Private or Public Inpatient Care? A Comparative Study on Key Factors Influencing the Patient Satisfaction in a Mixed Healthcare System

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Abstract
The aim of the article is to examine the determinants that affect the inpatient satisfaction of private and public hospitals across the Colombo District in Sri Lanka. This study applies the principles derived through an empirical analysis which includes SERVQUAL model, Press Graney Associates Model and PubHosQual Model. The study sample contains a total of 300 inpatients. A questionnaire was developed with the likert scale. The results indicate that the inpatients of the private hospitals were much more satisfied with the service quality than the public hospital patients. The results also suggest that the private hospital patients were more satisfied in the areas of "art of care and infrastructure" where the public sector satisfied "administration requirements and effectiveness of treatments". Finally it was seen that "Art of care" was the most affecting factor which was followed by "effectiveness of treatments".

Keywords. Inpatients, Private and public, Sri Lanka, Health care

1. Introduction

Sri Lanka has a unique healthcare system that provides and extends free healthcare to the citizens which has been one of the Nation"s priorities. Sri Lanka is a low middle income country where the government provides a wide range of free medical services to all its citizens. However, affluent people as well as the private sector employees who are covered by company insurance policies would seek the patronage of private hospitals.

Sri Lanka has a twofold system comprising the primary healthcare provider to be the Ministry of Health and Nutrition (MoH). The decentralization of the provision of the primary, secondary and tertiary services could be seen as National hospitals, Provincial base hospitals, District hospitals and Peripheral units. The private healthcare sector has boomed up rapidly due to the high demand for the private medical healthcare since the past few years.

The country"s expenditure on public health is low but the health indicators are similar to more developed countries in the region. The mortality rate for children under five years has fallen from 28.9 per 1000 live births in 2004 to 9.8 per 1000 live births by the end of the year 2015. Sri Lanka has a higher life expectancy rate which has hit to 74 years in 2013 from 60 in 1960 (World Bank, 2015). Thailand was cited as an example of a country that has a higher mortality rate for the children under five years and a smaller life expectancy. Its per capita health expenditure is twice compared to Sri Lanka. It proves, under better facilities government can offer improved services.

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The government provides universal healthcare for patients even if there are long waits to meet the specialists. The private sector emerged to feed this gap but requires a payment- up front. The increase of the ageing population and non-communicable diseases rise the burden on the healthcare system but augmenting income and the demand for the medical equipment and pharmaceuticals has given the opportunities to the private sector. This has forced the helpless patients to seek the medical requirements from private sector at the cost of their house hold expenditure budget (Dayaratne, 2016).

1.1 Research Problem

As per the Health Economics Cell, Ministry of Health, Nutrition & Indigenous Medicine Sri Lanka (2016), the expenditure on the private healthcare has risen over the start of the new century but shows a drop in the past few years. On the contrary, public health expenditure has initially fallen but shows an increase in the recent past (Amarasinghe, Thowfeek, Anuranga, Dalpatadu, & Rannan-Eliya, 2015). This suggests, Sri Lankan government health expenditure would have an increasing trend.

The accurate role of the healthcare providers in mixed healthcare systems remains as a subject of considerable controversy which ultimately depends on the differences between private and public providers to whom and how they treat, the cost to the patients and differences in the quality (Sauerborn, 2013). However, there is barely any evidence on the differences in the quality of in-patient care received in private and public hospital settings in a free universal healthcare system (Rannan-Eliya et al., 2014).

As per Eggleston et al. (2010) the studies that have been done is limited to measures of structural quality. To address this gap in evidence and to better characterize the nature of mixed healthcare delivery in Sri Lanka, this study aims to evaluate the determinants of inpatient care satisfaction in private and public hospitals of Sri Lanka, whether and how they differ. The researcher intends to find the facts to prove or deny the assumption "Sri Lanka is known for providing high volumes of service delivery at a relatively lower cost, however the fact whether this is done at the expense of the quality is not known" (Rannan-Eliya & Sikurajapathy, 2008). Thus the research objectives are to identify the determinants of patient satisfaction in the private and public hospitals, to perform an association analysis to determine the most significant indicators of the patient satisfaction in private and public hospitals, to identify the level of moderation and significance of the hospital type in the determinants of patient satisfaction, and to identify the switching behavior of patients between the hospital sectors.

2. Literature Review
2.1 Art of Care

The art of care examines the level and degree of care the patient receives from the staff. Which means, from the senior consultant to the most minor staff. Jean Watson describes caring as preserving dignity while addressing the person"s needs (Watson, 2010). It is a commitment to alleviate another"s weaknesses by giving attention and concern for the other (Vance, 2003). "Expert nursing" is the basic component of caring, but "interpersonal sensitivity" is key to the caring process (Eriksson, 1997; McNamara, 1995). It also stated that "nursing care" has shown to be a major

component of patient satisfaction (Kutney-Lee et al., 2009; Qu, Platonova, Kennedy & Shewchuk, 2011).

According to Goodrich and Cornwell in a 2008 publication "seeing the patient in the patient" describes this aspect as a part of patient centered care. Authors identify that the most important dimensions as, "empathy, compassion and responsiveness to needs of the patients as well as coordination, integration, communication, physical comfort, education, emotional support, relieving fear and allowing the involvement of the family. Furthermore, it was seen that this definition was consistent with the World Health Organization that health services should meet the needs of people as well as ensuring respect for people, prompt attention and good communication from the providers.

The doctor"s role in the patient affects overall in the evaluation of the hospital services irrespective of whether it"s a public or a private hospital (Murante, 2009). It was also a significant finding that a good relationship between the doctors and nurses was needed in a patient eyes. This builds up trust and respect in a hospital environment and leaves impact on patient"s anxious feelings. Also such behavior can have a huge effect on the emotional well-being of the patient (Otani, Waterman, & Dunagan, 2012; Russell, Johnson, & White, 2015).

In a comparative study by Taner and Antony in 2006, it is depicted that in private hospitals, "caring" carries the highest satisfaction levels and importance among patients. In their discussion it was evident that the perception of "politeness of hospital personnel" ranked the highest from a 40 items perception basket. Furthermore they stated that private hospitals rank high for dimensions of "trust the doctors and nurses provide" and "knowledge of doctors and nurses". In contrast, even if both of the above factors fall under the "Art of Care" variable, in public hospitals what ranks highest was the "knowledge of doctors and nurses".

