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Evaluating the Hospitals General Service Readiness Index in Guinea for Enhancing their Performances

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This is to certify that the doctoral study by

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Walden University
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Abstract

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MSM-HA, Southern New Hampshire University, 2014

MD, University Gamal Abdel Nasser, Faculty of Medicine, Conakry-Guinea, 1986

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the degree of

Doctor of Healthcare Administration

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Abstract

The healthcare system of Guinea has reported low scores on service availability and readiness assessment (SARA); the scores indicated the low availability of quality drugs, vaccines, medical equipment, and other technologies and involves a continuous history of poor quality-performance metrics. Thus the operational health problems in Guinea could be summarized as health problems (high rate of maternal, neonatal, and infant mortality, high prevalence of communicable and non-communicable diseases) and health system problems (lack of appropriate governance). Therefore, amelioration of the quality of health care and patient safety is needed. The objective of this study was to consider Guinea hospital performance metrics (basic amenities mean score, basic equipment mean score, standard precautions, diagnostics, and essential medicines), and see whether a relationship exists between these metrics and the general service readiness index for the hospitals in Guinea in 2017. The quantitative secondary data set from the Strategic and Development Bureau were reviewed, and the National Institute of Statistics of Guinea conducted the SARA survey. The conceptual framework was epistemological and based on the Donabedian approach to analyzing quality. The Donabedian approach to analyzing quality involved three components: structure, process, and outcome. For this study, the Pearson correlation and bivariate regression interpretation provided the answers to the five research questions with $p < 0.05$. The positive change from this study will include the rational utilization of the resources in the healthcare workers' possession, their compliance with the standard precautions, the appropriate utilization of the diagnostic tests, and the essential medicines' right use.

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Dedication

I dedicate this study to the Almighty, creator of humanity, the source of my force, and my energy. To my late parents, may their souls rest in peace for eternity. To my lamented siblings: Cheick Abdel Kader Camara, Aminata Alkoubra Camara, and Nassaran Kaba, May the Almighty grant them its mercy. My lovely family, which is the proudness of my life. To my teachers, from the elementary school to the end of the present doctoral degree, for your invaluable contributions to my education, let me, accordingly, to become one of the appreciated healthcare professionals. To people who loved and supported me in my life journey. I will never forget the sacrifices that, consequently, constructed my person for achieving my assigned objectives. Your actions remain unmistakable. Thereby, I humbly dedicate this Doctoral study to you all.

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Introduction

Measuring hospital performance, according to standards, is one of the ways that can guide managers to improve the quality of care (Karemere, Mukwege, Molima, & Makali, 2020). Hospital structure is part of a health system, and, as such, it constitutes a system of care (Karemere, Mukwege, Molima, & Makali, 2020). The provision of healthcare services is dependent on the effective and efficient functioning of various components of a healthcare system (Babalola, & Moodley, 2020). The examination of health system performance in most countries is usually based on the analysis of system components that deliver care (Babalola, & Moodley, 2020). The health status of the Guinean population continues to give cause for concern (World Health Organization (WHO), 2015). Guinea, with a population of 10.5 million people, is among the least developed countries in the world, ranking 182 out of 192 countries on the 2015 United Nations Human Development Index. Over half of the population, 55.2%, lives in poverty and cannot afford or access social services, including health, education, sanitation, or clean drinking water (United Nations Children's Fund, 2016, p. 1). Guinea has one of the highest maternal mortality rates globally, with 724 deaths per 100,000 live births. Infant and under-5 mortality rates are also high at 123 per 1,000. A nutrition survey conducted in 2016 found that the rate of chronic malnutrition in Guinea is 25.9%, and 16.3% of children under the age of 5 are underweight (United Nations Children's Fund, 2016, p. 1). On average, 53.7% of health service users are dissatisfied with the care they receive. The

main reasons given are the high cost of services (overpricing), the poor quality of the treatment, long waiting times, and shortages of medicines (WHO, 2015).

Measuring organizational performance is a process of evaluating the implementation of an organization's work capabilities based on specific standards (Setiawannie, & Rahmania, 2019). More than a decade ago, the WHO pioneered the first health system performance ranking of its 191 member nations. It focused on how nations could improve the efficiency of their health system's performance by the development of evidence, based on the outcomes of health systems and their determinants (Schütte, Acevedo, & Flahault, 2018).

In Guinea, the various missions of supervisions (evaluation of the quality of care to improve the performance, promoting patient safety) carried out by the central level (Ministry of Health) in some hospitals based on selected determinants demonstrated that the content of the written instructions is not always strictly observed. In some places, particularly in national hospitals, prices are not posted, management tools are not up to date, medical devices are lacking, and the availability of medicines is not related to the allocated financial resources (MOH - National Direction of the Hospital Settings and Hospital Hygiene, 2017, p. 2). Therefore, two leading problems can be identified: health problems and health system problems, as explained below.

The health problems consist of the elevation of the maternal, neonatal, and infant mortality rate. They likewise consist of the elevation of the prevalence of communicable diseases, emerging epidemic-potential diseases (Ebola, meningitis, cholera, measles,

etc.), and noncommunicable diseases. Finally, they concern the inadequacy of the quality of care (National Health Plan Development, 2015, p. 45).

Health System Issues

Guinea's health system issues are many of the followings:

- lack of organizational governance,
- nonadaptation of the organizational chart,
- no health map to current health system challenges,
- insufficient institutional capacity and leadership,
- decentralization plans are not implemented in the of the health sector,
- low coverage of health care services with inadequate development of community health,
- failing of the primary health centers' policy in the context of the decentralization,
- lack of hospital reforms,
- lack of quality approach,
- absence of updating the infrastructure and equipment to standard,
- lack of appropriate maintenance (National Health Plan Development, 2015, p. 46).

Given these issues, the MOH of the Republic of Guinea needed to renew its commitment to ensuring better coverage of health care deliveries by tackling the obstacles and thus improve the quality of life of the population. Therefore, the Health General States were held in Conakry from 23–25 June 2014 (MOH of Guinea, 2014, p.

5). Information from this study could help health authorities and healthcare administrators determine the true level of hospital performance based on the Service Availability and Readiness Assessment (SARA) survey. Likewise, the study is expected to fill the gap in the literature by providing the real characteristics of the performance of the Guinean hospitals regarding the selected variables.

