



Influence Of TQM Principles Implementation At King Abdul Aziz Hospital, Makkah, Saudi Arabia

Asma Hamza Barnawi^{1*}, Sanaa Mohammed Barnawi², Shima Hamza Barnawi³, Amal Abdulqader Mujahed⁴, Maria Bakur Barnawi⁵, Mashhour Waslallah Althobaiti⁶, Fatma Othman Barnawi⁷, Fatma Abdul Razag Hawsawi⁸

^{1*}Quality Consultant, King Abdul Aziz Hospital, Makkah, Kingdom of Saudi Arabia,

²Consultant Family Medicine, Kakiyea Primary Health Care, Makkah, Saudi Arabia,

³Nursing Specialist, Maternity and Children Hospital, Makkah, Saudi Arabia,

⁴Lab Technician, Maternity and Children Hospital, Makkah, Saudi Arabia,

⁵Pharmacy Technician, Maternity and Children Hospital, Makkah, Saudi Arabia,

⁶Laboratory Specialist, Medical Licensing Management,

⁷Nursing Technician, King Abdul Aziz Hospital, Makkah, Saudi Arabia,

⁸Nursing Technician, King Abdul Aziz Hospital, Makkah, Saudi Arabia.

***Corresponding Author:** Asma Hamza Barnawi

*Quality Consultant, King Abdul Aziz Hospital, Makkah, Kingdom of Saudi Arabia

Abstract

Total Quality Management (TQM), a core strategic management approach is designed for the quality of any organization (healthcare) based on the employer and employees' participation for customers' satisfaction, the organization's effectiveness, competitiveness, and flexibility. The study aimed to investigate the influence of TQM principles implementation at King Abdul Aziz Hospital, Saudi Arabia. The study adopted a mixed-method approach using a sequential explanatory research design. A mixed-method approach is one in which both quantitative and qualitative methods are used. A total of 108 healthcare workers completed the questionnaires. The data were collected using a structured questionnaire, which was statistically analysed using SPSS version 17. The results of the study revealed that the implementation of the principles of TQM practices ranges from leadership to employee section. Financial and political pressures were found to be important external factors affecting employees' performance in the particular hospital. These findings could give a better understanding of the improvement and promotion of total quality management practices and their impact on employees' performance in health organizations, improving effectiveness, productivity, profitability, and flexibility of the hospital facilities and services provided to patients/clients.

Keywords: Employees' performance; External factors; Total Quality Management; Leadership

INTRODUCTION

For many years, politicians have been worried about the performance of healthcare systems, and numerous countries have lately enacted reforms with the express purpose of boosting performance. Despite significant worldwide health challenges.

Despite steps implemented in several nations around the world, many government hospitals keep experiencing performance issues (WHO, 2022). To increase performance, numerous public healthcare institutions are vigorously pursuing quality-of-care measures. Total quality management (TQM) is one of these systems targeted at increasing performance and minimizing costs, and it has been successfully adopted in many hospitals worldwide (1). According to (2), total quality management (TQM) is a strategy to systematically enhance quality for the organization to improve performance of client satisfaction, profitability, efficiency, and quality.

(3) states that TQM enhances performance by enhancing quality, customer satisfaction, and profitability and productivity. However, even after implementing TQM practices, many organizations' performance, particularly public hospitals, remains uncertain (4).

TQM systems implemented in healthcare organizations can improve patient safety. True economic effectiveness will be established through vastly improved cost management practices, and the healthcare industry will be moved from its current low-performance level to a new standard of excellence.

Furthermore, implementing TQM in health care, which is a patient-centered process, results in safe health services, patient-centered care, improved health outcomes, and patient satisfaction, provided the processes are well designed, implemented, and consistently executed (4). The TQM approach has demonstrated the potential for dramatic

improvements in quality and cost in healthcare organizations, but it has also proven difficult to implement. Healthcare executives must gain experience and training in a wide range of business management models (5). Major problems cited by companies include failure to link management compensation to the achievement of quality goals, inadequate employee training, and inadequate resources for employing quality management. However, the most important problems are a lack of top management commitment and a failure to focus on strategic planning.