It was highlighted that public hospitals had experienced physicians compared to private hospitals. This was an important indication that the patients trust the doctors however it was found that the security levels patients received from the physicians in public hospitals were low as compared to private hospitals which indicated low patient confidence levels in public hospitals. This was evidence that this scenario was not due to a lack of knowledge and experience of the doctors but to the lack of qualitative communication between the patient and the doctors. If doctors spend qualitative time with their patients, their overall confidence levels should have been higher. This was again confirmed in the study with the public sector getting low satisfactory levels for information flow and communication attributes (Taner & Antony, 2006; Sitzia & Wood, 1997).

The importance of understanding the augmented need for discipline, professionalism and empathy towards the individual indeed crucial. This was evaluated in both public and private hospitals in Hyderabad (Khan & Fatima, 2014). It was also advised that professionals should be educated to plan their time more efficiently and effectively emphasizing those activities that have direct impact on the patient evaluations.

Apart from listening carefully and explaining things in a manner patients will find easy to understand, the other factors like showing the respect for what they have to say and spending enough time with them are also discussed with regards to private and public. The levels of satisfactions in private hospitals are comparatively higher for these two factors unlike the public hospitals where the physicians have very little time to spend with the patients (Taner & Antony, 2006). Given that in the Sri Lankan public hospitals the doctors have a massive patient load, they should concentrate on the factor of time. The medical personnel, play a vital role in decision making of the patients in their future choice of the hospitals (Taner & Antony, 2006).

Reputed physicians in the country are known to shuffle between different hospitals visiting an unreasonable number of patients a day. This makes them completely incapable of giving any amount of adequate time and assurance to patients (Siddiqui & Khandaker, 2007). In an ethnographic study done at a public hospital, the researcher found out that the physicians leave the public hospitals early for private practice (Zaman, 2004). In a study done by Ricardo et al. in 2005, the researcher stated that 100% of the patients in the public hospitals and 47% in the private hospital are not attended to at the appointed time.

Staff giving personal attention to patients and behavior of the emergency staff led to the private hospitals in Hyderabad being more famous among the patients as compared to the subsidized public hospitals. They have recognized it as the most important factor among the patients (Khan & Fatima, 2014). The private hospitals are making better efforts as compared to public hospitals for the fame since the private hospitals depend on the customers in order to meet the financial constraints and achieve profitability (Yesilada & Direktor, 2012). Private hospitals analyze the demand and cater it unlike the public hospitals that have no proper forecasts. This has led the private sector towards the continuous improvement of the processes.

The research results vary depending on the country, backgrounds, practices and beliefs. As per the study done in Romania by Laura, Dorel, and Florin in 2011, it was noted that the factor "Empathy" in the SERVQUAL aspect which covers the chosen literature variable "Art of Care" overall was rated as one of the least important variables. Still, their studies predicted that the private hospitals generated better satisfactory results for empathy - art of care in comparison to the public hospitals. The discrepancies between the expectations and perception was lesser in private hospitals compared to public (0.48 to 1.39).

2.2 Effectiveness of the Treatments

Effectiveness of treatments discuss the aspects of reliability and assurance in medical services. This is seen as one of the core aspects that determines the choice of a hospital facility or a physician. The main determination of a patient when he or she gets admitted is that they need to walk away from the hospital healthy and cured. Therefore the importance of the effectiveness of the medical treatments are highlighted by several authors (Sharkawi, 2000).

As per Donabedian in 1980, the technical quality of the healthcare is defined primarily on the basis of technical accuracy of medical diagnosis and procedures or the conformance to the professional specifications. This technical quality which

elaborates the effectiveness of the treatments given, was highlighted to be a key factor among the patient‟s expectations (Lam, 1997).

This also included the aspects of punctuality of the treatments and medicine, medical responsiveness, proper pain management and assurance (Vandamme & Leunis, 1993). Patients‟ perception on pain management was extremely satisfactory in private hospitals compared to public hospitals making private hospitals the majority preference among the residents of Hyderabad (Khan & Fatima, 2014).

It seems that literature favored public hospitals. Unlike the other factors were a variation was seen. Here, in UAE the researcher stated that the patients of public hospitals were very confident of the treatments that were done and thus liked returning back to them. Explanations of results clearly given and receiving medication on time were some of those factors that alerted the patients (Fabnoun & Charker, 2003).

The need within the patients for accurate and credible treatment was evident in the study done in Turkey where the expectations were at its peak. This was followed by the importance of right and prompt service performance and ability of performing the service as promised and accurately in the private hospitals. It was seen that in the public hospitals, the prompt service performance was not expected by patients. The researcher concluded that both public and private hospital patients evaluate this as the most expected and satisfying factor, indicating that the hospitals in Turkey, do not fail to give credible and accurate medicine irrespective of what dimension they fail in.

In a similar fashion, it is seen that in Sri Lanka, most of the public physicians visit the private hospitals. So the treatments are mostly done by the same provider irrespective of whether it‟s a private or a public hospital. As per the Central Bank Report (2015) there are 17,129 qualified doctors in Sri Lanka. In that case, the effectiveness of the surgery treatment performed is not questionable but the other factors such as timely treatments, punctuality and effective pain management are questionable due to high volumes of patients in the public sector. And also in Sri Lanka as per Central Bank, Socio Economic Data (2015) the life expectancy of the Sri Lankan citizens, is at a higher rate (75.3yrs) in comparison to other selected Asian countries.

Rannan-Eliya et al. (2014) states that if the public hospitals of Sri Lanka are not resource constrained and had a greater investment from the government, the public sector seems to deliver equal or better quality of treatments compared to the private sector. The authors‟ findings state that in treatment and management, public patients were satisfied better compared to private patients (70% vs. 62%).