Problem Statement

A healthcare operational problem exists within Guinea's healthcare system that involves a continuous history of having poor quality performance metrics according to SARA (MOH - National Health Development Plan, 2015, p. 46; Beja, 2020; Collado, 2019). According to the WHO (2020), SARA is a health facility assessment tool that is used to assess and monitor the availability and readiness of services within the healthcare and generate evidence to support the planning and managing of a health system. Guinea's healthcare system has reported low SARA scores due to underfunding and low coverage of quality essential health services characterized by low availability of quality drugs (essential medicines must come from credible providers), vaccines, medical equipment, and other technologies (MOH 2015; Banke-Thomas, Wright, Collins, 2019; Bauri et al., 2019). The Report of the Institutional, Organizational and Functional Audit highlighted that the mission of the MOH to provide quality medicines at affordable prices is far from being fulfilled (MOH, 2016, p. 71). Indeed, the appropriate provision of public-sector medicines through the Central Pharmacy of Guinea (CPG) is not sufficiently functioning to provide a reliable and financially accessible solution for the poor (MOH, 2016, p. 71).

Likewise, there is a significant shortage of biomedical equipment at all levels of the health pyramid (MOH, 2016, p. 85).

In another study on the healthcare system of Guinea, the WHO (2015) stated that, on average, 53.7% of health-service users were dissatisfied with the quality of care received. That dissatisfaction is due to the high cost of services (overpricing), poor quality of treatment, long wait times, and shortages of medicine and drugs. The Health National Policy (2016, p. 13) estimated that the main inadequacies in health care delivery consisted of incomplete essential care packages, poor development of referrals, and minimal compliance with quality standards(e.g., infection control, hospital access, and performance measures, as measured by the following metrics: basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicines mean score).

Performance indicators are a popular mechanism for measuring the quality of healthcare to facilitate both quality improvement and systems management (Braithwaite, Hibbert, Blakely, Plumb, Hannaford, & Marks, 2017). The Health General States (HGS) held in Guinea in June 2014 enabled all the participants to carry out in-depth reflections about the health system problems to determine the strategic directions and priorities for action (Health National Policy, 2015).

The importance of this study resides in the fact that a search of the literature did not reveal any studies that shed light on these operational problems by way of a comparison between Guinea hospital performance metrics: basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score,

and essential medicines mean score, and whether an association or relationship exists between them and the general service readiness index for the hospitals in Guinea in 2017. Therefore, the study allows to make a comparison between the selected metrics and the general service readiness index for the hospitals in Guinea. Finally, improving the quality of health care and patient safety remains one of the main priorities of the MOH of the Republic of Guinea (National Direction of the Hospital Settings and Hospital Hygiene, 2017). Some of those priority issues are the high maternal, neonatal, infant mortality rate, high prevalence of communicable and non-communicable diseases, and emerging epidemic diseases.

Among all the highlighted operational problems of the healthcare system in Guinea, the improvement of hospital performance remains critical. This study will, therefore, fill the gap in the literature by explaining the need for the appropriate use of the available resources. It will also allow the Guinean health professionals and researchers to explore the performance issues that affect hospitals in Guinea. Consequently, the study will encourage healthcare workers to use the available resources appropriately, and it will make significant recommendations to enhance their performance effectively.

Purpose of the Study

The purpose of this quantitative study was to identify whether a significant statistical association exists between Guinea hospital performance metrics (basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicine mean score), and the general service readiness index for the hospitals in Guinea in 2017, using secondary quantitative data

from 2017. As a result, healthcare administrators will better understand the relationships amongst the various metrics and how they may be impacted by the other. That understanding will help further understand and improve the performance planning of hospital settings in Guinea. The study will use quantitative secondary data sets from the MOH of Guinea, conducted by the National Institute of Health of Guinea: (SARA and DQR: Data Quality Review and QoC: Quality of Care Tools, 2017).

The dependent variable for the study was the general service readiness index for hospitals in Guinea in 2017. The independent variables were the basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicines mean score.

Research Questions and Hypotheses

RQ1 Quantitative: What is the association, if any, between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*01: Based on the findings, there is no significant statistical association between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017.

*H*a1: Based on the findings, there is a significant statistical association between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017.

RQ2 Quantitative: What is the association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*02: Based on the finding, there is no significant statistical association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017.

*H*a2: Based on the findings, there is a significant statistical association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017.

RQ3 Quantitative: What is the association, if any, between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*03: Based on the findings, there is no significant statistical association between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017.

*H*a3: Based on the findings, there is a significant statistical association between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017.

RQ4 Quantitative: What is the association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*04: Considering the findings, there is no significant statistical association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017.

*H*a4: Based on the findings, there is a significant statistical association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017.

RQ5 Quantitative: What is the association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*05: Considering the findings, there is no significant statistical association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017.

*H*a5: Based on the findings, there is a significant statistical association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017.

Conceptual Framework

Quality of care and patient safety are now recognized globally as a healthcare priority (Islam & Li, 2019). Clinicians are, therefore, increasingly called on to improve the quality of the systems of care that they deliver (Batalden, 2018). The conceptual framework of this study was based on the epistemology theory. Epistemology is an area of philosophy concerned with the nature and justification of human knowledge (Hofer & Pintrich, 1997). The purpose of this framework is to facilitate the comprehension of the Donabedian approach to quality improvement. Likewise, the objective of this framework is to help understanding the relationship between the evaluation of the hospitals general service readiness index in Guinea and the improvement of their performances.

The Donabedian approach uses the epistemological theory of this study. The Donabedian approach remains focused on the amelioration of quality. Donabedian's model for analyzing quality includes three factors: structure, process, and outcome (Kunkel, Rosenqvist, & Westerling, 2007). *Structure* refers to prerequisites, such as

hospital buildings, staff, and equipment (Kunkel, Rosenqvist, & Westerling, 2007). *Process* describes how the structure is put into practice, such as specific therapies (Kunkel, Rosenqvist, & Westerling, 2007). *Outcome* refers to the results of processes, for instance, results of therapy (Kunkel, Rosenqvist, & Westerling, 2007). Because the evaluation of the quality of health care is a vast realm, this study focused only on the selected metrics for assessing quality: basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, essential medicine mean score, and the general service readiness index. Many advantages are gained by using the outcome of healthcare selected metrics' evaluation as the criterion of quality in medical care (Donabedian, 2005).

In this study, the structure consists of the amenities and the infrastructure. The amenities and the infrastructure are then the prerequisites for assessing the quality of the structure. Standard precautions, diagnostics, and the availability of essential medicines describe the medical practice executed in the hospital facilities in Guinea. They are, therefore, the process in this study. Finally, the amelioration of the hospitals' performance index is the outcome of this study.