significant of study

This study might be significant in that it will be the first study of its kind to investigate the extent of implementation of total quality management in the Makkah region. Although the literature on total quality management includes a rich spectrum of research, sparse research has been conducted on the implementation of total quality management at King Abdul Aziz Hospital in particular. Therefore, the study might add to the existing stock of knowledge as it uncovers how the extent of implementation of top management support, teamwork, training, and reward and motivation as the principles of total quality management influence the health care achievement at Makkah region. The study may have practical contributions in that it may give timely information on the deteriorating patient safety achievement at King Abdul Aziz hospital, Makkah. This helps to raise the awareness of the key stakeholders like staff, based upon the outcomes of this research, studies of other formats and magnitudes could be designed to further examine the extent of implementation of total quality management in other healthcare intuitions. Therefore, this study might offer a solid foundation for future patient safety research by healthcare providers and policymakers in the Ministry of Health in Saudi Arabia. Furthermore, the study might serve as an inspiration and reference for further in Saudi Arabia.

The Problem Statement

Total quality management continues to be critical for any organization. Although there will be benefits associated with TQM implementation, organizations continue to face drawbacks and a certain degree of failures will have been reported during its implementation. These drawbacks will be addressed kindly to improve the success of TQM .

Aim of the Study

This study aims to investigate the influence of TQM principles implementation at King Abdul Aziz Hospital, Saudi Arabia.

Objectives:

The study will be guided by the following specific

objectives:

- i.** To identify top management commitment and influence the implementation of total quality management in King Abdul Aziz Hospital, Saudi Arabia.
- ii.** To find out the extent to which employee training influences the implementation of total quality management in King Abdul Aziz Hospital, Saudi Arabia.
- iii.** To determine the extent to which organizational culture influences the implementation of total quality management in King Abdul Aziz Hospital, Saudi Arabia.
- iv.** To determine the influence of communication on the implementation of total quality management in King Abdul Aziz Hospital, Saudi Arabia.

Research Question

How does top management commitment influence the implementation of total quality management in an internationally accredited hospital ?

ii. To what extent will employee training influence hospital total quality management in an internationally accredited hospital?

iii. To what extent will organizational culture influence the implementation of total quality management in an internationally accredited hospital ?

iv. What will have been the influence of communication on the implementation of total quality management in an internationally accredited?

MATERIALS & METHODS

Research Design

The study adopted a mixed-method approach using a sequential explanatory research design. A mixed-method approach is one in which both quantitative and qualitative methods are used to answer research questions in a single study (6). Mixed method research is useful in developing a better understanding of the phenomenon by triangulating one set of results with another and thereby enhancing the validity of inferences (7).

Setting

This research had been conducted at King Abdul Aziz Hospital Makkah, Saudi Arabia. It will be a leading provider of ambulatory care and quality inpatient services, comprising critical health services among others.

Study Sample

The study population comprised all employees of King Abdul Aziz Hospital, Makkah City County- Saudi Arabia. The target population will be top management, doctors, nurses, allied health workers, and support staff employed at the hospital whose total number is 2,200, given that they are all important categories in the implementation of TQM and TQM is the responsibility of every staff in the organization.

Tools of Data Collection

The instrument of the investigation was developed by an investigator; it will be in English and then translated into Arabic language's; it aims to investigate the influence of TQM principles on TQM implementation at King Abdul Aziz Hospital, Saudi Arabia This was established to collect sociodemographic information from employees and to assess total quality management practices in terms of employee perceptions of leadership, training and education, involvement, communication, teamwork, and incentives or reward system. A five (5)-5-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5) was used, even though modified from the studies of (8).

Sample of Research

When accounting for the 95% confidence interval and the 10% confidence interval, a sample size of 93 was determined from a total of approximately 2434 administrative and medical services staff. Questionnaires were distributed to hospital staff via Question Pro.

Tool I: Socio-demographic, employee training, and development, organizational culture, communication, total quality management implementation.

It will be divided into five parts with each section involving questions on each of the five variables (Independent Variables: top leadership commitment, employees training, and development, organizational culture and communication, dependent variable: total quality management). (9) points out that it is appropriate in the administration of structured questionnaires to collect data from large samples and analyze the data.