2.3 Administration Potency
Administration potencies of hospitals and its dimensions are a widely discussed factor that affects patient satisfaction (Aagja & Garg, 2010; Otani & Kurz, 2004; Arasli, Ekiz, & Turan, 2008; Shaikh, 2012). Administration of a hospital include many factors like admission, waiting times, protecting health information, hospital overcrowding and discharge procedures etc. that concern the patients from the time they are admitted in to the hospital until they get discharged. Struder in 2003 stated that improving the administration processes showed an improvement of overall

patient evaluation of private hospitals. This has been supported by the findings in the post-surveys, showing that the administration processes of the hospitals were both difficult and confusing to follow. These are: observation of the patients according to the appointments scheduled, availability of the doctors and the on-time delivery of reports are some other factors that were measured according to a Likert scale (Khan & Fatima, 2014).

Starting with the admission procedures, it was observed that patients seemed to find convenient when there was a simple procedure to admission and easy access to services at hand. This in turn, gives them a good head start. (Curry & Sinclair, 2002).Adding to that, there are delays that might happen during the hospital stay. These have shown to be extremely unnecessary and unreasonable. This not only dissatisfies patients but also foster anger in them. This was also confirmed in the study of the airline industry that anger is the most dominant reaction to delays (Diaz & Ruiz, 2002). It was also noted that a "planned admission" tends to have a greater positive influence on the patient evaluation (Veenstra & Hofoss, 2003).

Among the 40 items in a list of expectations pertaining to public hospitals "ease of admission" and "performance of services in the shortest time possible" were ranked the least while this was ranked to be two of the most expected items in private hospitals. Satisfaction resulted in a gap scores of -0.19 and -0.49 in private and public hospitals respectively. This shows that patients were dissatisfied in both groups of hospitals. On that note, it can be deduced that there is more dissatisfaction among the patients of public hospitals in Turkey (Taner & Antony, 2006). In contrast to the above findings, it was stated that in India, government hospitals have easy and legally amenable admission procedures compared to the private hospitals and the patients seem to be more satisfied (Padma, Rajendran, & Sai, P. 2010).

Trustworthiness of the administration was indicated to be an important factor in the study done in India. It proved that both groups of hospital patients were satisfied with the level of trust worthiness, concluding that the private sector offers a better satisfactory level (Padma et al., 2010).

Many hospitals measure the waiting time as the average time from the patient"s arrival to the time where the patient is placed in a room and treatment begins. (Shelton, 2013; Hospital and health networks, 2008). It was also noted that the most difficult part was not the long hours they had to wait but the staff having no clue how best to advise the patients of how long they would possibly have to wait (Emergency Department Resources, 2008).

In 2008 the study conducted in Ontario stated that long waiting time leads not only to the dissatisfaction of the patient but also the increased risk of death. (Laupacis, 2011). The average waiting time in an emergency room in 2007 was found be 4 hours and 5 minutes and state wise the waiting times differ from 2 hours to 4 hours (Nationwide emergency room pulse report, 2007).

Patients in public hospitals unlike in private hospitals carry less expectation in relation to waiting times. Since public hospitals offer subsidized prices, an influx of a crowd is to be expected. Therefore, waiting times are unavoidable. (Taner & Antony, 2006).

This was also confirmed through a study done in Hyderabad that the "time management" of the private hospitals is far better than the public hospitals (Khan & Fatima, 2014).

When patients run out of space, work is poorly organized and proper procedures are not in place, this means the entity – clinic, observation rooms or theatres are overcrowded. This leaves patients with dissatisfaction that cannot be helped. (Horwitz, 2009). Overcrowding can be a result of unrealistic waiting times (Derlet, Richards, & Kravitz, 2001). This is reflected in patients waiting in the hallways and all beds in wards occupied. This is mostly seen in public hospitals unlike private hospitals. The private hospitals were much more flexible in administration policies with regards to visitors compared to public hospitals which have a designated time for visits (Khan & Fatima, 2014).

After treatment is completed or the patient needs to be discharged urgently, the administration policies regarding the discharge process plays a vital role. In Turkey, it was found that the patients are having negative experiences during this discharge process which shows a gap between the expectation and the perception of -0.06 and -0.14 in private and public hospitals respectively (Taner & Antony, 2006).

Type of safety measures the hospital has to safeguard patients with, influences their perception with respect to quality. The administrators and the management should make sure that the facility is fitted with such safety measures and thus representing an ethical imperative show casting the fundamental philosophy of medical care (Duggirala, Rajendran, & Anantharaman, 2008). An ethical imperative showcasing the fundamental philosophy of medical care (Duggirala et al., 2008). According to the author there isn"t any difference between public and private hospital.

The administrative procedures namely trustworthiness and safety, had a high impact on the public hospitals in India whereas private hospitals had high levels of satisfaction pertaining to image and trustworthiness (Padma et al., 2010). Public hospitals seem to be less sophisticated in practice as compared to the private hospitals. This is due to its bureaucracy, overcrowding and long waiting lines, lowering the level of service quality and patients" perceptions differing from private hospitals (Zamil, Areiqat & Tailakh, 2012). In a study done in Romania, it was stated that the data compiled with regards to the aspects discussed above was lowly-rated and considered by the patients to be unsatisfying (Laura et al., 2011). In contrast to Romania, public patients in United Arab Emirates are on the whole more satisfied with the administration potencies. This encompasses admission, discharge, waiting time and the time that lapses between admission and a patient being taken to his or her room. Here we see researcher notes that expectation levels are low. Therefore, resulting in higher levels of patient satisfaction. This can be viewed sign that government hospitals enjoy more funding and patronage increasing staff strength, the number of beds and the overall infrastructure of UAE.

2.4 Infrastructure
A patient judges a hospital the moment he/she lays eyes on it. This occurs even before the service is rendered and the experience begins. Patients unconsciously ask themselves if they feel this is the right place for them. Or whether they would be

returning to the medical facility again. Therefore in understanding the connection between the quality in the physical environment and the patient satisfaction it is understood that it has a long lasting impact on the performance of the entity which ever public or private, and its ability to provide a qualitative care.

