



TOWARDS 5S TO IMPROVE PATIENT SATISFACTION AND CONTINUOUS QUALITY IMPROVEMENT IN THE HEALTHCARE SECTOR

A. Vinodhini

Research Scholar (Part time), Assistant Professor,
PG and Research Department of Commerce, Cauvery College for Women, (Autonomous),
(Affiliated to Bharathidasan University), Tiruchirappali, Tamil Nadu, India
Orcid id : <https://orcid.org/0000-0002-4432-9671>

Dr. R. Seethalakshmi

Assistant Professor, GITAM Hyderabad Business School,
Hyderabad, Telengana, India
Orcid id : 0000-0002-4227-3985

ABSTRACT

Goal: 5S (sort, set in order, shine, standardize and sustain) implemented in health care to improve patient satisfaction and to explore the role of patient satisfaction towards continuous quality improvement of the quality in healthcare sector.

Design / Methodology / Approach: The research framework consists of six phrase (1) The introduction part which includes the literature review (2) The research methodology adopted for the study and the objective framed from the past literature review (3) Result and Discussion (4) Conclusion .The collected data were analyzed by using Correlation and multiple regression to analyze the implication of 5s in patient satisfaction and its impact towards continuous quality health care services.

Results: The findings revealed a positive relationship between 5S and patient satisfaction and there is also a positive relationship between patient satisfaction and quality improvement services. When the patient satisfaction is increased the continuous quality of the services results positively

Limitations of the investigation: The study was conducted in 5S implemented hospitals. There were only limited number of hospitals which has implemented 5S thus it was considered as limited source available for the study.

Practical implications: 5 S can be implemented in healthcare to improve the quality.

Originality / Value: The study has proved the originality by presenting the application of 5S by studying the 5 S adopted hospital and its applications.

Key words: Health care, Lean tool, 5S, patient satisfaction, Quality improvement, Correlation, Multiple regression.

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1. INTRODUCTION

Healthcare industry being one of the leading service sector is facing a number of problems one such problem and the biggest challenges faced by the healthcare sector is delivering a quality service to its customers (Gopinath, 2011). Factors like long waiting hour, non-value added service, misdiagnosis, delay in treatment are some of the common issues faced by the patients in healthcare (Gopinath, 2019 a). If there is an issue in patient satisfaction then it results in reducing the quality of the healthcare services. (J Cutan Aesthet Surg., 2010) To face these issues there are many management methods to be adopted. One such management method is lean management. 5S is the best tool to be addressed to improve the patient satisfaction and the continuous quality improvement. Implementation of 5S Sort, Set in order, Shine, Standardize and Sustain (Shogo Kanamori., 2016). Sorting process help to separate the needed from unwanted items, Set in order helps to der the things in needed in placed and helps to allot the place for each items, Shine helps to maintain the cleanliness and mapping the visual controls methods, Standardize works on the roles of each individual to maintain the protocols at last sustain focus in the self-discipline of the personal commitment and leadership (Gopinath & Irismargaret, 2019). This study attempts to study the implications of 5s towards patient satisfaction and continuous quality improvement in the healthcare. Implications of 5S in patient satisfaction and implication of 5S in continuous quality improvement and examining how patient satisfaction impacts continuous quality improvement in health care. As 5S is been considered one of the key tool in lean management for healthcare (Gopinath, 2019 b).

2. LITERATURE REVIEW

The literature review supports the theoretical background of the role of 5s in patient satisfaction and the influence of patient satisfaction towards the continuous quality of healthcare services (Gopinath, 2019 c & 2019 d)

Table 1

S.No	Year	Journal	Author	Title	Aim	Result
1	2013	Journal of health Care	Lauren R.R Jennifer Phillips, Keely Brzo, Lynne A. Chafetz, Paul E. Craig	Experience-based design for integrating the patient care experience into healthcare improvement: Identifying a set of reliable emotion words	To identify and evaluate the types of emotions positive negative and neutral emotions for experience-based design improvement work in healthcare	Emotions plays a vital role towards patient centric care in healthcare
2	2016	BMJ	C Craig Blackmore, Gary S Kaplan	Lean and the perfect patient experience	To identify the waste defined as any activity that does not add value from the standpoint of the customer in Virginia Mason and to eliminate waste using lean	Lean is one of the best practice to be followed to eliminate waste in patient journey.
3	2016	Quality in Action journal	Ann Hagensen, RN, Et,al	Using Experience-Based Design to Improve the Care Experience for Patients With Pancreatic Cancer	Lean tool is implemented to Improve the Care Experience for Patients	The study results as there are three key areas to understanding and proper documentation of patient goals and , providing better resources for caregivers and improving care coordination
4	2016	Journal of health care	Norifumi Kamo, A. James Bender, Kavitha Kalmady, C. Craig Blackmore	Meaningful use of the electronic patient portal – Virginia Mason's journey to create the perfect online patient experience	To identify the factor contribution in healthcare factor like time efficiency, Patient-centeredness, Patient safety	The improvement interventions identified from the study were efficiency ,proper communication, patient-centeredness and Safety
5	2013	Journal of social science and medicine	Hirono Ishikawa , Hideki Hashimoto , Takahiro Kiuchi	The evolving concept of "patient-centeredness" in patient physician communication research	Patient centric care studies in four aspects conflict theory, utilitarianism, social constructionism.	The study reveals that's the major aspect of patient centric care is communication if communication is effecting all other aspects will be satisfied
6	2015	Journal of medical care	Hanan J. Aboumatar, Et,al	Promising Practices for Achieving Patient-centered Hospital Care	To identify promising practices for improving patient-centeredness, common challenges met, and how those were addressed.	Implementations of lean management leads to a clear picture of patient centric care.