Tool II: General questions, employee training, and development, organizational culture, communication, total quality management implementation. In contrast, qualitative data will be collected by using Key Informant Interview Schedules (KIIS) that target departmental heads and their deputies. The in-depth interviews for Key Informants included the views, opinions, and suggestions from the departmental heads and their deputies to supplement the information obtained from other categories of respondents on the influence of TQM principles on TQM implementation at King Abdul Aziz Hospital, Makkah. In this study, the research instrument (questionnaire) developed consisted of 9 scales including 28 items. The 9 scales were empirically tried and validated by assessing the reliability of the instrument using the internal consistency method (a measure of how producible the data are). The reliability was measured by generating Cronbach's coefficient alpha on Statistical Package for Social Sciences (SPSS) 17 version software (SPSS Inc., Chicago, IL, USA).

Statistical Analysis

The data collected were statistically analyzed using SPSS version 17. Descriptive statistics were used to depict respondents' sociodemographic characteristics and the implementation of TQM components. The Chi-square (χ^2) test of independence was used to test the research hypotheses. Multiple Regression analysis was used to determine the influence of the demographic characteristics of respondents on TQM implementation. Pearson correlation analysis was employed to evaluate the relationship between TQM on employees' performance and customers' satisfaction.

RESULT

(Table 1). The Cronbach's alpha values of the scales ranging from Leadership to Employee satisfaction

No	Scale	Number of Items	Cronbach's Alpha
1	Leadership	4	0.73
2	Continuous Improvement	2	0.87
3	Training and Education	4	0.65
4	Reward and Recognition	2	0.86
5	Communication	2	0.72
6	Teamwork	3	0.68
7	Customers' satisfaction	5	0.76
8	Employees' participation	2	0.89
9	Employees' satisfaction	4	0.87

(Table 1). The Cronbach's alpha values of the scales ranging from Leadership to Employee satisfaction were between 0.65 and 0.89 This indicates that all the TQM constructs had acceptable reliabilities, with all values close to or greater than 0.70 Cronbach alpha coefficient). Reliability analysis of items for TQM practice.

(Table 2). Analysis of TQM implementation constructs

Item		Mean		Standard Deviation	χ^2
Leadership	Management demonstrates a commitment to work and quality improvement in service.	2.85	0.184	10.18	
	The quest for quality is the top management's responsibility				
	Organizational commitment is a determinant of my performance at work				
	I have full confidence and trust in the hospital management				
Continuous Improvement	The management of the hospital undertakes a self-assessment of its quality	2.78	0.032	0.078	
	Best effort is demanded by the management				
Training and Education	Management provides training and development programs on job participation and handling of job challenges	2.72	0.152	10.136	
	The training program received had a good positive impact on my work effectiveness				
	I have access to the required information about job performance				
	There is an available system for me to share task-relevant information				
Reward and Recognition	Employees' effort, creativity and support are recognized and rewarded by the management	2.98	0.045	0.207	
	Increment in my salary determines my performance in the hospital				
Communication	There is effective communication among employees and management in the hospital	2.78	0.126	1.91	
	Management performs routine contact with clients/patients and employees				
Customer Focus	Clients'/patients satisfaction is a paramount issue in the hospital	2.85	0.507	86.349	
	Quality of the organization is directed toward job performance and customer satisfaction				
	Customer feedback are used to improve service quality				
	Is there a reduction of clients/patients in the hospital?				
	Are there lots of complaints made by clients/patients?				
Teamwork	Teamwork influences my participation and performance at work	2.78	0.1	2.068	
	Management insists on teamwork for better quality				
	Are employees willing to share their expertise with each other?				
Employee participation	Employees are involved in decision-making on the quality of the service	2.84	0.155	2.351	
	Employees are empowered to take direct and useful action, which affects service quality				
Employee Satisfaction	Management provides adequate resources for a quality job to be done	2.68	0.089	2.935	
	Is there accountability and transparency in the managerial process?				
	Does external factors affect employees and their job performance?				

(Table 2). The assessment of the implementation of the principles of total quality management in the hospital of interest gives a conceptual analysis of the principles of TQM under the context of leadership, continuous improvement, training and education, reward and recognition, communication, customer focus, teamwork, employees' participation, and satisfaction. The range of the implementation of TQM practices in the hospital depicts leadership to employee satisfaction.