Infrastructure, also known as man-made physical environment or "servicecapes", is one of the most important factors that brings to light the stark contrast of patient satisfaction between the public and private hospitals of Sri Lanka. This includes all the "tangibles" that Parasuramen et al. mentioned in 1988 which are equipment, appearance of facility, signage, food, availability of technologically developed resources, washrooms, resident rooms, emergency facilities, pharmacies , blood banks etc. (Padma et al.,2010; Duggirala et al., 2008). The concept of infrastructure has been worded by different researchers in their findings, Tomes and Ng (1995), Andaleeb (2000), Reidenbach and Smallwood (1990), Otani and Kuruz (2004), Rao et al. (2006) and Duggirala et al. (2008). All of them wrote about different aspects of infrastructure in their studies highlighting the importance of factoring "physical environment" into service quality and patient satisfaction.

A study done in India observes that the availability of facilities like ramps and elevators in the public hospitals have enhanced the satisfaction of the patients. However, this is little compared to the private hospitals where these facilities are made to be an absolute must-have. Availability of these facilities have increased the satisfaction of private hospital patients, stating that in private hospitals, infrastructure is a significant indicator of patient satisfaction (Padma et al., 2010). Through a research in Chennai in 2008 it was found that the consumers rate the appearance of the building, interior decor, atmosphere and layout as important (Duggirala et al., 2008). A study that was done in Hyderabad confirmed that the rate of accommodation in private hospital wards was always satisfactory unlike the public hospitals where not more than 15% of the respondents thought it was satisfactory (Khan & Fatima, 2014).

In the same study, the researcher states that in the dimension of the facility being "spacious" the government hospitals depicted higher satisfaction rates. This is a well-known fact as public hospitals are government based and are naturally well- established in terms of space World Health Organization states that the 50% of medical equipment in the developing countries is in an unusable state.

Food is a key element included in the package the patient receives in private hospital. In public hospitals of certain countries it comes free while in others, it is subsidized. Patients would not mind paying a bit more than the subsidized price to get a better meal since that is one of the secondary satisfaction areas and also a reason why patients tend to get food from home or their relatives (Khan & Fatima, 2014). In order to satisfy this area, there are a lot of food management companies that have contracts with hospitals who are specialized in the food for health care facilities. Some even have contracts with dietary counselors to make sure the patient taste is satisfied without compromising nutritious diet. It is also said that food plays a vital role "game changer" in hospitals (Ross & Venkatesh, 2015). In the study done in Hyderabad, the quality of canteen and food facility in the government hospitals had lesser satisfactory rates in comparison to the private hospitals (Khan & Fatima, 2014).

Another dimension is, "how clean the premises are?". The patient perception towards the cleanliness of the hospital has a greater impact in the hospital quality (Ross & Venkatesh, 2015). This includes the environmental cleanliness, hygiene, hand washing techniques etc. Cleanliness is one factor that encompasses different elements of patients" experience during the hospital stay. Furthermore it was evident that the cleanliness in the private hospitals were excellent in comparison to the public hospitals where more than 55% patients agreed that private hospitals were better. Adding to the same note, bathroom facilities were also better rated in private hospitals. It was shown that around 1% thought that public sector was better but more that 45% responded that private sector washrooms were more hygienic (Khan & Fathima, 2014).

The availability of quality medicine is identified as a factor that is lacking in the public hospitals. The patients in those hospitals go through great difficulties in-order to get the prescribed medicines that are not given through the government free of charge, and ultimately resort to buying from outside. All though the situation is better in the private hospitals, they still lack the management of medicine. They have different brands of medicines at different prices, if the patient is ignorant about the medicine they try and sell the most expensive. This is vitally seen since the private hospitals are profit oriented (Siddiqui & Khandaker, 2007).

The public hospitals seem to be in a much worse condition compared to private hospitals regarding the equipment, water supply, and cleanliness of the premises (Siddiqui & Khandaker, 2007). It has been shown that the improvement in the tangibility matters enables better service-delivery and results in improved use of health care facilities. In Romania, among the SERVQUAL factors, "tangibles" for private hospitals was ranked as the most satisfying factor, however had the highest discrepancy in the public sector (Laura et al., 2011).

In contrast in the United Kingdom, both patients in the private and public sector states that infrastructure is the least important variable. Since the expectation is low, the perceptions and satisfactory levels could vary. If the expectation levels are high about a factor then the hospitals should be more concerned in satisfying that relevant factor (Sewell, 1997). This is also proven when "tangibles-physical environment" was listed as one of the least important and dissatisfied variables (Anderson, 1995). In Turkey, it is interesting to see that the dimensions of the physical environment are rated at different extremes. The researcher mentions that, in private hospitals the expectations were highest for the up-to date equipment while the least was for the food (Taner & Antony, 2006).

3. Methodology
3.1 Research Design and Approach
The current study is designed to focus on the patients" satisfaction and perception of the service quality offered in private and public hospitals. Quantitative researching will be used to find out how many patients hold a particular view, think or act in a particular way. Furthermore, researcher has used a deductive approach where the hypotheses were initially developed using the existing theories of patient satisfaction and then the research strategy was designed to test the set hypotheses. Salient factor, the switching behavior of the patients were analyzed. The statistical package SPSS 17

was used along with the Microsoft Excel in the creation of various graphs and calculations.

Sample population was considered to be the in-patients (currently admitted or who has been admitted within past 6 months of the study- Jan 01st 2016 to August 31st 2016) of Private hospitals and Public hospitals in the Colombo District.

Convenient sampling was used due to confidentiality and pure volunteerism. Researcher has taken 20% of the sample size from the patients who are currently admitted to the hospital and 80% from the patients who were admitted and discharged within the past 6 months of the study (February 01st 2016- August 31st 2016). This was due to the researcher's assumption that the in-patients will not be revealing the actual perceptions during their stay of the hospital, and to avoid patients being biased (This was noted when the pilot study was done). This assumption was also proven in the study done in Jordan by Zamil et al. (2012). This research is based on the Colombo district which has a total population of 2,375,000 (Department of Census and Statistics, 2015). Sample size was determined to be 384 as per Krejicie and Morgan (Krejcie, & Morgan, 1970).

The questionnaire included from all 4 areas including the general demographics section. They were asked irrespective of the hospital type. However due to the validity and reliability few questions had to be omitted after the pilot study. The omissions are shown in Table 1.

