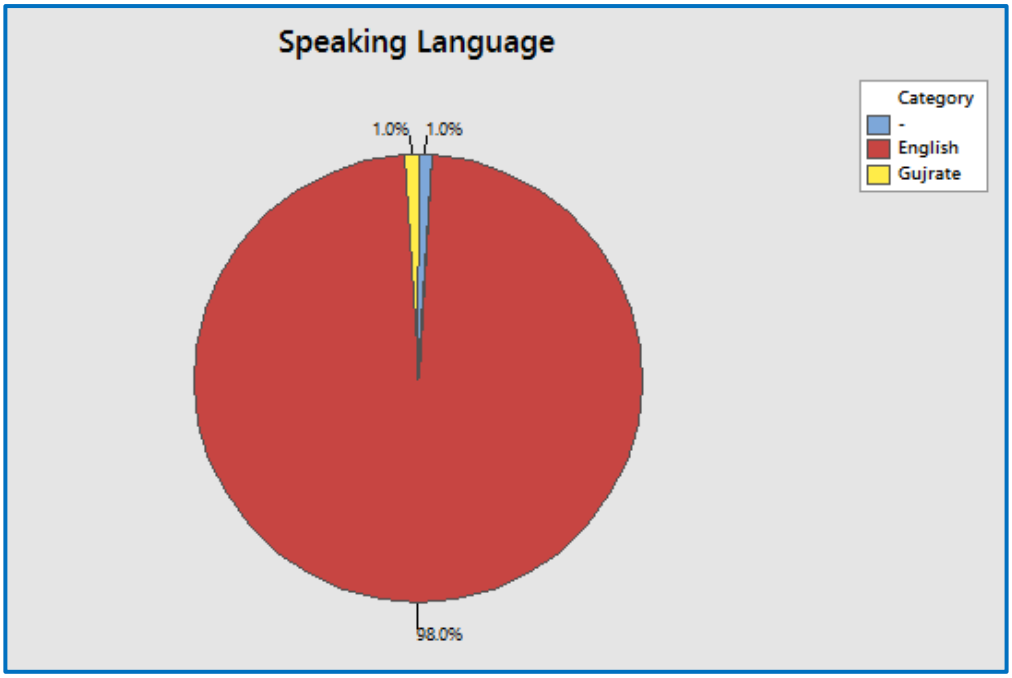


Figure 19 – Patient's spoken languages

One of the questions that patients were asked in the survey is about their speaking language. The purpose of this question is to know diversity of the spoken languages in the hospital and if there could be a problem in terms of communication between patients and staff. Graph above shows the spoken language of the customers. Based on the graph almost all of the patients have communicated in English however one patient had not answered this question and another patient wrote Gujrati as the spoken language. Gujrati is an Aryan-Indo language spoken by more than 40 million Indian .

Figure below aims to show the correlation between educational level of the patients and their hospital rating.

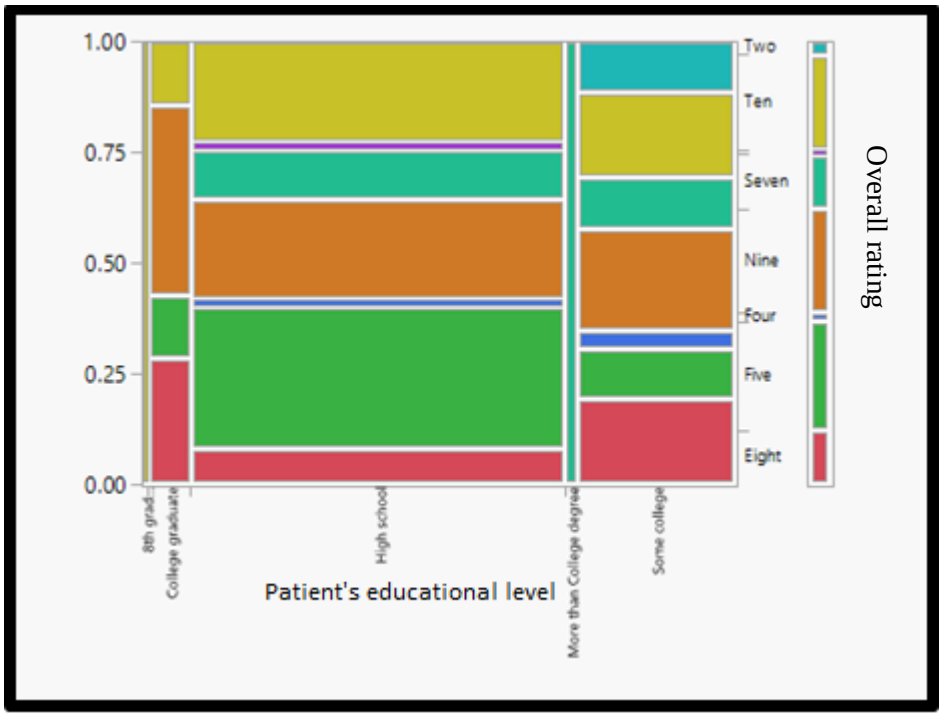


Figure 20 – Mosaic plot of comparison between educational level vs patient's rating

According to diagram above and table 1, majority of the correspondents to the survey had the high school level but did not graduate and rated their experience five out of ten and less than 15% of them rated it as nine and ten separately. After that those who had been through some level of college or two year degree graded hospital mostly nine and ten respectively.