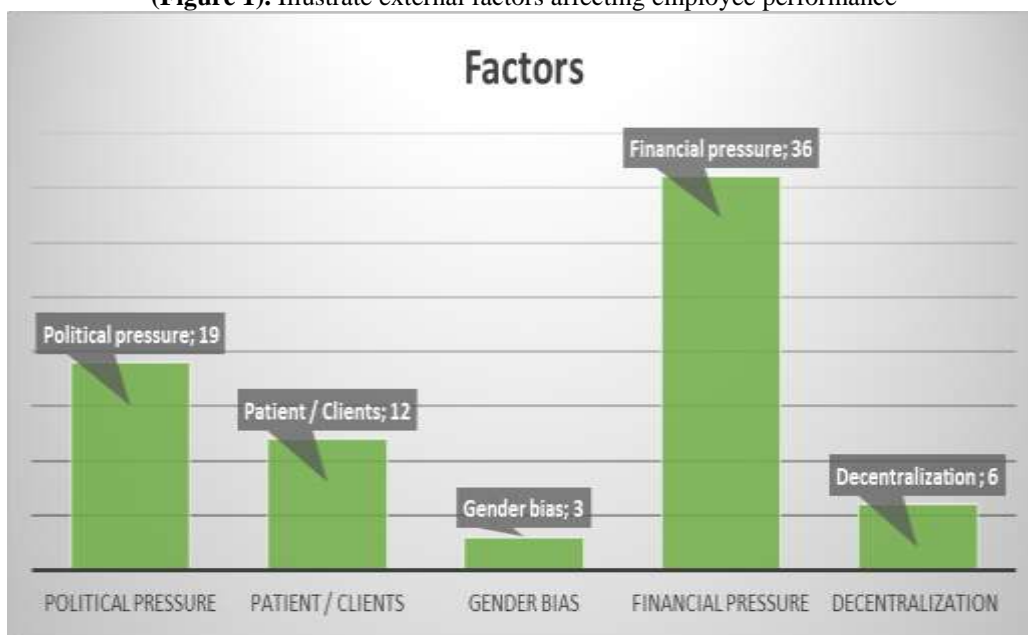
From the study, the best of the critical factors of TQM implemented was Reward and recognition (mean=2.98±0.045; $\chi^2=0.207$, p-value<0.05), while the least factor was employee satisfaction (mean=2.68±0,089; $\chi^2=0,089$, p-value<0.05).

Table 3: Effect of TQM practices on Employee satisfaction.

Items	Mean	Standard Deviation	χ^2	p-value
Management provides adequate resources for a quality job to be done	2.78	1.113	104.66	
The training program received had a good positive impact on my work effectiveness	2.98	1.331	133.245	
Quality of the organization is directed toward job performance and customer satisfaction	2.7	1.172	151.453	
Increment in my salary determines my performance in the hospital	3.21	1.177	35.132	
Organizational commitment is a determinant of my performance at work	2.8	1.108	100.226	
Teamwork influences my participation and performance at work	2.75	1.172	128.623	p>0.05
My knowledge of the total quality of the organization has increased my efforts in improving work performance	2.68	1.134	163.811	
Do external factors affect employees and their job performance?	2.63	0.504	63.642	

(Table 3). According to the findings, salary increment (mean=3.21±1.177; $\chi^2=35.132$, p-value<0.05) was the major determinant factor for employees’ performance and generally, the respondents agreed that there is a relationship between TQM practices and employees’ satisfaction and the result was statistically significant.

(Figure 1). Illustrate external factors affecting employee performance



(Figure 1). From the findings, most of the respondents (64.2%) indicated that external factors affect their performance in the hospital while 35.8% indicated that no external factor influences their performance. Out of the external factors that influence employees’ performance, financial pressure had the highest response followed by Political pressure and the least as gender bias.

DISCUSSION

In this study, nine important factors were identified leadership, continuous improvement, training and education, reward and recognition, communication, customer satisfaction, teamwork, employee participation, and employee satisfaction. Reward and recognition were the most implemented principles, even though employee satisfaction was the least implemented. The study also revealed that there is general approval that the level of TQM implementation was above average (moderate). This suggests that there is awareness from the top (executive) management to adapt the TQM concept. This agrees with previous research that identified customer focus, training, development, recognition, and rewards, as the critical factors in TQM implementation (10,11). The success of quality efforts of an organization depends largely on concentrating on the objectives and communication between management, employees, and customers/patients.