Through critical analysis of the literature, 4 important independent variables which are considered to be significant in determining the patient satisfaction has been identified. These variables are shown in Figure 1. The list of hypotheses is shown in Table 2 and operationalization of variables is shown in Table 3.

Table 1
Questions Omitted after the Pilot Study

| Question Number	Statement	Description
A_3.8	Sometime the doctor makes you feel that you are wasting his or her time.	Patients could not express how they experienced the business minds of the doctors. Probably they left this blank since they didn't want to express as they will still be taking medicines from the same doctors.
I_4.1	The buildings could have been improved more	Some patients didn't respond to this question as they might have not placed any importance in the "building improvements". Basically they had no way of figuring the developments that were needed.
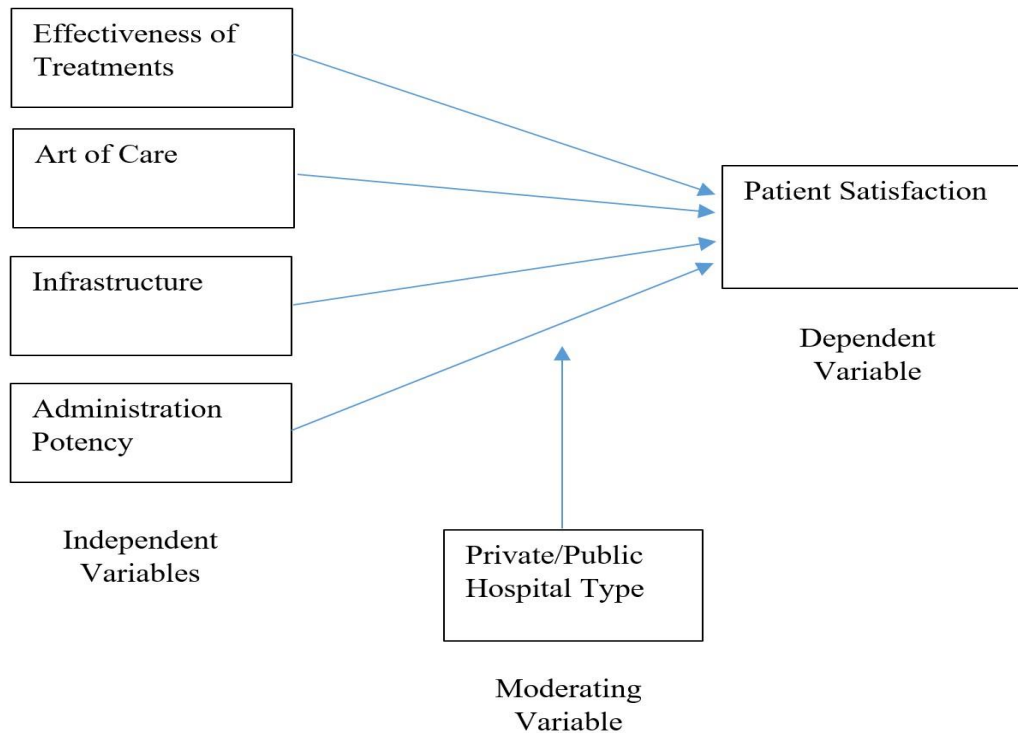
Figure 1. Conceptual framework

Table 2
Hypotheses

H1$_0$: There is no association between effectiveness of treatments and patient satisfaction
H1$_a$: There is an association between effectiveness of treatments and patient satisfaction
H2$_0$: There is no association between infrastructure and patient satisfaction.
H2$_a$: There is an association between infrastructure and patient satisfaction
H3$_0$: There is no association between art of care and patient satisfaction.
H3$_a$: There is an association between art of care and patient satisfaction.
H4$_0$: There is no association between admin potency and patient satisfaction.
H4$_a$ There is an association between admin potency and patient satisfaction

Note. Drawn by the researcher

Table 3
Operationalization

Independent variable	Dimensions in concern	Measurement
Art of Care (Staff)	Adequate communication, Time management, Positivity, clear explanation, knowledge and experience of personnel, care compassion and empathy	5 point Likert Scale (Strongly agree, agree, neutral, disagree, strongly disagree)
Effectiveness of Treatments	Delivering what was promised, accurate pain management, effective medication, treatment turnaround time	5 point Likert Scale
Infrastructure	Emergency facilities, cleanliness of washrooms, technology equipment, food, Signage, room expectation	5 point Likert Scale
Administration Potency	Waiting time, Protection of the health information, convenience of admission and discharge, overcrowding, visitor management , Safety measures	5 point Likert Scale

4. Findings and Discussion

All the variables were proved to be valid and reliable. Cronbach‟s alpha of all variables in the table has a value more than 0.7. Therefore it is evident that all variables are between acceptable and good internal consistency (Sekaran & Bougie, 2016). These results are shown in Table 4. The Validity tests were conducted to ascertain the validity of the questions raised through the questionnaire covering all variables. These results are shown in Table 5 and Table 6.

The sample as mentioned obtained for the research was limited to (currently admitted or who has been admitted within past 6 months of the study- Jan 01st 2016 to August 31st 2016) of Private hospitals and Public hospitals in the Colombo District. The findings relate to the said sample since the researcher states that in order to avoid "biasness" of patients in revealing the accurate information while they are inpatients. There were no other constraints to the respondents in the light of income, gender or age.

Table 4
Reliability Test Results

Variable	Cronbach‟s alpha
Effectiveness of Treatments	0.935
Art of Care	0.870
Infrastructure	0.915
Administration Potency	0.930
Patient Satisfaction	0.895

Note. Survey Data

Table 5
Summary of Key Measure's in Validity Tests Results

Variables	KMO	p-value of Bartlett's Test of Sphericity	Average variance E (AVE)	Composite Reliability (CR)
Effectiveness of Treatments	0.811	0.000	0.801	0.952
Art of Care	0.856	0.000	0.581	0.898
Infrastructure	0.829	0.000	0.558	0.928
Administration Potency	0.813	0.000	0.762	0.948
Patient Satisfaction	0.779	0.000	0.674	0.922

Source: Survey Data

Table 6
Discriminant Validity Results – Main Survey

		Effectiveness of Treatments	Administration Potency	Art of Care	Infrastructure
Effectiveness of Treatments	Pearson Correlation	Ave= 0.801			
Administration Potency	Pearson Correlation	.164**	Ave= 0.762		
Art of Care	Pearson Correlation	.078	-.073	Ave = 0.58	
Infrastructure	Pearson Correlation	.051	-.144*	.462**	Ave= 0.558

Note. ** Correlation at the 0.01 level (2- tailed) * Correlation at the 0.05 level (2- tailed)
Source: Survey Data

Effectiveness of treatments (P value= 0.046), Art of care (P value= 0.034), and Infrastructure (P value= 0. 000), has a significant association with Patient satisfaction since the P value = 0.000(<0.05) at 5% significant level. Hence the null hypothesis is rejected at 5% significant level and the alternate is accepted. However, administration potency failed to demonstrate such. Private hospitals demonstrated better in Infrastructure and Art of care while Public led the Treatments efficiency and administration.

