

# Effect of the Organizational Culture on the Sustained Quality Improvement in Government Healthcare institutions in Sri Lanka- A Study in Regional Director of Health Services Area Kurunegala

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**Abstract:** Japanese 5S was selected as the quality improvement tool in this study as 5S is the stepping stone for many quality improvement concepts and its roots date back to 16<sup>th</sup> century. When successfully implemented, 5S gives many benefits to the organization as well as its stakeholders. Though 5S itself has a tool to sustain, most of the organizations find it difficult to sustain the 5S practice over the time. Therefore the objective of this study was to find out the effect of the organizational culture on the sustainability of quality improvement in Government Healthcare institutions in Sri Lanka. This study was a descriptive cross sectional study with two components. First component was to identify the degree of 5S sustainability in each healthcare institution by validated evaluation sheet. Second component was to determine the effect of the organizational culture on the sustainability of 5S programmes in selected study setting which were government hospitals in RDHS area Kurunegala. Self-administrated questionnaire was used for this purpose. Total study population was 543 employees of all the categories of hospital staff. Calculated sample size was 422 and 375 were responded to the questionnaire giving response rate of 88.9%. The study revealed that organizational culture has great impact on sustainability of quality improvement while value of the organization is the major contributing factors.

**Keywords:** Organizational culture, Quality Improvement, 5S, RDHS area Kurunegala.

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## 1. INTRODUCTION

Sri Lanka is a one of the few countries which provides free health care to all the citizens irrespective of their status, income or geographic location, and achieved remarkable health outcomes, particularly relative to neighbouring countries with a similar income range. Though we have better health outcomes, productivity and service quality of Sri Lankan public health sector has been not very attractive. So there has been high felt need to policy makers to improve the productivity and service quality of public health sector. 5S has been identified as the entry point to improve the service quality in health care provision in Sri Lankan health sector.<sup>1</sup>

5S is a Japanese concept used globally to improve productivity and quality. It was introduced by Takashi Oshada in the early 1980s. 5S is the acronym for 5 Japanese words which stand for Seiri, Seiton, Seiso, seiketsu and shitsuke.<sup>2</sup> 5S is the stepping stone for many other quality techniques and process improvements such as Kaizen, Just-in-time (JIT), Six Sigma and Total Quality Management (TQM). Seiri is the systematic removing of all items from the work place that are not needed for processes and activities. Seiton is the arrangement of needed items so that they are easy to use and label them so that providers can find them easily and put them away when they are done. It can be simply defined as that all equipment should have dedicated places and that equipments should be kept in their places. Seiton is important in health care facility because it eliminates many types of wasteful clinical and administrative activities. Seiso is the third component of 5S concept that emphasizes the systematic and meaningful removal of dirt, trash, waste and other contaminants from the work place. As such Seiso means that everything is kept wiped swept and clean at all times. One of the obvious purposes of the Seiso is to turn the work place in to a clean, bright, safe and sanitary place where everyone will enjoy working. Seiketsu means creating a consistent way of carrying out tasks and procedures i.e. standardization. This is the method used to maintain first three steps in 5S concept. It can be defined as the outcome of properly maintained Seiri, Seiton and Seiso. In other words, Seiketsu integrates those three steps into a unified whole. The basic purpose of Seiketsu is to prevent setbacks in the first three steps, to make implementing them a daily habit and to make sure that all three steps are maintained in their fully implemented state. Shitsuke means to make a habit of properly maintaining correct 5S procedures forever. The implementation of the Shitsuke is different from other 4S in the sense that results are not visible and cannot be measured. Commitment to it exists in people's heart and mind, and only their behaviour shows its presence. Therefore it cannot be implemented like a technique but conditions can be created to encourage the implementation of Shitsuke.<sup>3</sup>

Most Japanese company claimed that they have improved their productivity, quality and thinking pattern of employees with the implementation of 5S. Although it gives vast range of benefits to the organization as well as to the employees, it can be implemented at very low cost.

The National productivity policy for Sri Lanka was formulated in 2002 to promote the productivity and quality in organizational level. Readiness to improve productivity in the work place implies a new work culture which is about new ways of thinking and doing. The National productivity policy envisages that such a strong work culture is a *sine qua non* for continuous productivity and quality improvement.<sup>4</sup> 5S is the gateway of the most of quality and productivity improvement programmes.