The outcome of medical care in terms of recovery, restoration of function, and survival has been frequently used as an indicator of the quality of medical care (Donabedian, 2005). Although some outcomes are generally unmistakable and easy to measure (death, for example), other outcomes, which are not so clearly defined, can be difficult to measure (Donabedian, 2005). This framework is an excellent fit for this study because it facilitates the comprehension of the Donabedian approach of quality

improvement in the Guinean healthcare's performance improvement. Therefore, the Donabedian approach was related to the determination of the impact of basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicines mean score on the general service readiness index for the hospitals in Guinea in 2017.

Nature of the Study

The nature of this study included using a quantitative correlational research design with a quantitative secondary data set based on evidence and numerical data from the MOH, as conducted by the NIS of Guinea (SARA 2017). The study used secondary data to demonstrate if there is a relationship between the selected variables. This quantitative study used statistical techniques of SPSS software, such as Pearson correlation and bivariate regression, and it explained the need to appropriately use the available resources. The SARA data set has not previously been used for research. This study was the first to use the SARA data set for such research in Guinea. Therefore, the study allowed Guinean healthcare professionals and researchers to concentrate on the performance issues that affect hospitals in Guinea. Consequently, it will make relevant recommendations to ameliorate their performance efficiently.

Definition of Terms

Infection prevention and control consist of the prevention and control of infections, including those associated with medical care. It also involves developing necessary practices to prevent infections; nonetheless does not include the control of

infection levels or investigations regarding their occurrence, which are traditionally essential parts of infection control programs (Engender health, 2014, p. 3).

Standard precautions are a set of measures designed to reduce the risk of cross-transmission of infectious agents between caregivers, cares for, and the environment, or by exposure to a human-derived biological product (France Society of the Hospital Hygiene, 2017, p. 11).

Hospital-acquired infections (HAIs) are defined as infections that are occurring ≥48 hours after admission, with onset from day 03 onwards (Despotovic, Milosevic, Milosevic, Mitrovic, Cirkovic, Jovanovic, & Stevanovic, 2020).

Healthcare-associated infections (HCAIs) are infections that occur while receiving health care. They are developed in a hospital or other health care facility that first appear 48 hours or more after hospital admission or within 30 days after having received health care (Haque, Sartelli, McKimm, & Abu Bakar, 2018).

Service availability and readiness assessment (SARA): The service availability and readiness assessment tool is designed to generate a set of core indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening over time (WHO, 2015, p. 10).

Linear regression: Linear regression is a statistical procedure for calculating the value of a dependent variable from an independent variable. Linear regression measures the association between two variables. It is a modeling technique where a dependent variable is predicted based on one or more independent variables. Linear regression analysis is the most widely used of all statistical techniques (Khushbu, & Suniti, 2018).

Bivariate regression: Bivariate regression consists of a regression model that examines the effect of one independent variable on the values of a dependent variable (Frankfort-Nachmias, & Leon-Guerrero, 2018, p. 326).

Pearson correlation: Pearson correlation is a measure of association used to determine the existence and strength of the relationship between interval-ratio variables (Frankfort-Nachmias, & Leon-Guerrero, 2018, p. 325).

The dependent variable consists of the variable that depends on other factors that are measured. These variables are expected to change as a result of experimental manipulation of the independent variable or variables. It is the presumed effect (University of Southern California - USC Libraries, 2020).

The Independent variable consists of the variable that is stable and unaffected by the other variables you are trying to measure. It refers to the condition of an experiment that is systematically manipulated by the investigator. It is the presumed cause (USC Libraries, 2020).

The general service readiness index refers to the capacity of all health facilities to provide general health services. This operational capability is, therefore, defined as the availability of elements required for service delivery in the following five areas: Amenities, Essential equipment, Standard precautions for infection prevention, Diagnostic capacity, and Essential medicines (National Institute of the Statistics, 2017).

Assumptions

This study was based on three assumptions. In this study, it was assumed that (a) the metrics used are from the SARA survey that the National Institute of the Statistics

conducted in Guinea in 2017. Nevertheless, it was assumed that (b) the results of this study could be applied to all the health care settings of the Republic of Guinea. Therefore, the study could be extended to the departments of the MOH, the attached and support services associated with the MOH, and the religious health structures. The hospital is one of the health facilities that aims to achieve health status standards and can reach all levels of society (Setiawannie & Rahmania, 2019). The improvement of the hospitals' performance in Guinea remains critical. This study will, hence, fill the gap in the literature by explaining the necessity of the appropriate utilization of the available resources. It will equally allow the Guinean healthcare professionals and researchers to explore an underexplored realm, which consists of the performance issues that affect the hospital in Guinea. Finally, it was assumed that (c) there is a relationship between each selected independent variable (IV) of the study and the General Service Readiness Index, consisting of the dependent variable (DV). This assumption remains essential because it could eliminate human errors due to diverse factors beyond human control.

Limitations, Challenges, and Barriers

To make this study more specific and to further be conformed with its objective, the study focused on data from SARA, which provides the actual situation of the healthcare system of the Republic of Guinea without explaining the current evolution of the performance of hospital settings based on their conformity with the selected variables. The selected quality indicators for independent variables are not extensive. Therefore, they remain basic because the selected contents (elements) of each quality indicator are limited for every independent variable.

Potential barriers to access to some specific data include, but are not limited to, the lack of their availability on the internet remains noticeable (some data were not available on the internet), the lack of the organization of the archives. Finally, the lack of appropriate online publishing focused on hospital settings of the Republic of Guinea makes this study difficult because the internet service and accessibility remain expensive in Guinea. Nevertheless, there are some useful print publishing concentrated on the hospital settings of the Republic of Guinea.

Literature Review

Literature Search Strategy

To identify prospective, peer-reviewed articles (as well as books and grey literature), the following electronic databases: Medline, PubMed, and Google, were searched for the years 2014 to 2020 using the following keywords: *Health system*, *Hospital performance, SARA survey, Donabedian model, Standard precautions.*

The following topics were researched: Donabedian model, hospital performance management, infection prevention and control, standard precautions. A few older articles were necessary to support some relevant concepts, such as the Donabedian model.

Then, the primary step was reviewing the documents on Guinean hospitals' performance, based on selected metrics, included the Guinean MOH and its services related to healthcare settings performance and quality improvement.

