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INVESTIGATING THE READINESS TO IMPLEMENT TOTAL QUALITY MANAGEMENT IN REMOTE HOSPITALS: A CASE STUDY FROM SAINT HELENA ISLAND

Abstract: The aids from London to Saint Helena is currently being reduced due to global economic challenges. Despite these economic challenges, public healthcare in developed and underdeveloped countries has introduced the TQM approach since the 80s to facilitate change, increase team involvement, and improve the quality of healthcare services while saving costs (Chiarini & Vagnoni, 2017). If TQM can be introduced in the health directorate of Saint Helena Island, it can bring about a culture of quality healthcare services; thus, the main customers (patients and employees) will be satisfied while saving costs, which have long-term benefits (van Schoten et al., 2016). Reduced costs of poor quality, effective implementation of TQM will lead to a significant reduction in costs of poor quality, such as rework and patients suing the hospital. There are many more benefits of implementing TQM in healthcare that is not listed by this study stated by other researchers in quality management. This is an empirical study to examine the possibility of TQM implementation in Saint Helena General Hospital (SHGH) to define TQM in healthcare further and to propose an implementable framework. The primary research question for this study is the implementation of TQM in the remote island of Saint Helena General hospital possible. The study attempted to answer the following questions 1) What TQM means in healthcare services. 2) What are the benefits of TQM implementation within hospitals? 3) How to apply TQM in hospitals? The study proposes a framework to implement TQM in SHGH.

Keywords: TQM; Healthcare; Quality Management; Saint Helena; Deming; Service Quality.

1. Introduction

Despite the economic challenges, public healthcare in developed and underdeveloped countries has introduced the TQM approach (Chiarini & Vagnoni, 2017). TQM is vital for hospitals to provide efficient and effective health services to meet the needs identified by health authorities and to achieve the needs and expectations of the consumers (patients) of the service (Nwabueze, 2014). TQM enables healthcare organisations to identify customer requirements, set a benchmark for best

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practices and improve processes to deliver appropriate care, and reduce the frequency and severity of medical errors (Baidoun et al., 2018).

1.1 Literature Review

The application of these TQM principles will allow the hospital to identify patients' needs, recognise and contain medical mistakes, and the correlation between processes (Baldassarre et al., 2018; Nwabueze, 2014; Nwabueze, 2014). Defining TQM in these terms emphasises two crucial aspects; first, it reminds managers of their institution's purpose (Deming places "constancy of purpose" at the top of his 14 points) and secondly, of the guidelines to follow to achieve customer satisfaction. This can be the ideal way to look at TQM in the Saint Helena general hospital. TQM implementation requires changes in structure, system, and process as a prerequisite to achieving improved business performance and changes in employee behaviour (Chiarini & Vagnoni, 2017). Therefore, it is crucial to identify the critical factors that influence the success of TQM implementation in service organisations such as the Saint Helena general hospital. Some of these vital factors are briefly discussed below.

1.2 Rationale

Quality is defined as a 'dynamic state associated with products, services, people processes, and environments that meets or exceeds expectations and helps produce superior value' (Goetsch & Davis, 2013). The need for quality as an essential component in the development of strategies for organisations to implement Total Quality Management (TQM) was clearly outlined by (Kidane & Raju, 2016) who stated that there is an ever-increasing demand for quality

services, and this global revolution had forced organisations to invest substantial resources in adopting and implementing TQM strategies. Dr Edward W. Deming's definition of quality states that it is multidimensional to produce a product and/or deliver a service that meets the customer's expectations to ensure customer satisfaction (Zairi, 2013). Deming emphasised that quality involves meeting or exceeding customer expectations, while quality applies to all pillars of the organisation; which are the product, services, people, processes and environment. He further stated that what is considered quality today may not be good enough to be considered quality tomorrow; therefore, quality is an ever-changing state.

Nevertheless, the key principles of TQM, if adhered to continuously, can provide the basis for improvements in organisational performance but because implementation rests on the decisions of managers and others on how to implement, there can arise a range of difficulties that can fail; as Dale et al. (2000) argue, TQM can become a 'fallen star'. Implementation failure of TQM can vary between sectors and industries, but as argued by (Nicolaou, 2017) in healthcare, there are many obstacles for TQM, such as lack of management commitment and change of culture. Healthcare organisations such as hospitals should understand that all stakeholders (patients, government, employees, suppliers and communities) may have different needs and expectations of the hospital and the quality challenges depend on addressing all these needs and expectations.