The idea of the 5S concept was introduced to Sri Lanka in 1990 by Dr. Taiki Akimoto, a renowned practitioner of 5S in Japanese industry.<sup>5</sup> Since then several public and private organizations in Sri Lanka have implemented 5S successfully and improved their productivity and service quality.

Many health care institutions in Sri Lanka have improved their productivity and service quality by implementing the Japanese 5S concept. Castle Street Hospital for Women was the first Healthcare institution which implemented the 5S concept successfully in year 2000. This was the best example in Sri Lanka that the ability of successfully implemented 5S programmes to enhance the service quality of a hospital.<sup>6</sup> Most of the curative health care institutions in North Western Province in Kurunegala and Puttalam RDHS areas have successfully implemented the Japanese 5S concept. Productivity and quality improvement programmes based on Japanese 5S concept will give better outcome with limited resources in health sector.<sup>7</sup>

### Objective:

To determine the effect of the organizational culture on the sustained quality improvement in government healthcare institutions in Sri Lanka

## 2. METHODOLOGY

This was a hospital based Descriptive Cross Sectional Study to assess the effect of the organizational culture on the sustained quality improvement in government healthcare institutions in Sri Lanka. Regional Director of Health Services area, Kurunegala was selected as the study setting.

There are 46 Hospitals in Kurunegala Regional Director of Health Services area including four Base Hospitals. Out of this, only Divisional Hospitals in the Regional Director of Health Services area Kurunegala were selected to the study to

minimize the selection bias. From 42 Divisional Hospitals ten Hospitals have been selected using stratified random sampling techniques for the study. All selected Divisional Hospitals have implemented 5S programmes since 2007. Selected Hospitals for the study were Hiripitiya, Polpithigama, Rideegama, Bingiriya, Katupotha, Narammala, Indulgoda kanda, Karambe, Kobeigane and Muwanhela.

The data was collected over the period of one month in selected hospitals, commencing from 1<sup>st</sup> of August 2013 to 1<sup>st</sup> September 2013. Ethical clearance was obtained from the Ethics Review Committee, Faculty of Medicine-University of Colombo. The study was completed within the period of five months. Study population of this study consisted of all the employees of selected ten Hospitals during the study period. Total number of employees in the selected hospital was 543. Sample size for the study was calculated according to the standard formula.<sup>8</sup> And it was 422 while 375 were responded. Population proportion technique was applied to the study population to decide the relevant sample from each hospital. Then study population of each hospital was divided into strata according to the type of employee category. Number of participant chosen in each stratum was proportional to the size of the stratum. This is called proportional allocation.<sup>9</sup> Data taken from the payroll was used to make the sampling frame. Separate sampling frames were made for each category of the employees. Then using a table of random numbers, required numbers of employees from each category were selected. This procedure has reduced the selection bias in the study.

#### Study variables:

Sustainability of the 5S programme and components of organizational culture were considered as study variables.

#### Study instruments:

This study has two study instruments.

1. Direct observation for evaluation of 5S sustainability
2. Self administered questionnaire

Japan Sri Lanka Technical and Cultural Association (JASTECA) have developed a 5S evaluation sheet for their 5S award competition. This is called Taiki Akimoto's 5S evaluation sheet which was used for the evaluation of 5S sustainability.<sup>5</sup> Taiki Akimoto's 5S evaluation sheet is well structured and gives complete details on every aspect of 5S evaluation and it gives total 250 marks. Organizations which have scored more than mean-1.96SE were considered as having sustained 5S programme for this study.

The self administered questionnaire consisted of five questions on components of organizational culture. Organizational culture is defined as the system of shared meanings and common beliefs held by organizational members that determine, in a large degree, how they act towards each other<sup>15</sup>. There are basically two types of organizational cultures called strong culture and weak culture. Type of the culture was determined through questionnaires. Extent of the knowledge on organization's history, recognition of employees among health care field, recognition of employees in the society, employee turnover and demand for vacancy in the organizations were used as indicators. The responses to these questions were assessed in Six point Likert Scale.<sup>10</sup> Ratings of six point Likert scale is strongly disagree, disagree, slightly disagree, slightly agree, agree and strongly agree.