Table 1

Source of Search

Sources	Topics	Numbers	Utilized
MOH Guinea and services	Health system	-	14
National hospital Donka	Report	1	1
Google	National Institute of statistics Guinea – SARA survey	465,000	2
Google	Different topics on healthcare	-	40
Google	Hospital performance	689,000	2
Google	Donabedian model	523,000	2
Google	Standard precautions	18,900	1
Google	Country cooperation strategy at a glance - Guinea	492,000	1
Walden Library	Donabedian model	735	3
Walden Library	Hospital performance management	1003	3

The Healthcare System Overview

Healthcare systems globally experienced intensive changes, reforms, developments, and improvements over the past 30 years. Multiple actors (governmental and nongovernmental) and countries played their part in the reformation of the global healthcare system (Durrani, 2016). Healthcare systems became more and more complex over the past three decades (Reibling, Ariaans, & Wendt, 2019). Existing health systems all over the world are, therefore, different due to the various combinations of components that can be considered for their establishment (Schütte, Acevedo, & Flahault, 2018).

Bielecki and Nieszporska (2019) stated that national healthcare systems in all countries do not act effectively. Hence, specific strategies for introducing organizational innovation to the public organization should be considered. Regarding that fact, healthcare administrators should regularly evaluate the performance of their health settings like hospitals, based on specific indicators.

Key performance indicators (KPIs) remain paramount navigation tools for hospitals. Therefore, they provide managers with valid information enabling them to identify institutional strengths and weaknesses and improve accordingly managerial performance (Pourmohammadi, Hatam, Shojaei, & Bastani, 2018). Healthcare administrators in the hospital use key performance indicators to monitor and evaluate performance against benchmark values or standards. Then, KPIs show trends and explain how improvements are being made over time (Mohamed & Parwaiz, 2015). KPIs also help to compare results with approved standards or against other similar comparable organizations. This approach, therefore, helps healthcare administrators to improve the services they provide. Their actions remain concentrated on identifying whether the performance is at the desired level or not and likewise to determine where amelioration is required (Mohamed & Parwaiz, 2015).

Performance indicators are a popular mechanism for measuring the quality of healthcare to facilitate both quality improvement and systems management (Braithwaite, Hibbert, Blakely, Plumb, Hannaford, Long, & Marks, 2017). The reliability of hospital assessment results depends, consequently, on the appropriateness of the indicators used (Rahimi, Khammar-Nia, Kavosi, & Eslahi, 2014). Finally, Pourmohammadi, Hatam,

Shojaei, and Bassani (2018) stated that hospital performance management remains a multi-dimensional issue, each dimension having its significance. Based on the evidence, indicators are then dependent on the evaluation model employed, the evaluation objective, and the views of executive managers or administrators and participants in the study.

The Health System of the Republic of Guinea

For some 30 years, Guinea has a tradition of organizing its health system based on primary health care and the health district. This system has improved the availability and accessibility of essential health benefits at a given time. Despite these achievements, the recent analysis of the situation of the sectors demonstrated a lack of performance (MOH. National Health Development Plan, 2015, p. 10).

The health system in the Republic of Guinea is practically based on the administrative division of the country. The country is, therefore, divided into 08 regions and 38 health districts. The MOH has three levels in its administrative structure: the central level, which includes the central directorates and structures organized around the office of the Minister and the General Secretary office; the intermediate level, which consists of the regional health directorates (8 total); the peripheral level, which is represented by the health districts (33 and 5 municipalities in Conakry; Strategic and Development Bureau, 2017, p. 18).

Guinea's health system is organized in a pyramid shape style (oriented from the base to the apex where the apex represents the central level), displayed in the table below:

Table 2

Levels of the health system organization of Guinea

Levels	Health care structures
Central	National Hospitals
Intermediate	Regional Hospitals
Peripheral	District Hospitals Municipalities Medical Centers Ameliorated Health Centers Health Centers Health Posts

Note. From "Statistic Directory," by Strategic and Development Bureau2017), *MOH of the Republic of Guinea*, p. 19. In the public domain.

Organization of Care in the Republic of Guinea

The national system of care is organized in a pyramid manner and includes the public, private, and community subsectors. At the public subsector level, the country has 410 health centers and 925 health posts at the primary level. At the secondary level, it counts 38 hospitals (Regional Hospitals, District Hospitals, Township Medical Centers). Likewise, at the tertiary level, the country has a total of three national hospitals. In Guinea, it also exists the community health workers and traditional medicine providers. There are four hospitals of mining and agricultural companies. The formal private sector includes 41 clinics and 106 medical centers. The overall goal of a healthcare system is achieving good health for the population, ensuring that health services are responsive to the public, and ensuring fair payment systems. A hospital has a central role in achieving these goals (Tyagi & Singh, 2019).

Regional and district hospitals offer almost the same package of health care. Consequently, specialized services such as cardiology, diabetes specialty, pulmonology,

neurology, and urology that should be developed in these hospitals are not yet functioning in all regional hospitals. The national hospitals offer tertiary services distributed among various specialties and are involved in training and research activities. They consist accordingly of the Conakry teaching hospital (National Plan of Health Development, 2015).

National Hospitals Structures

The National Hospital is a public administrative institution of a scientific and social nature under the supervision of the MOH, and it enjoys of the legal personality, of financial autonomy, and management under the legislation and regulations that are governing the Public and Administrative Institutions. It provides national coverage and can be in any city of Guinea. Nowadays, Guinea has three national hospitals. The official documents used for this study included two national hospitals. Therefore, Conakry's national hospital centers (Donka and Ignace Deen) have a vocation of teaching hospitals, health research centers. They shall, likewise, include at least the units planned at the regional level. The other specialized units are created according to the specific needs by order of the Minister of Health (National Direction of the Hospital Settings and Sanitary Hygiene, 2019, p. 8). A hospital has a central role in providing good health to the population. The emphasis, therefore, should be put on the development of systems monitoring the performance of health care providers, especially the hospitals (Tyagi & Singh, 2019).

The current services of two national hospitals displayed as following:

Table 3

Current Services of two National Hospitals

Ignace Deen	Donka
Commons Services	Commons Services
Internal medicine	Internal medicine
Gastroenterology	Pediatric
Pediatric	Visceral surgery
Visceral surgery	Gynecology obstetrical
Gynecology obstetrical	Traumatologyorthopedic
Traumatology orthopedic	Stomatology
Stomatology	Emergency
Emergency	Medical imaging
Medical imaging	Laboratory
Laboratory	Pharmacy
Pharmacy	Anesthesia resuscitation
Anesthesia resuscitation	ORL
ORL	Ophthalmology
Ophthalmology	
Specialized Services	Specialized Services and Units
Cardiology	Pathology anatomy
Urology	Dermatology
Pulmonology	Infectious diseases
Neurology	Psychiatry
Acupuncture	Nephrology, endocrinology
Forensic medicine	Heart surgery, oncology surgery

Note. From "2018 Report of the Public Hospital Management" by National Direction of the Hospital Settings and Sanitary Hygiene 2019, *MOH*, p. 8. In the public domain.