Contingency Table

Patient's educational level	Count / Total % / Col % / Row %	Overall rating: Eight	Five	Four	Nine	Seven	Six	Ten	Two	Total
	8th grade	0	0	0	0	0	0	1	0	1
		0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02
		0.00	0.00	0.00	0.00	0.00	0.00	4.76	0.00	
		0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	
	College graduate	2	1	0	3	0	0	1	0	7
		2.04	1.02	0.00	3.06	0.00	0.00	1.02	0.00	7.14
		16.67	4.17	0.00	13.04	0.00	0.00	4.76	0.00	
		28.57	14.29	0.00	42.86	0.00	0.00	14.29	0.00	
	High school	5	20	1	14	7	1	14	0	62
		5.10	20.41	1.02	14.29	7.14	1.02	14.29	0.00	63.27
		41.67	83.33	50.00	60.87	58.33	100.00	66.67	0.00	
		8.06	32.26	1.61	22.58	11.29	1.61	22.58	0.00	
	More than College degree	0	0	0	0	2	0	0	0	2
		0.00	0.00	0.00	0.00	2.04	0.00	0.00	0.00	2.04
		0.00	0.00	0.00	0.00	16.67	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	
	Some college	5	3	1	6	3	0	5	3	26
		5.10	3.06	1.02	6.12	3.06	0.00	5.10	3.06	26.53
		41.67	12.50	50.00	26.09	25.00	0.00	23.81	100.00	
		19.23	11.54	3.85	23.08	11.54	0.00	19.23	11.54	
	Total	12	24	2	23	12	1	21	3	98
		12.24	24.49	2.04	23.47	12.24	1.02	21.43	3.06	

Table 1 – Contingency table of hospital rating vs. educational level

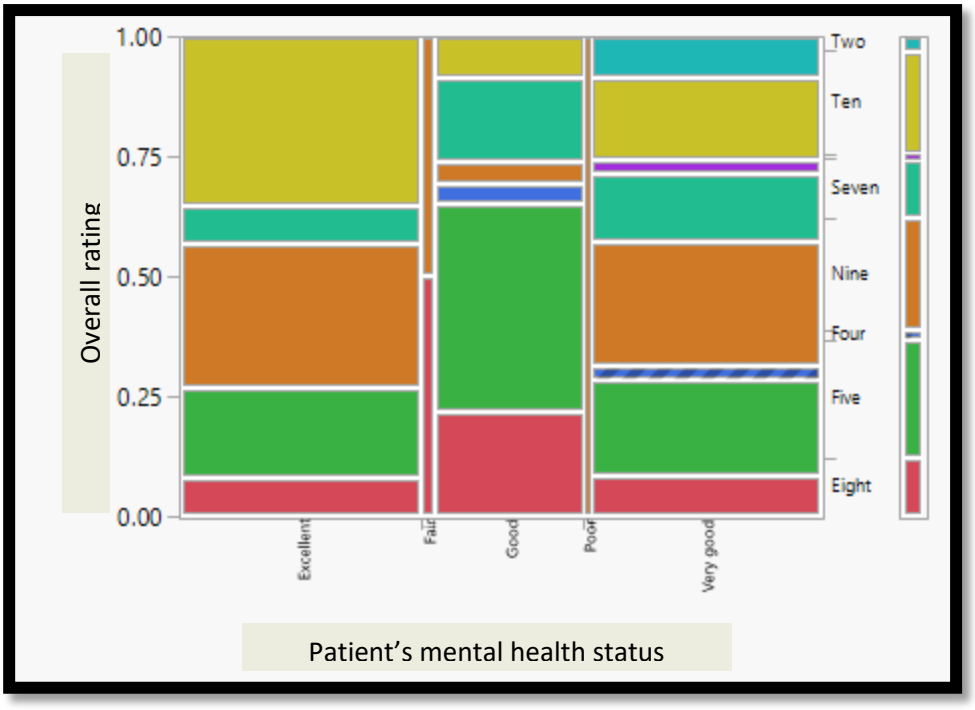


Figure 21 – Mosaic plot of comparison between patiennt's mental health statusand overall rating

Diagram above shows that majority of the patients excellent and very good as their mental health conditoin. Looking at the fiagram we can see that those who are in a better mental health condiotion are more likley to be satisfied better with the service they have received. There are not many patietns who have poor mental health condition in this research.