Y=2.472+ 0.200X1 + 0.171X2

Where Y is the patient satisfaction, X1, the art of care, and X_2 the effectiveness of treatments

When the dimensions were tested to be fitted to the best model, dimension of the infrastructure becomes insignificant. (Annexure 12- Annexure 14)
Income (P value = 0.000) and Hospital Type visited (P value = 0.063) had a

significant association with the patient satisfaction since the P value (<0.05) at 5%

significant level. Patient"s age, gender, hospital type and the number of past visits didn"t have a significant association with the overall satisfaction of the patients. (Annexure 1)

All the cost indicators (Doctor"s fees, Room charges, Investigation fees, Qualitative overall service for the price) had a significant association with the overall satisfaction (P value=0.000 that is P value (<0.05) at 5% significant level). (Annexure 2)

In the association with the hospital type with each demographic variable and independent variables, the indicators, gender, age, reason of visit and cost have a significant association with the hospital type. The Pearson Chi Square is <0.05. Whereas rest of the indicators P value is >0.05. (Annexure 3)

Switching behavior that was analyzed using the qualitative components suggested various reasons. Public to Private were mastered upon infrastructure, sanitation, food and security while reasons to shift from Private to Public gathered around the corners of kindness of the staff, costs, punctuality of the doctors, inefficiency, admission and discharge procedures etc. It was highlighted that the price the patients pay was always a yard stick in a private hospital upon determining any perspective.

Independent variables of "effectiveness of treatments", "art of care" and "infrastructure" became statistically significant denoting that they have a relationship with patient satisfaction. "Administration Potency" was omitted due to insignificancy. Variable "infrastructure" did not show a significance in the regression therefore did not qualify to the best fitted model. Final variables shown through the revised conceptual framework denoted that increase of effectiveness of treatments and art of care would positively affect patient satisfaction. Next, researcher analyzed whether the "hospital type" affected satisfaction. The insignificant moderation explained that hospital type did not affected patient satisfaction that was generated through the variable "art of care". However other variable, "effectiveness of treatments" showed a significance with hospital type. Hence the researcher concluded that satisfaction generated through the effectiveness of treatments has an impact with the hospital type. (Annexure 4- Annexure 11)

The global literature appears to aid the public hospitals positively in effectiveness of treatments variable, which is parallel with the current research findings in the Sri Lankan context. This is also rated as one of the most critical variables in the Romanian healthcare context and researcher points that the private sector has a lot of discrepancies (Laura et al., 2011).

The indicator which denoted whether or not the doctors explained the results of the test reports, the public hospital patients extended higher level of satisfaction and agreement in this study. This falls in line with the UAE health trend researched by Fabnoun and Charker in 2003 where the public hospital patients were very confident that the doctors were reliable and explanatory in the conditions where they wanted the reports briefed. This is apparent due to the state doctors receiving the highest training and competence when compared to the private doctors who pass out young.

Credibility of the medicines given and whether or not the staff was informant was another indicator that was given importance through the global literature. In this case patients who got admitted to public hospitals agreed that medicine was accurate and they were satisfied. However the private hospital patients disagreed whereas in Turkey this was not the same. As per Taner and Antony in 2006 both sectors took this serious and critical hence, the patients who admit to either sector count the seriousness leading to higher levels of satisfaction. The difference of satisfaction in the two contexts (Turkey and Sri Lanka) was seen due to the illiteracy, ignorance or innocence of the public patients. In contrast to the private patients who included the higher socio economic group and showed a higher level of patient education. Therefore they had higher expectations on the credibility.

On the other hand, the study done in Hyderabad by Khan and Fatima in the year 2014, has contradicting ideas where the private hospitals are leading in the satisfactory pain management and medical responsiveness. As discussed, hospitals in India are highly profit-oriented but at the same time they provide an effective service though we do not experience the same in Sri Lanka.

The analysis of the study notes that the patients of the private hospitals did not trust that only necessary investigations were performed. The disagreement and the lower satisfaction noted that the patients suspect that private hospitals do different test to charge high and when they are unable to diagnose the proper illness at once. However, this remains to be an unknown answer as this is not the same in the public hospitals. Since the investigations are done for free most of the time, it is made sure that only the needed ones are done for a patient saving the hospital cost and patient‟s time.

As per the literature, the researcher was eager to understand whether Sri Lanka which is famous for delivering of healthcare services at low costs, offers the service compromising the quality. Furthermore, the fact that it states the patients pay higher amounts to private hospitals because they believe that the private hospitals offer a better service. This could be due to private hospitals hiring famous physicians and them having more time for private patients. In researching whether this could be true, researcher notes that physicians gets paid for each and every patient visit they do in a private practice which is not the case in public hospitals where they are paid only a fixed salary.

This study falls in line with same research, in Turkey by Taner and Antony in 2006, where the private patients are highly agreed and satisfied with the art of care dimension. The "politeness of the personnel" was identified as the most satisfied indicator in that study where as in Sri Lankan context it was identified to be the staff positivity and honesty because the patients have a strong will to get cured and thus staying positive affects much. Dissatisfaction towards the communication flow and the unavailability of two way communication was seen in many contexts, similarly even in the Sri Lankan context the doctors fail to satisfy the patients in this criteria.