Infrastructure

Although transport, electricity, healthcare facilities, water, and telecommunication are supportive services in healthcare delivery, the lack of these services could significantly affect patient care (Kaibung, Mavole, Okuku, 2017). Equally, problems with healthcare facilities jeopardize the ability of health care professionals to appropriately deliver health services (Kaibung et al., 2017). Therefore, infrastructure must integrate the

hospital, as the center for acute and inpatient care, into the broader health care system and should facilitate the seven domains of quality, which are: patient experience, effectiveness, efficiency, timeliness, safety, equity, and sustainability (Luxon, 2015). Hence, infrastructure consists of a key pillar supporting the fundamental aim of promoting improved standards of care and well-being for all patients, together with a good experience of the health care system (Luxon, 2015).

In Guinea, the infrastructure presents heterogeneous physical and functional states due to the discrepancies in their realization and their maintenance. However, none of the levels of service respond to the 2006 health card standards. Indeed, the density of health care stations is 12,000 inhabitants per health posts instead of 3,000 inhabitants per health post (MOH, 2014). In terms of hospital infrastructure, the national ratio is one hospital per 260,000 inhabitants. This ratio is 1:451,357 in the Kankan region. WHO recommends 1/125,000. For primary health centers, the ratio in Conakry is 1/76530 compared to a standard of 1/25000, indicating that the rate of geographical accessibility of public structures remains low. Inside the country, there is a health center for 25759 inhabitants compared to an average of 1/15000 (MOH, Preparing Health General States, 2019, p. 5).

Of 1,379 public structures, not including administrative buildings, 259 health posts do not meet demographic, geographical, and health standards (28%). In some regions, more than 50% of health posts are closed due to poor physical condition or lack of staff, 203 out of 410 primary health centers are in poor condition (50%), and 23 hospitals are classified as non-compliant, or 53% (MOH, Preparing Health General States, 2019, p. 6). Qualitatively, more than half of the structures (60%) are outdated,

with equipment in poor condition, especially in health posts and primary health centers (MOH, 2014). Health care infrastructure constitutes a major component of the structural quality of a health system (Scholz, Ngoli, & Flessa, 2015).

Table 4

Number of Health Care Types per Region

Regions	Health Posts	Primary Health Centers	Ameliorated Health Centers	Municipality Hospitals	District Hospitals	Regional Hospitals	National Hospitals
Region of Boke	136	42	1	0	4	1	0
Region of Conakry	6	24	0	6	0	0	3
Region of Faranah	175	48	0	0	3	1	0
Region of Kankan	358	65	1	0	4	1	0
Region of Kindia	246	52	2	1	4	1	0
Region of Labe	257	58	1	0	4	1	0
Region of Mamou	175	41	0	0	2	1	0
Region of NZerekore	288	77	1	2	5	1	0
Total of Guinea	1640	407	6	9	26	7	3

Note. From "Statistical Directory" by Strategic and Development Bureau, 2017, *MOH,* p. 28. In the public domain.

Equipment

The association between hospital characteristics and utilization of high-tech medical equipment has received more attention for its complicated consequences on health care cost and quality (Yan, Hao, Jingsong, Bosheng, Zude, Luyang, & Yingyao,

2018). Improving quality and controlling costs of hospital care are two key objectives of health policy in many countries, although the relationship between quality improvement and cost control remains complex (Yan et al., 2018).

In Guinea, in the analysis of the situation of equipment, it appears that the equipment in all health centers remains in a state of severe deterioration (60%). At the hospital level, the overall availability of equipment in hospital facilities is 16%. The beds are insufficient and unequally spread out. Only the regions of Conakry, Faranah, and N'Zerekore have a sufficient number of beds in relation to their population. Indeed, one-third of the functional beds are concentrated in Conakry alone, which is home to only 15% of the population. This ratio is supported by the presence of the three national hospitals (MOH, 2014, p. 18).

Infection Prevention and Control

Standard precautions refer to a system of actions, such as using personal protective equipment or adhering to safe handling of needles, that healthcare workers take to reduce the spread of germs in healthcare settings such as hospitals and nursing homes (Moralejo, El Dib, Prata, Barretti, & Corrêa, 2018). There are plenty of reasons hand hygiene compliance lags. For instance, sinks or hand-rub dispensers are not always in convenient places in hospitals. When a doctor or nurse goes to clean their hands, there might not be soap or hand sanitizer in the dispenser. Some health care workers might be concerned about drying out their skin. Or some may still need convincing that hand hygiene is important. Finally, hand hygiene may simply be overlooked given other tasks

that demand a health care worker's attention in the often-chaotic hospital setting. And those aren't the only barriers (Saint, 2016).

Hospital-acquired infections (HAI) affect hundreds of millions of patients worldwide every year. In developed countries, HAI covers 05-15% of hospitalized patients, and it can affect 09 to 37% of patients admitted to intensive care units (ICUs). In developing countries, there is little data available on HAI in the literature. In Guinea, the actual consequences of hospital-acquired infections have not been accurately measured. Because there are no statistics on HAI in Guinea, it is, therefore, estimated that they account for 10 to 25% of admissions to public-sector hospitals (National Direction of the Hospital Settings and Hospital Hygiene, 2016, p. 1). Nevertheless, in terms of infection prevention risks, it is noted that in 2012, among women that underwent cesarean sections (C-section), 94% of them received antibiotic therapy. Despite this measure, 03% of them had an infection at the operation site (National Direction of the Hospital Settings and Hygiene, 2017, p. 1). At the National Donka Hospital, the overall suppuration rate among scheduled patients for surgeries was 6.4%. That rate was lower than the suppuration rate recorded among unscheduled patients that underwent surgeries (11.8%; National Donka Hospital, 2019, p. 8).