Contingency Table

Patient's mental health status	Overall rating								
Count Total % Col % Row %	Eight	Five	Four	Nine	Seven	Six	Ten	Two	Total
Excellent	3	7	0	11	3	0	13	0	37
	3.06	7.14	0.00	11.22	3.06	0.00	13.27	0.00	37.76
	25.00	29.17	0.00	47.83	25.00	0.00	61.90	0.00	
	8.11	18.92	0.00	29.73	8.11	0.00	35.14	0.00	
Fair	1	0	0	1	0	0	0	0	2
	1.02	0.00	0.00	1.02	0.00	0.00	0.00	0.00	2.04
	8.33	0.00	0.00	4.35	0.00	0.00	0.00	0.00	
	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	
Good	5	10	1	1	4	0	2	0	23
	5.10	10.20	1.02	1.02	4.08	0.00	2.04	0.00	23.47
	41.67	41.67	50.00	4.35	33.33	0.00	9.52	0.00	
	21.74	43.48	4.35	4.35	17.39	0.00	8.70	0.00	
Poor	0	0	0	1	0	0	0	0	1
	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00	1.02
	0.00	0.00	0.00	4.35	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	
Very good	3	7	1	9	5	1	6	3	35
	3.06	7.14	1.02	9.18	5.10	1.02	6.12	3.06	35.71
	25.00	29.17	50.00	39.13	41.67	100.00	28.57	100.00	
	8.57	20.00	2.86	25.71	14.29	2.86	17.14	8.57	
Total	12	24	2	23	12	1	21	3	98
	12.24	24.49	2.04	23.47	12.24	1.02	21.43	3.06	

Table 2- Contingency table of hospital rating vs patient's mental health condition

Patients who are in excellent mental condition have rated the hospital as ten and nine with 13 and 11 correspondents respectively. Those patients who are in "very good" mental condition have mostly rated hospital 9.

Diagram below makes a connection between overall hospital rating and patient's overall health condition. The purpose of this type of analysis was to see if patient's health condition can affect their overall rating of the hospital.

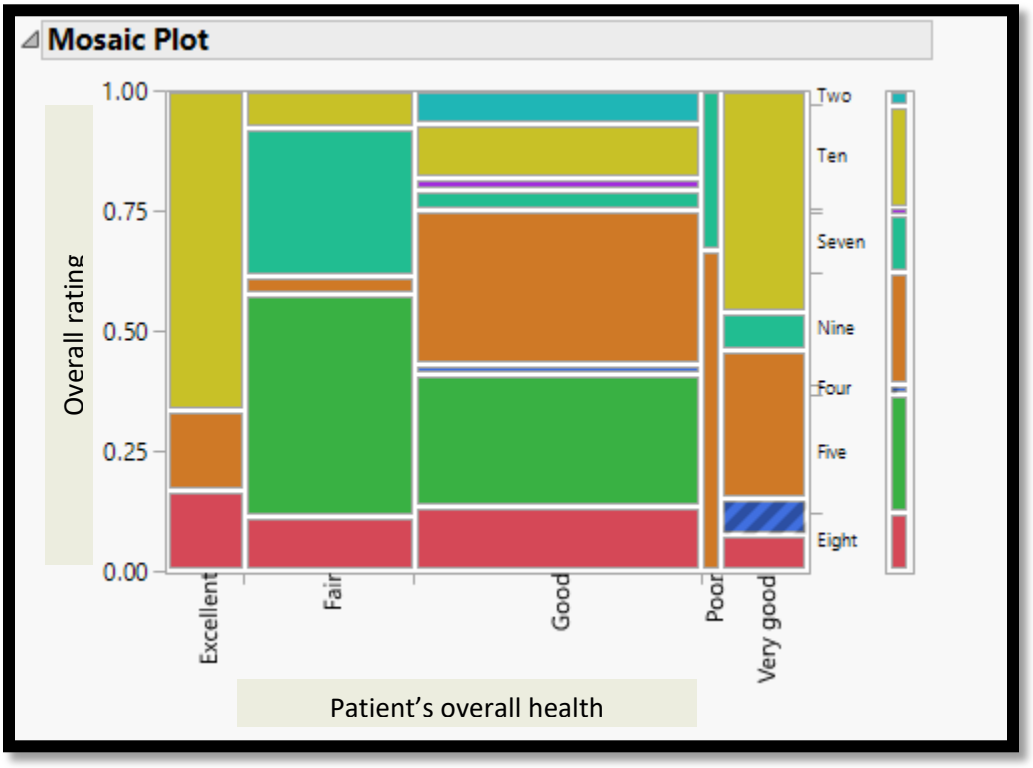


Figure 22 - Mosaic plot of comparison between patiennt's overall health and overall rating

Figure above shows majority of corresnpondants in this research are in "good" health condition. According to graph and table 3, most of customers are in a good health condition. Twenty six of patietns have selcted "fair" as their overall health condition and three patietns selected "poor".