Implementing TQM requires additional skills training, which is vital to its success, and it provides an opportunity to empower and motivate employees. Service quality can be increased through rewards and recognition through the implementation of employee empowerment and involvement initiatives. In a healthcare organization, leadership is one of the major factors for implementing TQM, which involves the integration of quality improvement into the planning process throughout the entire organization [24]. In this study, executive management was shown as having a positive impact on the successful implementation of TQM and is one of the determinants (second highest in TQM plan), mostly in the organizational and employee performance to achieve greater quality service. This is parallel to the report by Remya N, who investigated the success of TQM and its barriers to successful implementation in the healthcare organization (12). Customer focus is essential in any organization for delivering a superior quality customer experience (13). According to the study, customer focus (mean 3.01 out of 5.0) also plays important role in the TQM implementation as all activities, from the outpatient to marketing, treatment, and care services are built around the customer/patient. This is in accordance with the study by Garcia Herrero, et al. who identified customer focus as one of the highest implemented principles of TQM (14). Training and education are important in achieving a successful.

adoption of TQM. Improper implementation of TQM may be attributed to the inadequate knowledge about the importance of its principles and practices through training programs for improving healthcare services and customers' satisfaction as seen in the study, training and education being one of the least implemented TQM practices (mean 2.22). This is similar to the findings of Liu W, who explored the extent to which TQM practices such as continuous improvement, teamwork, top management commitment, customer focus, and training are implemented in Poland hospitals among which training falls as one of the least implemented practice in a government hospital (15) but inconsistent with the findings of Salloum & Aburayya who reported a high perception of training as one of the TQM practices implemented in the United Arab Emirates public hospital (16). Employees are the initiators of the organization's visions and strategies through delivering value for customer needs and expectations therefore, reward, which is an effective concept for describing the progressive value an individual or employee attributes to an object, behavioral act, or internal physical state or job is a regular review of employees' performance.

Increment in salary serves as a motivation for employees' performance as reported in the findings. Appropriate reward and recognition systems are an important strategy to impact employees' attitudes toward the successful quality of their work. This is like the work by Elsafty & Seddek who reported that healthcare workers are motivated by increased salaries, on-time payments, financial rewards, promotion, and improved working conditions (17). The goal of any healthcare organization is that employee's performance and behavior contribute to the organizational growth and performance (18). Employees' performance can be affected by external factors such as competition, financial pressure, gender bias, political pressure, pressure from clients, and decentralization. In the present study, most of the participants were affected by mostly financial and political pressure in the hospital, which could in turn affect the customers' satisfaction.

CONCLUSION

TQM is an operational system for incorporating the organization's quality development, maintenance, and improvement efforts of different aspects to enable products and/or services at the most reasonable level and achieve full satisfaction. It has gained increasing attractiveness as an approach to leading transformational change in an organization's managerial philosophy and operational efficiency. Proper implementation of TQM can be a very effective alternative or solution in improving the health care service quality, growing employees' performance, and customers' or patients' satisfaction in King Abdul Aziz hospital, Makkah, Saudi Arabia. The present study identified nine important factors in the implementation of TQM practices, which include leadership, continuous improvement, training and education, reward and recognition, communication, customer satisfaction, teamwork, employee participation, and employee satisfaction. From the evaluation, it can be concluded that leadership, customer focus, reward, and recognition are the most important determining factors in enhancing employees' performance and satisfaction. It is not unexpected that most TQM ideologies and practices presented in this study are important and basic to the success of any healthcare organization, which can be implemented in different circumstances. Therefore, executive healthcare managers can use the validated instrument for evaluating the effectiveness of TQM implementation in their organizations. It, likewise, can serve as a model for healthcare organizations, that aim at better healthcare quality.

Acknowledgment

The authors acknowledge the support of the Department of Healthcare Organizations Management, Quality, and Strategic plan, educate and develop the staff who can manage this organization. Because this hospital is the main hospital in this region and gives caring for pilgrims and the holy city care by improving patient satisfaction among the entire Staff of the King Abdul Aziz hospital, Makkah, Saudi Arabia.