Hand hygiene remains the most essential and useful infection prevention and control measure that can be accepted to stopover the transmission of infection prevention and control. However, the degree of adherence to hand hygiene protocols by health care providers is inappropriate since its rates of only 20 - 50% remain unacceptable (National Direction of the Hospital Settings and Hospital Hygiene, 2016, p. 11). According to the

SARA 2017 survey that the MOH (2019) reported, only 14% of establishments had all the elements of standard precautions with an average availability of 72% (MOH, Preparing the Health General States, 2019, p. 12).

Significance, Summary, and Conclusion

This study was expected to provide insight into the importance of respect for the instructions of Guinean health authorities, including compliance with the standards precautions, for example, the infection control and prevention measures in hospitals to avoid HAIs. There is a crucial need to manage hospital structures effectively. That management includes the appropriate use of the available resources, the execution of the instructions provided by the MOH. Therefore, the study sought to help healthcare administrators by giving them the information they needed to contribute significantly to improving the health care provided in the hospital settings.

This study consists of a fundamental analysis that could involve social change. The improvement of the quality of health care allows the population to be actively engaged in community building by participating in health promotion in Guinea. Likewise, this study could contribute to positive social change by providing information to healthcare organizations and policymakers to work closely with healthcare workers to respect all the instructions provided. Therefore, healthcare workers will be conformed with the instructions provided by the MOH. It will allow the amelioration of the performance of the hospitals. The results could help researchers focus on ways to help patients and their families access health care in Guinea at efficient hospitals that are

compliant with MOH guidelines. Some guidelines involve improving the quality of health care and respecting the standards precautions.

In the healthcare system of the Republic of Guinea, there are myriad operational problems that need to be addressed. Therefore, this study collected the Guinean hospital performance metrics (basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicines mean score) to see whether an association or relationship exists between them and the general service readiness index for the hospitals in Guinea in 2017. Thus I reviewed a quantitative secondary data set, which was based on evidence and numerical data from the MOH, with the SARA survey conducted by the National Institute of Statistics of Guinea.

The Donabedian approach consisted, therefore, of the epistemological theory of the study. Donabedian's model for evaluating quality includes three factors: structure, process, and outcome.

The study, which measured hospital performance in Guinea, is expected to encourage healthcare workers to use the available resources appropriately; it will make significant recommendations to enhance their performance effectively regarding the selected quality indicators of this study. The power of hospital performance management today is recognized for providing effective healthcare quality. Hospital performance management is important for any healthcare organization. It bridges the gap between the conceptual planning of organizational goals and the physical monitoring of the status of daily operations (Tyagi & Singh, 2019).

Section 2: Research Design and Data Collection

Introduction

The purpose of this quantitative study was to identify if whether a significant statistical association exists between Guinea hospital performance metrics (basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicine mean score), and the general service readiness index for the hospitals in Guinea in 2017.

Section 1 of this study described the foundation of the study and literature review. The description included but is not limited to the healthcare system overview, the health system of the Republic of Guinea, the organization of health care in Guinea, the situation of the national hospital structures, the infrastructure, equipment, and the infection prevention and control. For that section, the documentations were from validated documents of the Guinean MOH; peers reviewed articles from Walden University library resources, and from other peers reviewed resources. Likewise, section one of this study included the determination of the relationship between the selected independent variables and the general service readiness index for the hospitals in Guinea in 2017, which is the dependent variable. Finally, the section covered the significance, the summary, and the conclusion.

Making a decision based on the evidence is an essential element in the effective and appropriate management of any project for the health sector development that allows to increase their performance (SARA, 2017). The Strategic and Development Bureau does not provide enough information on the availability and operational capabilities of

health structures. Therefore, this lack of information represents a deficiency in the practical efforts made to improve the accessibility of quality care to populations if the operational capabilities of health structures are improved (SARA, 2017).

This chapter describes the research method and its design. It explains the collection of data, the instruments used, the usability of the instrument, the validity and reliability of the instruments, and possible ethical dilemmas. The authorities of the MOH, the decision-makers, and healthcare administrators could use the results of this study to enhance the performance of the hospitals in the Republic of Guinea. They could also use the results to improve the weaknesses of Guinea's healthcare system.

Research Design and Rationale

This quantitative study used a correlational design. The study used secondary data from SARA. The data set has not previously been used in research. The selected data were analyzed using SPSS software. Therefore, the study used the Pearson correlation. Likewise, it used bivariate or linear regression to establish the statistical significance of the association between the independent and dependent variables as indicated by the research questions and hypotheses.

Secondary Data Analysis Methodology

Secondary Data Types and Sources of Information

The quantitative secondary data sets used in this study were from the Strategic and Development Bureau of the MOH. The National Institute of Statistics of Guinea (NIS) conducted the SARA survey (2017). The source for the secondary data sets is:

MOH (2018). Strategic and Development Bureau (SDB). Conducted by the National Institute of Statistics of Guinea (NIS) 2017. Survey SARA-DQR-QoC, 2017. The Final Report is accessible from

http://www.stat-guinee.org/images/Documents/Publications/SSN/sante/Enquete%20SARA/RAPPORT_SARA_GUINEE_2018.pdf

The data sets consist of SARA chartbook_v2.2_Guinea_2017-ENSEMBLE. That SARA chartbook is likewise available in Microsoft Excel, which size is 33.5 MB on disk.

Secondary Data Analysis Methodology

For parsing the secondary data in this quantitative study, the study used statistical techniques, such as the Pearson correlation and bivariate regression. Each independent variable was separately compared to the dependent variable. Bivariate regression is a regression model that examines the effect of one independent variable on the values of a dependent variable (Frankfort-Nachmias, & Leon-Guerrero, 2018, p. 326).

Pearson correlation is a measure of association used to determine the existence and strength of the relationship between interval-ratio variables (Frankfort-Nachmias, & Leon-Guerrero, 2018, p. 325).

Population Sampling, Sampling Procedure, and Analysis

SARA 2017 survey report is freely available for download as a PDF file on the website link provided and in Microsoft Excel on request. SARA is a census type survey. All public and private health facilities were eligible ($N = 2263$). However, a sample of 417 health structures was drawn to conduct data quality review (DQR) and quality of care

(QoC) surveys. Furthermore, at each health structure level, at the time of the survey, a maximum of ten (10) patients were systematically drawn to conduct the satisfaction survey.