Source: created by the author

2.2. Literature gap

In this literature review most have the studies have focused on patient centric care and continuous quality healthcare improvement using lean tools, 5S a lean tool is less focused. This study attempts to have a special focus of 5S a lean tool its implications in patient satisfaction and continuous quality improvements

3. RESEARCH METHODOLOGY

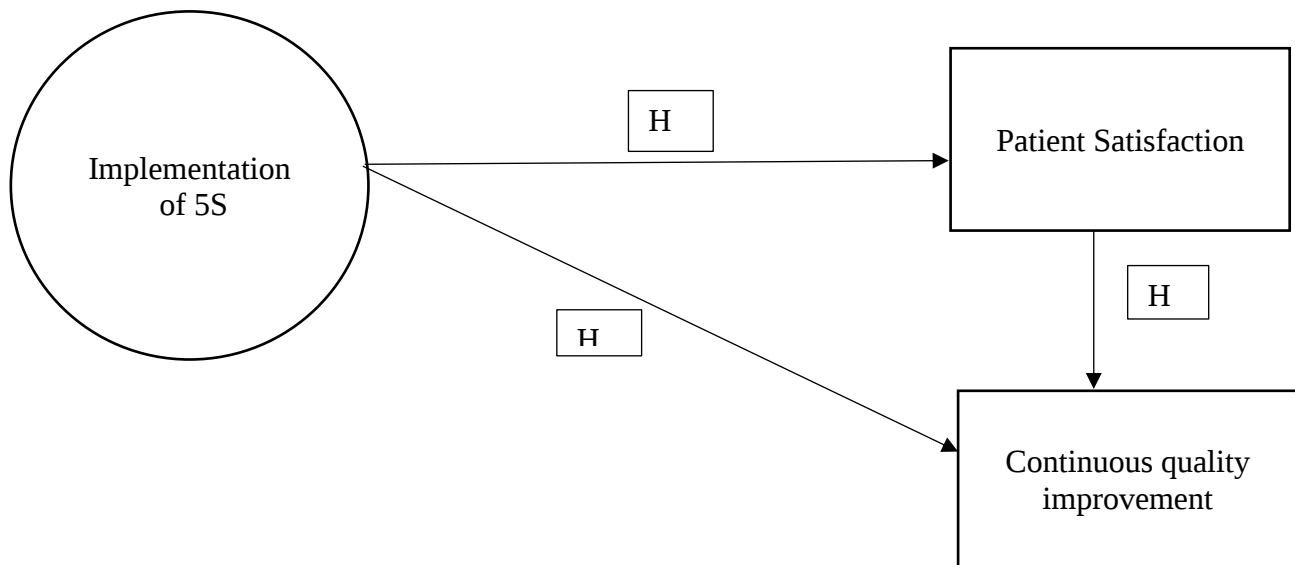
3.1. Objectives

The aim of the study is to examine the conceptual and empirical linkages between the 5s, patient satisfaction and continuous quality improvement of healthcare.

- To study the various dimensions of 5s

- To investigate the implications of 5s in patient satisfaction
- To investigate the implications of 5s in continuous quality improvement
- To examine the impact of patient satisfaction on continuous quality improvement by adopting 5s practices in healthcare.

Based on the literature evidence, it allows to analyses the gap among the relationship between the 5s, patient satisfaction and continuous quality improvement in the health care sector, the following conceptual model is framed and the relationships were tested subsequently.



3.2. Hypothesis

H1 Implementation of 5S will be positively associated with improvement of patient satisfaction

H2 Implementation of 5S will be positively associated with continuous quality improvement

H3 Implementation of 5S in Patient satisfaction positively influences continuous quality improvement.

3.3. Study Population

The research follows quantitative methodologies. Quantitative methods are applied for the survey, where questionnaire is administered in person and online to collect the response form the patient. An exploratory study is done to get insights on the relationship between 5S, patient satisfaction and quality improvement. The patients from the hospitals which has implemented 5s practices in and around Tamil Nadu were taken for the study.

3.4. Sampling Procedure

Purposive Sampling method is used to select the hospitals. Information were gathered from 26 hospitals for the study. Simple random sampling method is used to collect the data from the patients. In this stage, data is collected from 375 patients from the hospital which has implemented lean in the hospital

3.4. Data Collection: Research tools for the quantitative research

Survey using the questionnaire is distributed to the patients to study the perception on the implementing the 5S in hospitals for continuous quality improvement and to study the level of patient satisfaction.