1.3 Specific Aims

This paper aims to measure the readiness to adopt TQM Principles at Saint Helena General Hospital. To achieve this aim, we

employed mixed methods research approach to collect data and measure the staff and senior management perceptions on TQM and how it can help the hospital improve performance. The research questions once again were: 1) What TQM means in healthcare services. 2) What are the benefits of TQM implementation within hospitals? 3) How to apply TQM in hospitals? The study proposes a framework to implement TQM in SHGH.

1.4 Methodology

Like anywhere else in the world, Saint Helena general hospital faces a similar situation where it experiences the challenges of decreasing funds and patients' growing expectations. Saint Helena Island is an overseas territory of the United Kingdom (UK), and at the end of 2017, there were an estimated 4,761 residents on the island, including expatriates (Saint Helena Statistcs, 2017). The Saint Helena general hospital employs 121 people and is located on the remote island of Saint Helena. The economy of Saint Helena is weak, and the island is almost entirely sustained by aid from London.

2. Study

2.1 Interventions

It is essential to implement TQM to prevent clinical and administrative problems, increase patient satisfaction, continuously improve the organisation's processes, and provide proper healthcare services while saving cost. Saint Helena health directorate needs to understand that TQM is not a singular or one-off activity.

2.2 Study of the Interventions

The personnel targeted in this study are top Management, health professionals, heads of departments (middle Management) and administrative staff involved in service delivery in the hospital. (Johnston, 2014) interpreted the research approach as the underpinning rationale for the way the research is being carried out.

2.3 Measures

We developed a questionnaire to gather the standardised information from a sizeable population in a highly economical manner and allow easy comparison (Saunders et al., 2012). It also makes the quantification of data possible. We conducted a pilot on 7 respondents to test the validity and clarity of the question, and there was not much to modify except some typo errors; hence we considered those respondents into the data we gathered.

2.4 Analysis

This sample was found to represent the whole population in a meaningful manner. The population size of the Saint Helena general hospital is 121; therefore, using a 90% confidence level sample size was 52 (Saunders et al., 2012). Out of 52 questionnaires distributed to respondents, only 44 questionnaires were returned, and two of those were ineligible as a result of improper filling. As it was stated by (Saunders et al., 2012), the probability sampling should represent the population it was taken from. According to Saunders et al., calculating the response rate can be executed by using the following formula:

$$Total\ response\ rate = \frac{Total\ number\ of\ responses}{Total\ number\ of\ samples - Ineligible} = \frac{44}{52-2} * 100$$
$$= 88\%$$

This formula shows that the response rate was adequate and high. According to Saunders et al. a response rate of 50% and 35% to 40% is reasonable for a study, 60% is good, and 70% and above is excellent. Therefore, a response rate of 88% was fit and reliable for the study.

2.5 Ethical Considerations

According to (Mosadeghrad, 2015) the significant benefit to a TQM implementation is to increase internal (all employees) and external (patients, stakeholders, etc.) customer satisfaction, teamwork, productivity, communication and efficiency. Therefore, TQM implementation should be an opportunity to involve staff and review the processes and organisational operations that affect customers (patients). The successful implementation of TQM will result in improved employee involvement, as TQM ensures that everyone in the organisation has a clear idea of what is expected and how processes relate to the organisation as a whole (Chiarini & Vagnoni, 2017). Improved communication can be achieved through the successful implementation of TQM principles in any industry (Hirzel et al., 2017). Open and effective communication among departments in the organisation will be established through TQM, and employees will view and treat one another as customers and suppliers.

Also, improved communication can enhance the trust between staff and encourage the sharing of information (Hirzel et al., 2017). During TQM implementation work processes and improvements, improved service quality is focused upon, which will lead to employees placing more emphasis on the elimination of bad habits (Talib & Rahman, 2015). Problems will be identified and tackled at lower levels by the people closest to work empowered to deal with the

issues (Adjei & Mensah, 2016). This will lead to improved quality services, and patients complaints will be reduced or eliminated. Improved customer (patients and employees) satisfaction through open communication among employees, customers and other stakeholders, the customer can understand better (Sabella et al., 2015).