### 3. RESULTS

Level of sustainability of 5S programmes in each hospital was evaluated by using Taiki Akimoto Evaluation sheet<sup>5</sup> which gives points out of 250 according to the degree of the sustainability. Table 1 shows the results of evaluation.

Table 1: Degree of sustainability of 5S programmes

Hospital	Sustainability	Percentage of sustainability %
DH Hiripitiya	162	64.8
DH Polpithigama	192	76.8
DH Rideegama	185	74.0
DH Bingiriya	180	72.0
DH Katupotha	182	72.8

DH Narammala	103	41.2
DH Indulgodakanda	148	59.2
DH Karambe	97	38.8
DH Kobeigane	196	78.4
DH Muwanhela	137	54.8
Mean	158.2	
Standard Deviation	36.043	
Standard Error of Mean	11.398	

The highest degree of sustainability of 5S programme was reported in DH Kobeigane (78.4%) while the lowest degree was reported in DH Karambe (38.8%). Cut off point for sustainability was determined statistically as follows.

Cut off point for sustainability = Mean- 1.96 SE

= 158.20- 1.96\*11.398

= **135.86**

Therefore DH Narammala and DH Karambe were categorized as not sustain group and other eight hospitals were categorized as sustain group of hospitals. . Therefore there were two groups of hospitals in this study as sustained and not sustained

#### Correlation between degree of sustainability and mean score of the organizational culture:

Correlation between degree of 5S sustainability and mean score of organizational culture was calculated. There was a strong correlation between sustainability of the 5S and the organizational culture at 0.05 level. Table 2 shows the results.

**Table 2: Correlation between degree of sustainability and mean score of organizational culture**

Hospital	Sustainability	Mean score of organizational culture
DH Hiripitiya	162	4.7320
DH Polpithigama	192	5.0408
DH Rideegama	185	4.6538
DH Bingiriya	180	4.3400
DH Katupotha	182	4.7362
DH Narammala	103	2.9956
DH Indulgodakanda	148	4.6353
DH Karambe	97	4.4500
DH Kobeigane	196	5.1319
DH Muwanhela	137	4.4625
Pearson correlation		0.704
P value	0.023	

#### Correlation between degree of 5S sustainability and components of the organizational culture:

Correlation between degree of 5S sustainability and components of the organizational culture was calculated. The strongest significant correlation found was value of the organization and the 5S sustainability while there was no statistically significant correlation between 5S sustainability and recognition among healthcare field and benefits from the society. Table 3 shows these results.

**Table 3: Correlation between degree of 5S sustainability and components of the organizational culture**

Components of leadership	Pearson correlation	Significance
History	0.759	0.011**
Recognition	0.458	0.183*
Benefits	0.590	0.073*
<b>Value</b>	<b>0.839</b>	<b>0.002***</b>
Demand	0.635	0.048**

\*\*\* Significant at 0.01 level    \*\* significant at 0.05 level    \* no significance

#### ANOVA Test for Organizational Culture between two groups

One way ANOVA test was done for organizational culture between sustain and not sustain groups. There was a strong statistically significant difference between two groups. Table 4 shows the results.

**Table 4: ANOVA Test for Organizational Culture between two groups**

	SS	df	MS	F	Significance
<b>Between groups</b>	<b>102.573</b>	<b>1</b>	<b>102.573</b>	<b>185.275</b>	<b>0.000</b>
<b>Within groups</b>	<b>206.502</b>	<b>373</b>	<b>0.554</b>		

#### ANOVA Test for components of the Organizational culture between two groups

One way ANOVA test was done for components of the organizational culture between sustain and not sustain groups. There was a strong statistically significant difference between two groups in each components of the organizational culture. Table 5 shows the results.