The studies done in Bangladesh, (Siddiqui & Khandaker, 2007; Zaman, 2004) state that the reputed physicians shuffle themselves in many hospitals in the country there by depriving of a proper qualitative time for patients. The best physicians of Sri

Lanka are said to be from the public hospitals where they were brought up with a lot of training and guidance and later they get busy with many private hospitals in the country .This has led the patients of the both sectors to remain very dissatisfied but especially the public patients as the physician is not able to spend qualitative time due to the higher private patient loads and appointments.

Even if the private hospitals of India are purely profit motive, they are famous among the patients for better personal attention, which is seen as a lag in the profit motivated Sri Lankan private hospitals, proven through the low agreement and satisfaction levels in that indicator. In contrast, Laura et al. (2011) confirms that patients in Romania didn"t place an importance in this factor since expectations were least rated. Proving that patient expectations would differ from country to country, race to race and culture to culture.

Studies have been done in different contexts to identify the importance of the infrastructure which covers the physical environment. Duggirala et al. (2008) state in Chennai the infrastructure was highest rated in the private hospitals than the public hospitals where patients rated the hospitals using the interior decor and available physical facilities. Even if in the Sri Lankan context the patients don"t place such importance, it is the same role private hospitals play. It was also seen in that study, government hospitals were spacious and patients were satisfied over it, whereas Sri Lankan public patients were not satisfied probably because there are so many patients and the limited space hardly to accommodate all of them.

The food was poorly rated in the public hospitals in the research while the private hospitals were highly rated. A customization is possible due to the amounts that are charged to the bill by the private patients. However, this is not the case in the public hospitals where they have to cook for huge numbers daily – free of charge. The costs that the government incurs for this is massive, hence, there can be instances that the food is not up to the levels of individual joy. This was also the same in the Pakistan and the Indian context which was stated in the literature review. Cleanliness as rated in the Sri Lankan context where the private hospitals are far cleaner than the public was the consistent ideology that was seen in the literature across many of the low middle income countries. The authors stated that as per the hospital administrations it is not easy to keep the premises clean when the people do not behave in such a way that they are kept clean. The frustrated management furthermore complained that the public hospital washrooms are cleaned once in every two hours but the patients who use those do not contribute to keep them tidy.

In contrast, this factor wasn"t given any importance at all in the European context. Sewell in 1997 stated infrastructure as the least expected and evaluated factor in the hospitals. Which proved that there is no disparity of infrastructure both sectors and patients don"t have to expect this, as it is a normal presence in Europe. However Taner and Antony (2006) state in Turkey it was reported that patients expected proper infrastructure and was highest dissatisfied over it similar to the Sri Lankan context public hospitals.

Even if the literature proves that in some contexts administration was a frequent observer, this seems to be inapplicable to the Sri Lankan contexts. However, through

the questionnaire it was found that public hospitals had better potencies than the private hospitals which denoted that private hospitals were marginally satisfactory in the indicators of punctuality, information confidentiality and crowd control while the public hospitals were way better in admission and discharge process.

The insignificance in the correlations should have been due to patients" mentality that these things won"t change even how much they try since private hospitals are managed by a top board that patients don"t even get to see, and the public hospitals are managed by ministries. Administration potencies cover various norms and regulations that are put in to the practice by their management. For example, crowd control in the public hospital is inevitable due to the high number of patients moving in and out. Hence, sometimes the management is also left unanswered. Patients know that measures are taken for proper crowd control. This is the reason why the methodical queues, and proper numbering systems are in practice. They understand that it is a big role these hospitals play by giving free medication to anyone who enters. Even if the patients disagreed to say that crowd control was proper, the researcher has identified that the patients don"t make administration potency indicators to influence their level of satisfactions.

In the private hospitals, this factor was least rated. The admission and the discharge process were seen to be hectic. This is due to the rules and regulations they practice. For example, the calculation of the room rate and check out times are disadvantages to patients. This can be due to various reasons better known to them. Patients are not given proper information at the time of admission. As per some patients, had they known the format of room rate calculations or the exact check-in time, they would have got admitted at the most beneficial time to get the maximum. However these are policies that are common to any private hospital therefore, it doesn"t seem to influence the patient satisfaction positively or negatively.

On the contrary, it could also be said that this administration potency is a never satisfying dimension. The literature supports dissatisfaction. In developed countries like United Kingdom and United States of America, the patients are given survey forms before admission and collected after admission. These potencies cannot be customized like any other variable. Art of care will be differed when the staff understands the patient. The effectiveness of the treatments will also differ while choice of a different room would manipulate the infrastructure as well. Therefore, it"s well said that the administration potencies will not be different from a patient to patient thus the level of satisfaction will vary marking it hard to determine the level of influence with the overall satisfaction.

It was clearly seen through the analysis that few of the demographic variables had no association with the overall patient satisfaction. Gender, age, and no. of past visits had no significant association defines that the patient satisfaction is not influenced by what gender the patient is and what age he/she bears and how many times the patient has visited to the hospital before. However, it was noted that the level of income and number of days stayed affected the overall satisfaction. The higher the number of days higher the satisfaction recorded. This was analyzed by the researcher to witness that when a patient gets admitted for a surgery, hospital earns the profit within the first few days, the longer he has to stay is reducing the profit to the hospital even if the

patient pays the room charges. If another patient was admitted to another surgery discharging the initial patient the hospital profit could have been more. Therefore, the hospital strategy is giving good care and treatments for the patients and thus getting the patients discharged soon. That is why higher the number of days higher the satisfaction the patients receive.

5. Summary and Conclusions
As per the analysis and the discussion it was supported that the private hospitals are making better efforts to influence the patient satisfaction since they have to depend on the customers in order to meet the financial constraints and get the estimated profitability, which is not in public hospitals that are run through government patronage. Private hospitals have ended up in giving a good personal attention and satisfying the criteria of best "art of care" provider. However, they should carefully design more patient oriented strategies to enhance the reliability since the study proves that the patients trust public hospitals on the "effectiveness of treatments".