2.6 Statement of Principal Findings

The mean scores obtained for all the statements of TQM practices ranged from 1.52 to 3.62. A Fisher's Exact test/Pearson Chi-squared test was used to compare the relationship between TQM knowledge and TQM elements, and a p-value of less than 0.05 was considered statistically significant.

$$Pearson\ chi2(3) = 4.5676$$
$$Pr = 0.206$$
$$Fisher's\ exact = 0.326$$

The above results were obtained on the relationship between TQM knowledge and years of experience of participants as a healthcare professional. Therefore, these results suggest that there is no statistical significance between TQM knowledge and years of experience as a healthcare professional because the p-value is equal to 0.326, which is way above 0.05.

$$Pearson\ chi2(2) = 1.4015$$
$$Pr = 0.496$$
$$Fisher's\ exact = 0.546$$

Tabulation of TQM knowledge and qualification of participants also have no statistically significant since the p=0.546 as shown above. Therefore, there is no relationship between TQM knowledge and skill.

$$Pearson\ chi2(2) = 5.9296$$
$$Pr = 0.049$$
$$Fisher's\ exact = 0.041$$

TQM knowledge and employee job level or position within the organisation is statistically significant as the p-value = 0.041 which is < 0.05, therefore for this research we can conclude by stating that TQM knowledge is related to the job level of the participants as only 3 (60%) of top management responded to the questionnaire have TQM knowledge.

$$Pearson\ chi2(3) = 8.1939$$
$$Pr = 0.042$$
$$Fisher's\ exact = 0.041$$

TQM knowledge and participant's years of experience at Saint Helena general hospital are statistically significant as the p-value = 0.041, which is < 0.05; for this research, we can conclude by stating that TQM knowledge to the years of participant's experiences within the organisation. Most of the participants, 85% who don't have any TQM knowledge, have 2-5 years of experience at Saint Helena general hospital. This result gives the hospital the idea of structuring their TQM training when they decide to implement TQM using the framework proposed by this research. In this section, the degree of TQM elements at the hospital is discussed.

2.7 Strength and Limitations

If the hospital/ health directorate adopts a new strategy or philosophy, such as TQM, the changeover to such a new strategy or philosophy should become the organisation's culture, as it changes the basic framework of the organisation, including strategy, structure, people, processes and core values. It is important to note that the culture change overall mean score (2.52) was below the midpoint average, indicating that participants tended to agree with most of the statements. Furthermore, it is evident that the hospital staff were willing to contribute to the change process as the mean score obtained for this statement was 1.67. The chi-squared test shows that the p-value=0.005 which makes this statement statistically significant and they also understand that they have to be careful not to make mistakes in their work because they are working with people's lives, this statement mean was lowest scored at 1.52, while the p-value was >0.05 the research concludes by stating that the participants understand the importance of their work as 95% agreed to the statement.

Interpretation within the context of the broader literature is also evident that there was an association between TQM knowledge and participants being afraid to try new things at the hospital/directorate as the p=0.000, which was way less than 0.05. Therefore, this is an excellent factor for Saint Helena as most of the workforce is willing and not afraid to try new things which is a right attitude towards the TQM environment. The overall p-value of culture change was 0.164, suggesting no significant statistical association between TQM knowledge and culture change. Other TQM elements were also compared to TQM knowledge, and the p values were also considered for statistically significance. Top management, customer focus and satisfaction, and training had an overall p-value of less than 0.05, making these TQM principles not statistically significant in association with the TQM knowledge of the participants. These findings suggest that top management needs to give these elements more attention during the planning stage of TQM.

2.8 Implications for Policy, Practice, and Research

The study recommends further research on the importance of developing a strategy for implementing TQM by paying more attention to identifying, analysing, and

adopting an appropriate organisational culture that suits TQM implementation and can use the framework prosed by this research. Senior management should also establish a quality policy applicable to the organisational context, and it should be short and clear. Employee's empowerment is an essential issue in TQM implementation; thus, attention should be paid to how to satisfy employees and increase their empowerment. They are the driving force of TQM implementation. Insufficient quality-related education and training were some of the barriers to implementing TQM in the healthcare sector (Mosadeghrad, 2014). Therefore, trainers should ensure that employees and managers are trained on TQM knowledge and its implementation and continuous improvement as it is a significant factor.

The study recommendations based on work positions in the hospital, at the worker (subordinate) level: Employees need to understand TQM principals/elements and how TQM contributes to healthcare services delivery and outcomes, while at the same time ensuring effective communication between employees and patients will ease the process of implementing TQM in hospitals. The managers must provide additional opportunities for training that are systematic and consistent with overall health services education, as well as the quality of care for hospital staff. It is necessary for health professionals (nurses) to complete practical training overseas since Saint Helena general hospital is not a training centre. Additional training at the top managerial level needs to be encouraged to help create a positive work environment for staff, which needs to be reflected in employees understanding of the value of TQM practice

3. Discussion

A questionnaire was used to collect the data from hospital staff, including top management, middle management, and staff without supervisory roles, then analysed using statistical techniques, tables, and graphs. The sample used in this research was made up of 52 full-time employees in Saint Helena General hospital.