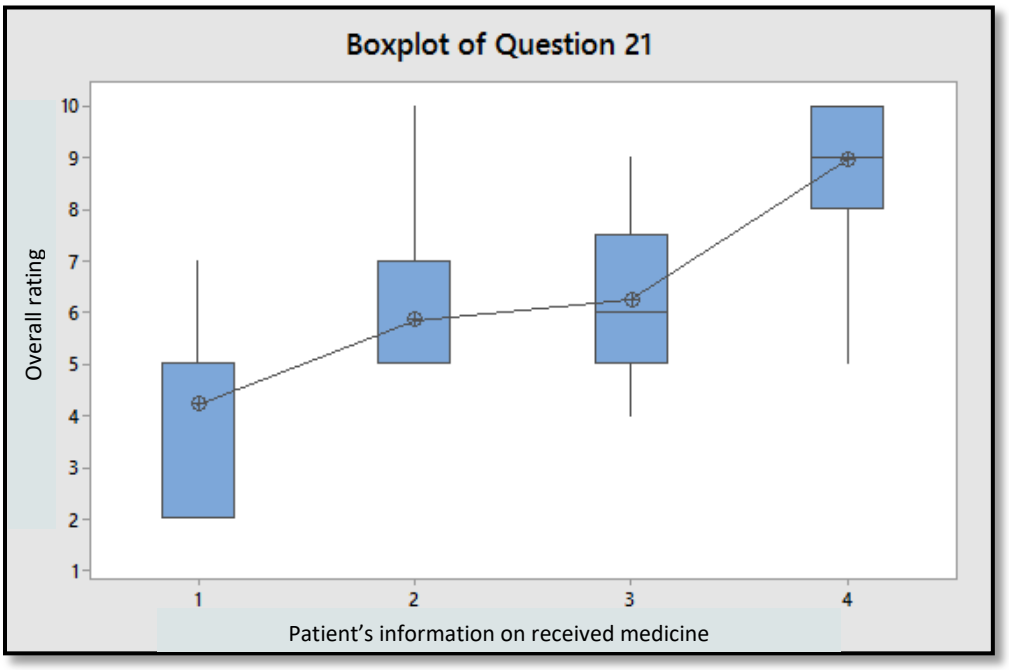
Contingency Table

Patient's overall health	Count / Total % / Col % / Row %	Eight	Five	Four	Nine	Seven	Six	Ten	Two	Total
	Excellent	2	0	0	2	0	0	8	0	12
		2.04	0.00	0.00	2.04	0.00	0.00	8.16	0.00	12.24
		16.67	0.00	0.00	8.70	0.00	0.00	38.10	0.00	
		16.67	0.00	0.00	16.67	0.00	0.00	66.67	0.00	
	Fair	3	12	0	1	8	0	2	0	26
		3.06	12.24	0.00	1.02	8.16	0.00	2.04	0.00	26.53
		25.00	50.00	0.00	4.35	66.67	0.00	9.52	0.00	
		11.54	46.15	0.00	3.85	30.77	0.00	7.69	0.00	
	Good	6	12	1	14	2	1	5	3	44
		6.12	12.24	1.02	14.29	2.04	1.02	5.10	3.06	44.90
		50.00	50.00	50.00	60.87	16.67	100.00	23.81	100.00	
		13.64	27.27	2.27	31.82	4.55	2.27	11.36	6.82	
	Poor	0	0	0	2	1	0	0	0	3
		0.00	0.00	0.00	2.04	1.02	0.00	0.00	0.00	3.06
		0.00	0.00	0.00	8.70	8.33	0.00	0.00	0.00	
		0.00	0.00	0.00	66.67	33.33	0.00	0.00	0.00	
	Very good	1	0	1	4	1	0	6	0	13
		1.02	0.00	1.02	4.08	1.02	0.00	6.12	0.00	13.27
		8.33	0.00	50.00	17.39	8.33	0.00	28.57	0.00	
		7.69	0.00	7.69	30.77	7.69	0.00	46.15	0.00	
	Total	12	24	2	23	12	1	21	3	98
		12.24	24.49	2.04	23.47	12.24	1.02	21.43	3.06	

Overall health

Table 3 – Contingency table of hospital rating vs. patient's overall health

Table above and figure 19, show the correlation between overall health condition of the patients and their overall rating of the hospital. Clearly majority of the patients are in "good" condition and bad health condition could not cause significant changes in the results.