All in all, private hospitals were marginally higher in generating the overall satisfaction when compared to public hospitals within the chosen variables. Public health system is proved be good in administration and reliability however services towards the patients are inadequate. It was mainly identified that lack of "physical reach" forced the patients to use more expensive private facilities. The public hospitals should design better strategies to enhance the staff care to patients and make a better environment therefore giving the patients the highest "healthcare access" for the quickest recovery. The inability of provision of such an access is due to rapid growth of population, overburdened hospitals government funding, low government interest in development of new healthcare systems and rapidly developing private hospitals.

6. Future Research
Future research concerns to obtain samples from different districts in order to be applied to the Sri Lankan Healthcare industry as a whole. The research was based on the Likert scale and the score was calculated with limited access to the qualitative insights. Future research can adopt complementary research methods (observation of naturalistic data and analysis of qualitative interview data and usage of qualitative questions) in the questionnaires which would lead the researcher to get more information about the physiological, individual, contextual and situational factors. Future research could include a comparative study of satisfaction including the foreign medication since currently it"s becoming more of a practice and one of the main competitor to the Sri Lankan Healthcare industry.

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Annexures
Annexure 1
Table 6
Demographic Variables

Indicator	Pearson Chi-Square	Conclusion
Doctors" fees	.000	Significant association

Room Charges	.000	Significant association
Investigation fees	.000	Significant association
Qualitative service for the price	.000	Significant association

Associations – Demographic Indicators and Overall Satisfaction

Annexure 2 -Cost Variables
Table 7
Associations – Cost indicators and Overall Satisfaction

Indicator	Pearson Chi-Square	Conclusion
Gender	.293	No significant association
Age	.235	No significant association
Income	.000	Significant association
Hospital Type Visited	.063	Significant association
Days stayed	.050	No significant association
No of past visits	0.833	No significant association

Source: Survey Data

Annexure 3 - Evaluating the Associations with the Hospital Type
Table 8
Associations – Hospital Type

Indicator	Pearson Chi-Square	Conclusion
Gender	.049	Significant association
Age	.010	Significant association
Income	.302	No significant association
Hospital Type Visited	.779	No significant association
Reasons of visit	.000	Significant association
Cost	.000	Significant association
Effectiveness of treatment satisfaction	.070	No significant association
Art of care satisfaction	.096	No significant association
Admin satisfaction	.053	No significant association
Infrastructure satisfaction	.422	No significant association

Annexure 4 - **Evaluating the Moderation of the Hospital Type with the Independent Variables Infrastructure**

Table 9

Model Summary- Infrastructure

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.249^a	.062	.053	.97336555

Note. a. Predictors: (Constant), What hospital did you visit within the past 6 months, Zscore (Infrastructure_Mean)

Annexure 5

Table 10

ANOVA- Infrastructure

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.558	3	6.186	6.529	.000^a
	Residual	280.442	296	.947		
	Total	299.000	299			

Note. a. Predictors: (Constant), hos_infra, What hospital did you visit within the past 6 months, Zscore(Infrastructure_Mean)

Source: Survey Data

Annexure 6

Table 11

Coefficients- Infrastructure

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.264	.095		2.779	.006
	What hospital did you visit within the past 6 months	-.287	.137	-.144	-2.097	.037
	Zscore (Infrastructure_Mean)	.400	.092	.400	4.369	.000
	hos_infra	-.425	.138	-.263	-3.093	.002

Source: Survey Data

As per the above table it could be noted that the moderation of hospital type is significant in the independent variable of infrastructure as P value (<0.05) at 5% significance level.

Annexure 7- Effectiveness of Treatments
Table 12
Model Summary- Effectiveness of Treatments

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.212[a]	.045	.035	.98228857

Note. a. Predictors: (Constant), hos_eff, What hospital did you visit within the past 6 months, Zscore(Effectiveness_Mean)

Annexure 8
Table 13
ANOVA- Effectiveness of Treatments

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.392	3	4.464	4.627	.004[a]
	Residual	285.608	296	.965		
	Total	299.000	299			

Note. a. Predictors: (Constant), hos_eff, What hospital did you visit within the past 6 months, Zscore(Effectiveness_Mean)

Annexure 9
Table 14.
Coefficients- Effectiveness of Treatments

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.017	.080		.212	.832
	What hospital did you visit within the past 6 months	-.059	.114	-.030	-.520	.604
	Zscore(Effectiveness_ Mean)	.283	.079	.283	3.572	.000
	hos_eff	-.351	.114	-.244	-3.080	.002

As per the above table it could be noted that the moderation of hospital type is statistically significant in the independent variable of effectiveness of treatments as P value (<0.05) at 5% significance level.

Annexure 10 - Art of care
Table 15
Model Summary- Art of care

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.304[a]	.092	.083	.95745753

Note. Predictors: (Constant), hos_aoc, What hospital did you visit within the past 6 months, Zscore (Art_of_care_Mean)

Table 16
ANOVA- Art of Care

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.649	3	9.216	10.054	.000[a]
	Residual	271.351	296	.917		
	Total	299.000	299			

Note. a. Predictors: (Constant), hos_aoc, What hospital did you visit within the past 6 months, Z score (Art_of_care_Mean)

Source: Survey Data

Annexure 11

Table 17
Coefficients- Art of Care

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.191	.085		2.251	.025
	What hospital did you visit within the past 6 months	-.369	.125	-.185	-2.940	.004
	Zscore(Art_of_care _Mean)	.346	.075	.346	4.640	.000
	hos_aoc	-.030	.133	-.017	-.228	.820

As per the above table it could be noted that the moderation of hospital type is not statistically significant in the independent variable of Art of care as P value (>0.05) at 5% significance level.

Annexure 12

Table 18
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.282[a]	.080	.070	.64787

Source: Survey Data

As per the table it could be seen that the R^2 is 0.08, were the model describes 8% of the levels of patient"s satisfaction.

Annexure 13
Table 19
ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.754	3	3.585	8.541	.000^a
	Residual	124.242	296	.420		
	Total	134.997	299			

*Note.*a. Predictors: (Constant), Infrastructure, Effectiveness, Art_of_care

Annexure 14
Table 20
Coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.472	.328		7.535	.000
	Effectiveness	.171	.077	.124	2.227	.027
	Art_of_care	.200	.049	.256	4.075	.000
	Infrastructure	.002	.050	.003	.044	.965