The TQM was defined for Saint Helena General Hospital; .the study revealed that 69% of participants have no knowledge of TQM and that 92% of hospital employees are willing to contribute to the change process. The study proposed the implementation framework based on participants' results on principles of TQM within the organisation, and this framework is specific for Saint Helena General Hospital. The study revealed that TQM implementation was possible for Saint Helena General Hospital (SHGH) to improve employee involvement.

4. Conclusion

The definition of TQM used in this study was as follows: 'TQM is a process, a management philosophy or culture with eight essential characteristics, namely culture change; top management; continuous improvement; customer focus and satisfaction; employee involvement; teamwork; systems and processes; and training'. After defining TQM for healthcare, the literature review of this research highlighted the benefits of TQM implementation in the hospital environment. The benefits of a successful implementation of TQM in the hospital include holistic quality, cost reductions, prevention of mistakes, employee satisfaction, and patient satisfaction. Although these benefits sound very positive, it will only occur if TQM is implemented in the right way in the hospital. This can be achieved by designing easy to

understand implementation frameworks that include essential factors of TQM.

The research findings suggested that top management needs to communicate better with employees and work internal data collection methods as most of the participants believe that these elements are not established and easy to find. Therefore, the necessary training for top management and senior management team should include Deming's 14 points as TQM is built around these points. The study proposed a framework derived from the questionnaire's responses, which makes the framework-specific for Saint Helena general hospital. It can be seen that the framework is simple and can be easily understood when various quality initiatives are implemented. This framework considers the important parts such as quality vision, top management commitment, and quality management system as starting points for a TQM process.

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APPENDIX A: Data collection tool questionnaire

Tell us about yourself:

Have you ever heard about Total quality management (TQM) before?

Yes ☐   No ☐

How many years in total employment experience as a healthcare professional?

Less than 2 year ☐   2-5 years ☐   6-10 years ☐   More than 10 years ☐

Highest Qualification:

High school or equivalent ☐   Bachelor Degree ☐   Postgraduate ☐

Job / Position:

Top Management ☐   Middle Management ☐   Worker (subordinate) ☐

Number of service years at your current position

Less than 2 years ☐   2-5 years ☐   6-10 years ☐   More than 10 years ☐

These are statements to be considered in the context of your actual working environment in the health directorate. Think about how well the statements describe your working environment. Indicate your answer by ticking relevant box (strongly disagree, disagree, neither agree or disagree, disagree and strongly disagree).
If you change your mind about a response, cross out the old answer and circle your new choice.

	Strongly Agree	Agree	Neither agree or disagree	Disagree	Strongly Disagree
Culture Change					
I am willing to contribute to the change process					
I am never afraid to try new things at the hospital/directorate					
I have to be careful not to make mistakes in my work.					
I am given credit for my accomplishments					
I am encouraged to feel proud of my achievements.					
I am recognised for my personal efforts					
Our top management are establishing a clear direction for the hospital					
It is very difficult to change anything in this hospital					

Teamwork					
The people I work with co-operate well to complete task					
Staff sometimes compete for professional recognition					
Our Managers are committed to working as 'one organisation					
I believe that all the departments in the hospital interact and work together					
Top Management					
Top management have clear vision towards quality service					
Top management understands my department processes					
Top management takes care of employee wellbeing (e.g. health and safety provision)					
Top Management support any change required and promote new culture					
Communication between employee and top management is established					
Employee involvement					
The Directorate encourages employees to suggest ideas for service improvement					
Employees are actively involved in quality-related activities					
In our department most employee suggestions are implemented					
Goals and policies are communicated to staff					
Customer focus and satisfaction					
Directorate encourages employees to satisfy internal (co-workers) and external (patients) customers					
I am given set standards for customer satisfaction in my department					
Specific targets for patients' satisfaction are set for me to achieve					
The hospital utilises motivational slogans as a means to effect customer satisfaction					
All employees understand customer satisfaction targets.					
All employees are aware of customer requirements and expectations					
Service and processes are aligned with customer requirements					
Continuous improvement					
In our department continuous improvement is applied in all our daily operations					
Continuous improvement processes are based on customer requirement					
Quality service improvement culture is evident in the hospital departments					
Not all staff is required to improve in the hospital/directorate					
Systems and Processes					
Internal data collection is established and easy to find					
Procedures and policies for quality are in place					
I am involve in different processes within the Directorate					
Everyone contributes towards improving the hospital/directorate					
Everyone share responsibility for ensuring enhancements to the hospital operational processes.					
Training					
The hospital/directorate helps me to get better on my job.					
Professional development of staff is important in the hospital/directorate.					
I am responsible for improving my performance.					
I am constantly acquiring new professional skills.					
I feel personally empowered to commit to continuing education					

Many thanks for answering this questionnaire