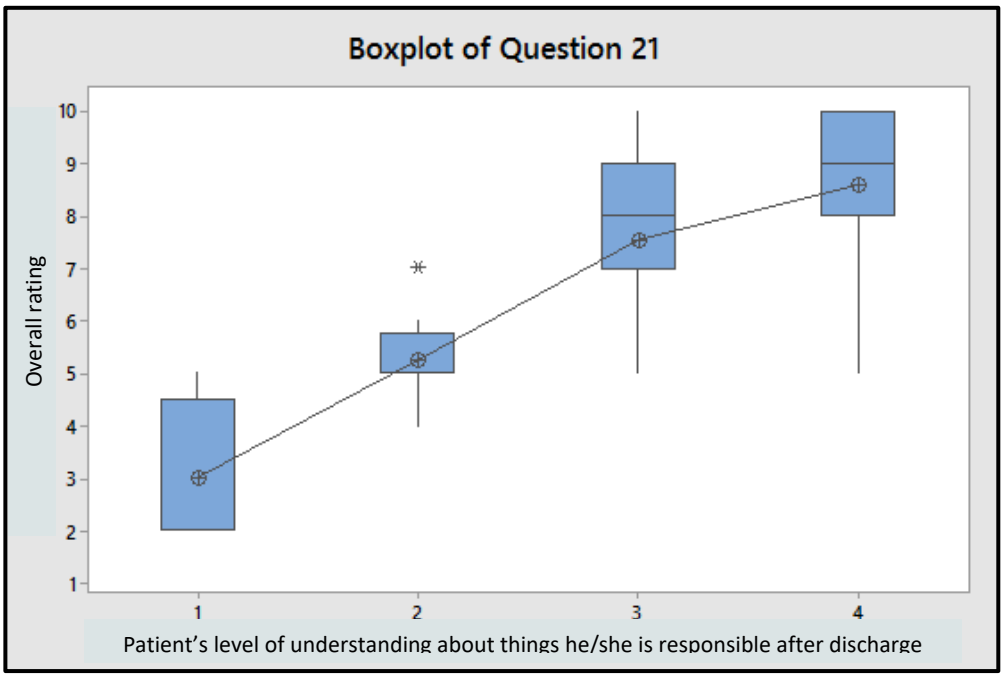


Response	Median	Mean:
Never (1): 10	5	4.2
Sometimes (2): 18	5	5.83
Usually (3): 13	6	6.23
Always (4): 58	9	8.94

Figure 23 – Analysis of overall rating vs. patient's information on received medicine

Question 16 in the survey asks patients before they receive the medicine how often did hospital staff tell them what the medication was for. Referring to the box plot it is clear that the more patients have received information the more satisfied they are and the amount of

information they received has affected their satisfaction gradually, therefore, this question can represent the one-dimensional feature of Kano philosophy.

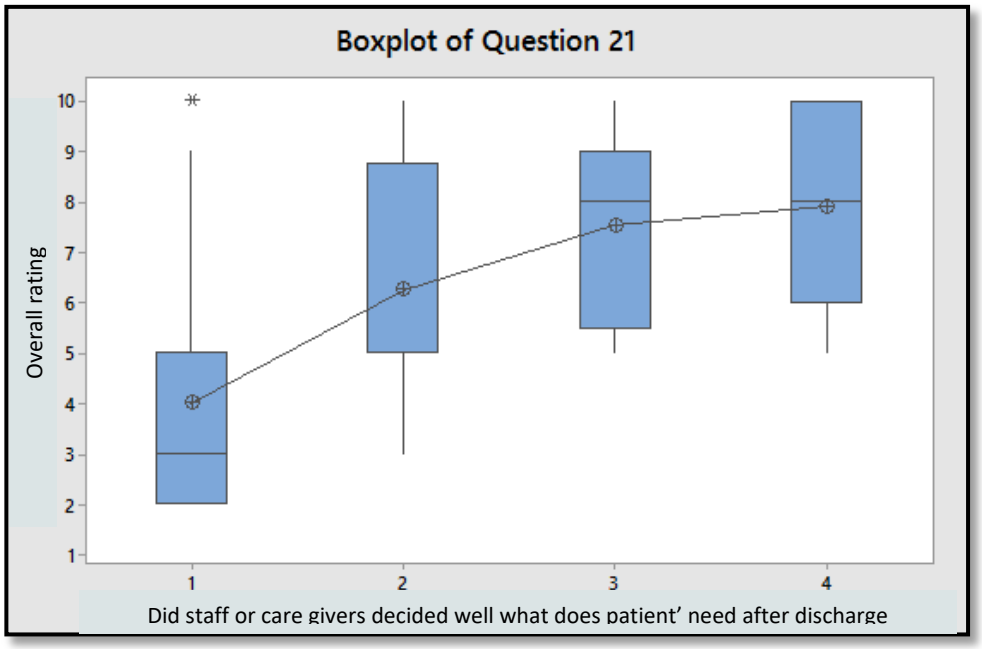


Response	Median	Mean:
Strongly disagree (1): 5	2	3
Disagree (2): 8	5	5.25
Agree (3): 47	8	7.53
Strongly disagree (4): 38	9	8.57