Power Analysis

For power analysis, the study used G*Power. G*Power allows fulfilling statistical tests, which include *f* tests, *t*-tests, x^2 test, and *z* test (Heinrich Heine University Dusseldorf, 2017). Of the different types of analysis, the study used a priori and post-hoc analyses (Heinrich Heine University Dusseldorf, 2017). For all the research questions, it was assumed that the sample size must remain large. Therefore, the study used *f* tests with multiple linear regression (Fixed model, R^2 increase) statistical test. It first used a priori type of power analysis. The results of G*Power provided $N = 138$ (sample size automatically provided when computing), the total number of predictors 5, actual power = 0.95. The results of the Post-hoc analysis with $N = 417$ (sample size obtained from SARA data sets), effect size $f^2 = 0.15$, the significance $\alpha = 0.05$, provided 0.99 of power. The sample size of 417 gave enough power of 0.99 to demonstrate a significant correlation among the variables.

Data Accessibility and Permissions

Data is obtainable on request, and it remains free of charge. SARA 2017 report containing data is equally freely accessible in PDF file from the link provided and from the Strategic and Development Bureau of the Guinean MOH upon request. No permissions no restrictions are necessary for their obtaining and utilization.

Data Collection and Management

That data exists on the database of the Strategic and Development Bureau of the Guinean MOH. And it is available in the SARA 2017 final report. It is equally possible to obtain the data chartbook (Microsoft Excel) on demand. That chartbook is not accessible online. The first sheets of the data sets described the instructions, metadata, indicators, weighted data, labels, and survey types.

In these data sets, it exists all the selected metrics of this study. Equally, it exists the specific service availability and readiness like the family planning availability, availability of prenatal care, basic and complete obstetric availability and readiness, child immunization availability, child health availability, adolescent health availability, availability and readiness of services against malaria. Data sets also have data for the availability and readiness of services for tuberculosis and HIV. Likewise, information concerning diabetes, cardiovascular, basic and complete surgery availability and readiness are included. They also have several other topics, including cervical cancer service availability, blood transfusion availability, and readiness. Therefore, SARA data sets 2017 are appropriate for different researches on the healthcare system of Guinea.

Instrument and Operationalization of Constructs

The data used are from the Strategic and Development Bureau of the Guinean MOH executed by the National Institute of Statistics of Guinea (SARA chartbook_v2.2_Guinea_2017-ENSEMBLE with DQR and QoC analysis). The instrument was a sample survey that was conducted in hospitals across the country. The instrument was not rating scales. It was a subject-completed instrument.

The census was the type of used survey. The questionnaires were administrated by direct interviews and exploration of patients' files. The survey applied the following three types of questionnaires: SARA questionnaires, Data Quality Review (DQR) questionnaires, and finally, the Quality of Care (QoC) questionnaires.

Usability

The instrument was easy to use because participants were freely engaged in the study. The different managers of health care services answered the questions without any difficulties because they used the tablets that Cspro (a software designer) developed the collection programs. The programs were accordingly easy for their utilization.

Validity

This study intended to measure Guinea hospital performance metrics: basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicine mean score, to determine the relationship between these metrics and the general service readiness index for the hospitals in Guinea in 2017. The data and the instrument are valid because they measured the variables and demonstrated the relationship between the selected variables.

Reliability

The data rolled out from the SARA survey conducted by the National Institute of Statistics database, which is the nation's official statistical bureau, responsible for the design, development, coordination, and implementation of statistical activities and socio-economic information throughout the national territory of Guinea. The National Institute

of Statistics, accordingly, provides statistics that the authorities and multidisciplinary professionals of Guinea validate.

The data collection was also performed with the participation of the strategic and development bureau workers, including other healthcare professionals; hence, the data remains reliable.

Tables of Measurement of Variables and Operational Definitions

For this study, there are seven (7) variables. One (Structures) consists of a nominal measure that was labeled from 1 to 9 in order to standardize the measurement for linear regression. The others are scale measures. In the table, the string variable consists of the structures of the Republic of Guinea. The study computed six (6) variables: Five (5) predictors and one (1) predicted. Consequently, the Pearson correlation test included the column of the structures in the displayed graphs, which is a categorical variable.

Table 5

Measurement of Variables

Name	Label values	Type	Measurement
Structures	1-9	String	Nominal
Amenities mean score	Yes	Numeric	Scale
Equipment mean score	Yes	Numeric	Scale
Standards precautions mean score	Yes	Numeric	Scale
Diagnostic mean score	Yes	Numeric	Scale
Essential medicines score	Yes	Numeric	Scale
General service readiness index	None	Numeric	Scale

Data Analysis Plan

In this study, the SPSS served to analyze the data. The study, therefore, computed the Pearson correlation test and the bivariate regression (linear regression). The linear

regression will demonstrate the ANOVA test, which will determine the statistical significance of the hypotheses. Analysis of variance (ANOVA) consists of an inferential statistics technique that involves a statistical test for the significance of differences between mean scores of at least two groups across one or more than one variable. ANOVA can be, therefore, used to test for statistical significance using categorical independent variables in conjunction with a continuous dependent variable (Wagner, 2017). Similarly, the study operated the Pearson correlation with 2-tailed to establish the strength of the relationship between variables.

The study equally used Microsoft Excel tables from SARA to enumerate the indicators of each independent variable obtained from their graphics in Microsoft Excel.

Research Questions and Hypothesis

RQ1 Quantitative: What is the association, if any, between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*01: Based on the findings, there is no significant statistical association between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*01: $p = 0$

*H*a1: Based on the findings, there is a significant statistical association between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*a1: $p \neq 0$

RQ2 Quantitative: What is the association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*02: Based on the finding, there is no significant statistical association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*02: $p = 0$

*H*a2: Based on the findings, there is a significant statistical association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*a2: $p \neq 0$

RQ3 Quantitative: What is the association, if any, between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*03: Based on the findings, there is no significant statistical association between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*03: $p = 0$

*H*a3: Based on the findings, there is a significant statistical association between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*a3: $p \neq 0$

RQ4 Quantitative: What is the association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*04: Considering the findings, there is no significant statistical association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*04: $p = 0$

*H*a4: Based on the findings, there is a significant statistical association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*a4: $p \neq 0$

RQ5 Quantitative: What is the association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017?

*H*05: Considering the findings, there is no significant statistical association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea for 2017. *H*05: $p = 0$

*H*a5: Based on the findings, there is a significant statistical association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017. *H*a5: $p \neq 0$

Interpretation of Results

Validity of the Study Framework

The validity of this study should demonstrate the existence of the relationship between variables. Therefore, the results confirmed the relationship between the five (5) predictors and the dependent variable. P-values for ANOVA obtained from computing the bivariate regression are all $p < 0.05$ threshold.

The internal validity of the study consisted of the presence of the relationship between the independent and dependent variables.