Conflict of Interest: None

Source of Funding: None

Ethical Approval: Approved

REFERENCES

1. Elsayed Ghonem G, Mohamed Mohamed Y, Hussieny Gaballah S, Salah Hassan M. Effect of Educational Program on Nurses' Knowledge and Practice Regarding Thrombolytic Therapy among Patients with Acute Myocardial Infarction. *American Journal of Nursing Research [Internet]*. 2022(2):58–66. Available from: <http://pubs.sciepub.com/ajnr/10/2/3>
2. A. VALES L, F. Banayo A. Professional Stress Dimensions and the Job Performance among Elementary Teachers: Input to a School-Based Stress Management Program. *International Journal of Research Publications*. 2022 Jul 16;106(1).
3. McEwan C, Lewis K v., Szablewska L. UK street art and the meaning of masks during the COVID-19 pandemic, 2020-21. *Soc Cult Geogr*. 2022;
4. Harton L, Skemp L. Medical–surgical nurse leaders' experiences with safety culture: An inductive qualitative descriptive study. *J Nurs Manag*. 2022;
5. Rohde G, Johannessen B, Maaseide M, Flatland S, Skisland AV, Moi EB, et al. Baccalaureate Nursing Students' Experiences of How the COVID-19 Pandemic Influenced on Learning-A Mixed Method Study. 2022; Available from: <https://doi.org/10.21203/rs.3.rs-1295793/v1>
6. Hansen BR, Whitehouse CL, Nkimbeng M, Beer K, Mackintosh K, Allgood S, et al. Capturing the value and core concepts of the Clinical Research Nurse. *Journal of Research in Nursing*. 2022 Mar 1;27(1–2):32–47.
7. Kanwal S, Naveed W, Afzal F. Joint Effect of In-Role Behavior and Task-Interdependence on Job Burnout Among Early Career Healthcare Professionals. *Sage Open*. 2022 Apr 1;12(2).
8. Uknowledge U, Wethington M. The Effect of Relational Aggression Training on New Emergency The Effect of Relational Aggression Training on New Emergency Department Nurses Department Nurses [Internet]. 2022. Available from: https://uknowledge.uky.edu/dnp_etds/398
9. Hossain DrMdM, Mollah ProfDrMH, zaman DrA, Manzoor DrL. Risk Factors and Major Symptoms in COVID-19 Suspected Patients: A Single-Center Study in Bangladesh. *Saudi Journal of Medicine*. 2022 Sep 20;7(9):480–4.
10. Muse MM, Morris JE, Dodgson JE. An Intergenerational Exploration of Breastfeeding Journeys Through the Lens of African American Mothers and Grandmothers. *Journal of Human Lactation*. 2021 May 1;37(2):289–300.
11. Behera RK, Bala PK, Rana NP, Kizgin H. Cognitive computing based ethical principles for improving organisational reputation: A B2B digital marketing perspective. *J Bus Res*. 2022 Mar 1;141:685–701.
12. Remya N, Lin JG. Current status of microwave application in wastewater treatment-A review. Vol. 166, *Chemical Engineering Journal*. 2011. p. 797–813.
13. McFadden KL, Stock GN, Gowen CR. Leadership, safety climate, and continuous quality improvement: Impact on process quality and patient safety. *Health Care Manage Rev*. 2015 Dec 14;40(1):24–34.
14. Ziems C, Yu JA, Wang YC, Halevy A, Yang D. The Moral Integrity Corpus: A Benchmark for Ethical Dialogue Systems. 2022 Apr 6; Available from: <http://arxiv.org/abs/2204.03021>
15. Liu W, Zhou ZE, Che XX. Effect of Workplace Incivility on OCB Through Burnout: the Moderating Role of Affective Commitment. *J Bus Psychol*. 2019 Oct 1;34(5):657–69.
16. Salloum SA, Aburayya A. Examination of the effect of TQM implementation on innovation performance an assessment study in UAE healthcare sector A conceptual Framework for Implementing TQM in the Primary Healthcare Centers and Examining its Impact on Patient Satisfaction View project Text Mining & Social Media View project [Internet]. Available from: <https://www.researchgate.net/publication/358164233>
17. Elsafty A, Seddek A. Investigating the Critical Success Factors of Excellence Model Implementation in the Public Sector “Egypt Government Excellence Award.” *Int J Soc Sci Stud*. 2022 May 10;10(3):24.
18. Boulahlib L, Abd Manaf NH, Ismail IB, Islam R. Exploring Factors Influencing Academic Staff Attitude towards the Implementation of Total Quality Management (TQM) in Higher Education. *International Journal of Human Resource Studies*. 2022 Sep 14;12(3):98. <https://www.who.int/campaigns/world>