Figure 24 – Analysis of overall rating vs. patient's level of understanding about things he/she is responsible for after discharge

Diagram above shows the correlation between patient's level of understating of things he/she is responsible for their health with overall rating. Looking at the graph it shows a very linear relationship between the two factors. Meaning if the patients do not receive

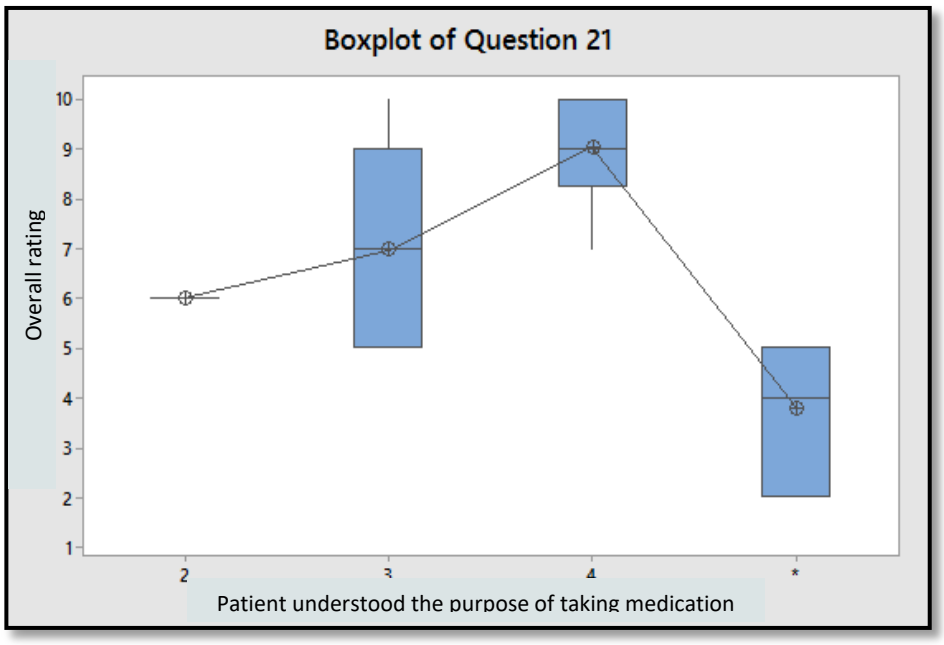
sufficient information this can cause decrease in their satisfaction level and in the contrary if they get more information about the things they need to do after they discharge this can make the patient to be better satisfied, so this is another example of one-dimensional attribute in this case.



Response	Median	Mean:
Strongly disagree (1): 11	9	7
Disagree (2):14	7.5	7.2
Agree (3):57	8	7.3
Strongly disagree (4):16	9	8.4

Figure 25 – Analysis of overall rating vs. if staff and care givers decided well what does patient needs

Question 23 asks patients if staff or caregivers decided well what patient's health care needs after discharge. Looking at the box plot graph and the table above shows the increase in the response level does not necessarily cause a significant increase in overall rating. Looking at the "mean" in the table for each of the response level we can see that the increase is very small and does not cause huge satisfaction level, however, lack of this service can clearly cause harm and bring the satisfaction level down significantly. Therefore, based on the insignificant changes in mean from one level to another it can be concluded that this question represents must have attribute in KANO model.



Response	Median	Mean:
Strongly disagree (1): 3		
Disagree (2): 9		6
Agree (3): 45	7	6.8
Strongly disagree (4):42	9	9.1

Figure 26– Analysis of overall rating vs. patient understanding of purpose of taking medications

Question 25, asks patients if they understood the purpose of taking their medication and results in boxplot were slightly surprising. According to the graph, this feature is somewhat and excitement feature for customers because the presence of it caused significant increase in satisfaction level and lack of it did not harm the satisfaction level. The increase from 6.8 to 9.1 mean in response level proves that the more patient get to know about the purpose of each medication the more satisfy they will be. This can be related to patients previous experiences, perhaps previous health center do not provide enough information for patients and this times patients were happily surprised and satisfied to receive such information. Therefore, this type of behaviors based on Kano theory is known as excitement feature.