The table 1 depicted internal consistency of each constructs for this collected samples. To ensure the reliability of the instrument, Calculation of Cronbach's α was done and the results proved the reliability of the scale.

Table 1 Reliability value for each construct

S.No	HRM Practices Dimensions	Cronbach's α
1	Sort	0.84
2	Set in order	0.87
3	Shine	0.80
4	Sustain	0.79
5	Continuous quality improvement	0.83
6	Patient Satisfaction	0.87

4. RESULTS AND DISCUSSION

To find out the relationship between the 5S, patient satisfaction and continuous quality improvement, correlation analysis and the multiple regression was done

Relationship between 5S, patient satisfaction and continuous quality improvement

Table 2 depicts the results of correlation analysis. It gives the Inter and Intra relationship among the constructs. Karl Pearson's coefficient of correlation was used to examine the relationship (Gopinath, 2017). The results indicate a significant positive relationship between selected 5S, patient satisfaction and continuous quality improvement

Table 2 Correlations between 5S, patient satisfaction and Quality improvement

	1	2	3	4	5	6
1	1	.340**	.351**	.359**	.390**	.366**
2		1	.326**	.359**	.412**	.321**
3			1	.473**	.381**	.314**
4				1	.416**	.393**
5					1	.516**
6						1

*Note 1 –Sort, 2-Set in order, 3-Shine, 4-Standardise, 5- Patient satisfaction, 6- continuous quality improvement,
 ** Correlation is significant at the 0.01 level (2-tailed)*

Source: SPSS output

Correlation analysis among the constructs was performed and results depicted in table. The results revealed the strong relationship among the constructs.

Multiple Regression analysis has been conducted to examine the hypotheses. H1 examines the significance impact of 5S on patient satisfaction. Results as statistics was obtained for 5S shows the coefficient of determinants is 0.885 that is the explained variance captured by the patient satisfaction by the 5S constructs is 86%. Also, based on the F value almost all the constructs were used as a predictor of patient satisfaction using 5S practices constructs. The standard error is 0.080 with the 0.05 confidence level.

Table 3 Multiple regression model for Patient satisfaction

Properties	Coefficients	Standard Error	t –value	P-value
Intercept	0.09031	0.038455	2.348472	0.019374
Sort	0.071773	0.012827	5.595528	0.000
Set in order	0.090517	0.026171	3.458666	0.000
Shine	0.391478	0.007209	54.30191	0.000
Standardize	-0.20609	0.022472	-9.17101	0.000
<i>Note : All the t-values are significant at p<0.05 level</i>				

The multiple regression model was done to identify the patient satisfaction based on the beta values as per unit of change in sort, it will increase 7 percentage in patient satisfaction. With regards to set in order, one unit of change in shine leading to increase of 9 percentage of patient satisfaction. Relating to standardize, a unit change in the same, leads to increase of 39 percentage of patient satisfaction. Where as in case of Standardize, there is negative change, where by one unit of change in Standardize, it is leading to decrease in the level of satisfaction among the patients (Suchitra & Gopinath, 2020 a). All the variables have a significant impact on the patient Satisfaction. Therefore, H1 remains supported.

Table 4 depicts the results of multiple regression analysis to test the hypothesis 2 which examines the relationship between patient satisfaction and Continuous quality improvement.

Table 4 Multiple regression model for Continuous quality improvement.

Properties	Coefficients	Standard Error	t –value	P-value
Intercept	0.15626	0.067617891	2.606713	0.000
Continues quality improvement	0.164414	0.018835968	10.32133	0.000
<i>Note : All the t-values are significant at p<0.05 level</i>				

The above table depicts every unit of change in the level of patient satisfaction, there is an increase of 16 percent towards the success of continuous quality improvement and there exists a significant relationship (Suchitra & Gopinath, 2020 b). Therefore, H2 remains supported.

Table 5 Multiple regression model for Patient satisfaction on Continuous quality improvement

Properties	Coefficients	Standard Error	t –value	P-value
Intercept	0.14526	0.067617981	2.606713	0.000
Patient satisfaction	0.164144	0.018835697	10.32140	0.000
<i>Note: All the t-values are significant at p<0.05 level</i>				

Source: SPSS output

$$\text{Quality improvement} = 0.14 + 0.16\text{Patient satisfaction}$$

From the above equation, it is inferred that, for every unit of change in the patient satisfaction, there is an increase of 16 percent towards the success of continuous quality improvement and there exists a significant relationship. Therefore, H3 remains supported.

5. CONCLUSION

The researcher found adoption of 5S in healthcare leads to test the impact of 5S practices on patient satisfaction and relationship between patient satisfaction and continuous quality improvement (Jaya & Gopinath, 2020). Also, the empirical findings supported by the developed regression models. This study reveals that a strong relationship between the 5s, patient satisfaction and continuous quality improvement (Gopinath & Kalpana, 2019). It is concluded

from the findings 5s is the best practice to focuses on patient satisfaction which in turn leads to overall quality improvement of the hospital factors like well timed, well organized and patient-centered delivery of quality are resulted (Kavitha & Gopinath, 2020).

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