**Table 5: ANOVA Test for components of the Organizational culture between two groups**

Components	F value	Significance
<b>History</b>	<b>62.903</b>	<b>0.000</b>
<b>Recognition</b>	<b>118.328</b>	<b>0.000</b>
<b>Benefits</b>	<b>177.185</b>	<b>0.000</b>
<b>Value</b>	<b>125.494</b>	<b>0.000</b>
<b>Demand</b>	<b>92.709</b>	<b>0.000</b>

## 4. DISCUSSION

Nowadays, the adoption of 5S practice as the gateway to quality improvement is well accepted by many organizations worldwide.<sup>11</sup> Researchers agreed that 5S is very powerful tool, feasible to implement and incurred less investment in improving the organizational performances on the aspects of economic opportunities and environmental sustainability that include the benefits of quality, productivity, safety, cost, workplace environment and waste reduction.<sup>12</sup> The benefits that could be gained from 5S implementation are in accordance to 3Ps (people, planet and profit), a well-known marketing principle which is having strong linkage with sustainability.<sup>13</sup> In short, the practice of 5S would generate benefits for people (e.g., safety, health, and discipline), planet (e.g., waste, pollution, and energy), and profit (e.g., productivity, quality, and operational cost). All aspects of 3Ps need to be fulfilled in order to become sustainable organizations. Therefore sustainability of the implemented 5S practice would enhance the sustainability of the organization. Sustainability of the 5S will reflect the sustainability of the improved quality of the organization. Further it improves the image of the organization in every aspect and dominates the market share among same category of organizations.

In this Descriptive Cross Sectional study, Pearson correlation coefficient was selected as the statistical test to calculate the correlation between 5S sustainability and organizational culture. According to table 2, there was a statistically significant strong correlation between 5S sustainability and organizational culture. Therefore organizational culture could be considered as a main contributing factor for sustainability of the 5S programmes leading to sustain improved quality in government hospitals in Sri Lanka. These findings were compatible with a previous study on factors contributing to sustainability of 5S in Sri Lankan organizations.<sup>14</sup>

According to table 3, correlation between value of the organization and 5S sustainability was significant at 0.01 level. Therefore value of the organization could be considered as the most important aspect of the organizational culture for the sustaining of the improved quality of an organization. Correlation between history of the organization and demand by other healthcare workers with 5S sustainability were significant at 0.05 level. There was no evidence of significant correlation between 5S sustainability and other two aspects of the organizational culture according to the study findings.

ANOVA Analysis was done to compare the mean score of the organizational culture between two groups of hospitals as shown in table 4. There was a strongly statistically significant difference of mean of the organizational culture found between two groups of hospitals. Therefore researcher has concluded that organizational culture could be considered as contributing factors for 5S sustainability in statistical point of view.. It further confirmed the previous decision on organizational culture. These findings were compatible with a previous study of factors contributing to sustainability of 5S in Sri Lankan organization.<sup>14</sup> ANOVA analysis was done to compare the five components of the organizational culture between two groups of hospitals. Study revealed that there were strongly statistically significant differences in all components of organizational culture between two groups of hospitals in this study setting.

## 5. CONCLUSION

This study reveals better understanding of the effect of the organizational culture on the sustainability of 5S programmes in Governmental Hospitals in Sri Lanka. Majority of the 5S implemented hospitals in the selected RDHS area are able to sustain their 5S practices. In this study setting, 80% that is 8 out of 10 Hospitals sustain their implemented 5S programmes. 50% of the selected hospitals in RDHS area Kurunegala reported more than 70% sustainability. There was a statistically significant positive correlation between 5S sustainability and organizational culture. According to ANOVA analysis of mean score of organizational culture in two groups of hospitals, there was a strongly statistically significant difference found between two groups of hospitals. Therefore organizational culture could be considered as a contributing factor for 5S sustainability in statistical point of view. According to ANOVA analysis of components of organizational culture in two groups of hospitals, there were strongly statistically significant differences in all components of the organizational culture between two groups of hospitals in this study setting. Therefore researcher concluded that strong organizational culture has great impact on sustainability of any quality improvement programme in government healthcare institutions.

## 6. RECOMMENDATION

According to the findings of this study following recommendation could be made by the researcher.

1. Organizational culture of all the government hospitals should be positively strengthen in every aspect because strong organizational culture is a important factor for 5S sustainability hence the improved quality, according to this study.
2. This research was carried out to determine the effect of organizational culture on sustainability of the improved quality. It is better to carry out further studies in detail.

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