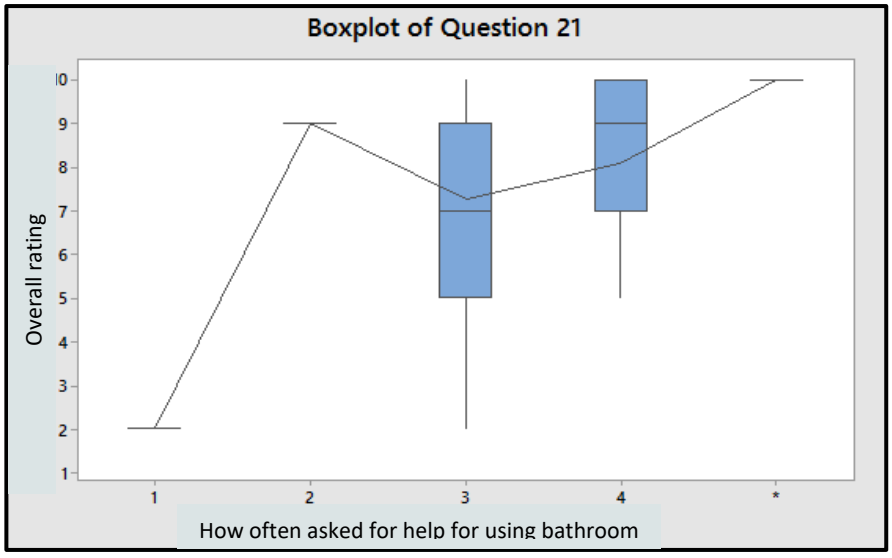


Figure 24 – Boxplot of overall rating vs. how often patient asked for help f or using bathroom

One of the other questions that showed an interesting result is when we look at the response to question 11 – which asks the patient how often did they get help for using bathroom or bedpan as soon as they wanted. Referring to figure 4, it can be claimed that, majority of patients have asked for help, however, patients still seems satisfied even if they did not requested help, however if the patient has asked for help the satisfaction level rises, the median goes up from 7 to 9, meaning higher satisfaction and greater likelihood of recommending the hospital. This is also another example of attractive quality or excitement feature.

After analyzing the questions and finding the correlation between independent and dependent factor, we studied the comments written by the surveyed patients, which pointed out even more information about the hospital as well as emphasizing Kano features. Some of the patients who have been to other hospitals said their recent experience is by far the best experience they have had and how delighted they are by how nice and respectful hospital staffs are comparing with their previous experiences. This shows changes in quality attribute can produce great results. On the other hand, some of the patients, suggested if hospital can improve the quality of its food, it could make patients happier, nevertheless, the current meal quality does not cause dissatisfaction for patients and they are still rating the hospital highly and very likely to recommend it to others.

Chapter VI

Conclusions

6.1 Conclusion

Over the past three decades the importance of patient satisfaction analysis has increased significantly. Hospital managers and stakeholders use these analyses as a tool benefit both their service and help themselves cut costs if possible. Use of patient survey is a great way of conducting researches in this field as it provides direct feedback from customers (patients) and shows service strength and weaknesses. However, where this research is conducted, managers only focus on simple analysis such as mean and percentile rank which provide no in depth details. The Kano methodology that was used in this research provides correlation analysis showing how alteration in one independent analysis can slightly or significantly affect dependent analysis (the overall satisfaction in this case). In this paper, a unique approach was adopted by using Kano theory to show minimal changes in quality attribute can make significant changes in overall satisfaction and rating of hospital. Specifically, we introduced the main principles of Kano model and used the independent variables to find a more delicate correlation between the individual survey questions with overall patient satisfaction rating. The results show that our approach was successful and the comments by many correspondents support and validate our findings and also that changes do not necessarily requires huge budget and big alteration in personnel. Overall, critical elements of the survey were identified using correlation analysis so that hospital establishments can look at the data from different perspectives.

6.2 Future Work

While the research conducted was able to provide information and answer the objectives of the study to a great extent, there were some limitations that slowed down the process. The initial problem was access to the data, which IT department of the hospital only keeps the last three months of the actual survey and we could not access more data. Having said that, bigger sample size in this research could validate the findings even more and could possibly lead to more certain conclusions. Perhaps if the HCAHPS survey provide a little bit more information on correspondents who answer the survey such as age or gender the analysis could have expanded and be more in details. We limited our work only to division four departments and analyzed data specifically for this department. The results also showed that despite expectations and anticipations correlation between two factors can be very surprising in healthcare service and experience does not imply perfection necessarily.

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SAMPLE

Lake Health

OMB Control Number: 0938-0981

SURVEY INSTRUCTIONS: You should only fill out this survey if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient. Answer all the questions by completely filling in the circle to the left of your answer. You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this: ○ Yes
● No → **If No, Go to Question 1**

Please use black or blue ink to fill in the circle completely. Example: ●

Please answer the questions in this survey about your stay at Lake Health. Do not include any other hospital stays in your answers.

YOUR CARE FROM NURSES

1. During this hospital stay, how often did nurses treat you with courtesy and respect?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

2. During this hospital stay, how often did nurses listen carefully to you?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

3. During this hospital stay, how often did nurses explain things in a way you could understand?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always
   ○ I never pressed the call button

YOUR CARE FROM DOCTORS

5. During this hospital stay, how often did doctors treat you with courtesy and respect?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

6. During this hospital stay, how often did doctors listen carefully to you?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

7. During this hospital stay, how often did doctors explain things in a way you could understand?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

THE HOSPITAL ENVIRONMENT

8. During this hospital stay, how often were your room and bathroom kept clean?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

9. During this hospital stay, how often was the area around your room quiet at night?
   ○ Never
   ○ Sometimes
   ○ Usually
   ○ Always

YOUR EXPERIENCES IN THIS HOSPITAL

10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?
    ○ Yes
    ○ No → **If No, Go to Question 12**

11. How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?
    ○ Never
    ○ Sometimes
    ○ Usually
    ○ Always

12. During this hospital stay, did you need medicine for pain?
    ○ Yes
    ○ No → **If No, Go to Question 15**

13. During this hospital stay, how often was your pain well controlled?
    ○ Never
    ○ Sometimes
    ○ Usually
    ○ Always

14. During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?
    ○ Never
    ○ Sometimes
    ○ Usually
    ○ Always

continued...

1372666

Return To: 710 Rush Street, South Bend, IN 46601

SAMPLE

Questions 1-22 and 'About You' questions are part of the HCAHPS Survey and are owned by the U.S. Government. These HCAHPS questions are in the public domain and therefore are NOT subject to U.S. copyright laws. The Press Ganey Transitions Measures questions (Questions 23-32) are copyright of The Care Transitions Program® (www.caretransitions.org).

PRESS GANEY®

SAMPLE

15. During this hospital stay, were you given any medicine that you had not taken before?
- O Yes
- O No → **If No, Go to Question 18**

16. Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?
- O Never
- O Sometimes
- O Usually
- O Always

17. Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?
- O Never
- O Sometimes
- O Usually
- O Always

WHEN YOU LEFT THE HOSPITAL

18. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?
- O Own home
- O Someone else's home
- O Another health facility → **If Another, Go to Question 21**

19. During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?
- O Yes
- O No

20. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?
- O Yes
- O No

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

21. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?
- O 0 Worst hospital possible
- O 1
- O 2
- O 3
- O 4
- O 5
- O 6
- O 7
- O 8
- O 9
- O 10 Best hospital possible

22. Would you recommend this hospital to your friends and family?
- O Definitely no
- O Probably no
- O Probably yes
- O Definitely yes

UNDERSTANDING YOUR CARE WHEN YOU LEFT THE HOSPITAL

23. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.
- O Strongly disagree
- O Disagree
- O Agree
- O Strongly agree

24. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.
- O Strongly disagree
- O Disagree
- O Agree
- O Strongly agree

25. When I left the hospital, I clearly understood the purpose for taking each of my medications.
- O Strongly disagree
- O Disagree
- O Agree
- O Strongly agree
- O I was not given any medication when I left the hospital

ABOUT YOU

26. During this hospital stay, were you admitted to this hospital through the Emergency Room?
- O Yes
- O No

27. In general, how would you rate your overall health?
- O Excellent
- O Very good
- O Good
- O Fair
- O Poor

28. In general, how would you rate your overall mental or emotional health?
- O Excellent
- O Very good
- O Good
- O Fair
- O Poor

29. What is the highest grade or level of school that you have completed?
- O 8th grade or less
- O Some high school, but did not graduate
- O High school graduate or GED
- O Some college or 2-year degree
- O 4-year college graduate
- O More than 4-year college degree

30. Are you of Spanish, Hispanic or Latino origin or descent?
- O No, not Spanish/Hispanic/Latino
- O Yes, Puerto Rican
- O Yes, Mexican, Mexican American, Chicano
- O Yes, Cuban
- O Yes, other Spanish/Hispanic/Latino

31. What is your race? Please choose one or more.
- O White
- O Black or African American
- O Asian
- O Native Hawaiian or other Pacific Islander
- O American Indian or Alaska Native

32. What language do you mainly speak at home?
- O English
- O Spanish
- O Chinese
- O Russian
- O Vietnamese
- O Portuguese
- O Some other language (please print):

ADDITIONAL COMMENTS ABOUT YOUR CARE

Now that we have asked you to tell us about *what happened* during your care, we would like to ask you for any additional comments about your experience.

1.) Please tell us if there is anything we could have done better:

Patient's Name: (optional) _____

Telephone Number: (optional) _____

THANK YOU

Please return the completed survey in the postage-paid envelope.

1372966

SAMPLE