This study used the Donabedian model to measure the quality of health care by evaluating the hospital's performance in Guinea. For the study, the structure consists of the amenities and the infrastructure. Standard precautions, diagnostics, and the availability of essential medicines consist of the process. Finally, the amelioration of the hospitals' performance index is the outcome of this study.

Also, the study framework remains valid because several credible institutions used the Donabedian model to measure the quality of their health care. For example, in 2017, the Royal College of Surgeons of England published a professional guide to good practice on using data to improve quality in surgery. Hence, They used an adaptation of the Donabedian model, which broke down the measurement of healthcare quality into three broad categories: outcomes (the results); process (how healthcare is delivered); and structure (the setting in which healthcare is delivered) (Cullen, West, & Grant, 2018).

Threats to Validity

The validity of this study could be at risk by the occurrence of different threats. It exists external and internal threats. In the practical case of this study, the internal threats consist of inappropriate behaviors of the healthcare workers, such as non-compliance with the standard precautions, which could contribute to the occurrence of hospital-acquired infections. The laboratory technician who fails to execute the laboratory tests appropriately jeopardizes the patients as it is frequently observed.

All of those mentioned behaviors could negatively influence the hospital general readiness index in Guinea. Accordingly, their actions could negatively impact the quality of health care provided in the hospital of the Republic of Guinea. That behavior could, therefore, be a threat to internal validity. Concerning the external threats, for instance, the occurrence of epidemic diseases like Ebola and COVID-19 with a lack of preparedness in Guinea consists of external threats of validity. SARA survey is a tool that the WHO developed. The WHO validated data obtained from the survey.

Also, for this study, less statistical power to demonstrate the relationship between variables could be a threat to validity if the sample was small.

Ethical Concepts of the Study

The current study meets all the standards of Walden Doctoral Healthcare Administration Research. The chair, the chair member, and the Institutional Review Board (IRB) received the SARA report link. That chartbook is in Microsoft Excel available on-demand at the Strategic and Development Bureau of the MOH. The National Institute of Statistics of Guinea conducted the survey. It consisted of the database used to perform the present study.

The topic is original. This study was entirely personal, from the selection of the topic to the development of the subject. The study benefited the contribution and guidance of my chair and the second committee member. All the affirmations in this study are evidence-based. The Walden Institutional Review Board (IRB), after the ethical evaluation, found that the data remained ethically reliable for utilization. Therefore, it confirmed that this capstone study meets Walden University's ethical standards. IRB approval number was 08-25-20-0947876.

Summary

This section reviewed the data analysis plan, the research questions, and hypotheses. It discussed the ethical consideration of the study. Likewise, the section described the research methodology, the source, and the obtaining of the data sets. It finally explained the validity of the data sets.

Section 3: Presentation of the Results and Findings

Introduction

Measuring hospital performance, according to standards, is one of the perspectives that can guide managers to improve the quality of care (Karemere, Mukwege, Molima, & Makali, 2020). Hospital structure is part of a health system, and, as such, it constitutes a system of care (Karemere, Mukwege, Molima, & Makali, 2020). The provision of healthcare services is dependent on the effective and efficient functioning of various components of a healthcare system. It is, therefore, essential to evaluate the functioning of these various components. The examination of health systems performance in most countries is usually based on the analysis of system components that deliver care (Babalola & Moodley, 2020).

The objective of this study was to evaluate the hospitals general service readiness index for improving their performance with respect to specific, selected, hospital indicators in Guinea. The dependent variable for the study was the general service readiness index. To answer RQ1 Quantitative, the study had to determine the correlation between the basic amenities mean score and the general service readiness index for the Guinea hospitals in 2017. Accordingly, the research had to demonstrate the statistical significance of the association. To answer RQ2, the study needed to establish the correlation, if there was one, between the basic equipment mean score and the general service readiness index for the Guinea hospitals in 2017. Also, the study had to determine the statistical significance of the correlation by running the ANOVA test. To answer RQ3, the study had to determine the association between the standard precautions mean

score and the general service readiness index for the Guinea hospitals in 2017 and, therefore, to establish the statistical significance of the relationship between them. To answer RQ4, the research had to determine the relationship, and the statistical significance between the diagnostics mean score and the general service readiness index for the Guinea hospitals in 2017. To answer RQ5, the study had to demonstrate the correlation and the statistical significance, if any, between the essential medicines mean score and the general service readiness index for the Guinea hospitals in 2017. The acceptance or rejection of the null hypotheses for each research question depended on the statistical significance of the correlation between each independent variable and the dependent variable. The p-value should, therefore, be inferior to p-value ($p < 0.05$).

Each result was represented by a graph for ease of interpretation. The assessment of the quality of health care consists of an extensive domain. Therefore, this study concentrated only on the selected metrics (quality indicators as independent variables in this study) for evaluating the quality.

Data Collection of the Secondary Data Set

The quantitative secondary data set proposed to be used in the present study was obtained from the Strategic and Development Bureau of the MOH. The National Institute of Statistics of Guinea has conducted the SARA survey.

Time Frame for Data Collection

This study used secondary data from the SARA survey of 2017. The realization of the SARA survey happened in seven (7) phases. All the processes of the SARA survey lasted for about six (6) months (MOH, 2018. Survey: SARA-DQR-QoC, 2017. Report).

For the study, the secondary data variable of RQ1 discussed the basic amenities mean score. The secondary data variable of RQ2 discussed the basic equipment mean score. The secondary data variable of RQ3 discussed the basic standard precautions mean score. The secondary data variable of RQ4 discussed the basic diagnostics mean score. Finally, the secondary data variable of RQ5 was the basic essential medicines mean score. The secondary data for the predicted variable consisted of the general service readiness index for the hospitals in Guinea for 2017.

Baseline Descriptive and Demographic Characteristics of the Sample

This study, in the literature review, described the infrastructure, the equipment, infection prevention, and control focused on the standard precautions. The sample concerned all the healthcare structures of the regions of the Republic of Guinea. The selected healthcare structures representing the sample for this study were: public health facilities, private health settings, urban health centers, rural health centers, national hospitals, regional hospitals and polyclinics, district hospitals, municipality medical centers, and clinics; ameliorated health centers, and primary care health centers; and health posts.

Determination of the Basic Indicators of Quality of Each Independent Variable

Basic Amenities Indicators

The indicators of quality for the basic amenities include but are not limited to the private examination room, the improved water source, a source of energy, and emergency transportation. Among all the selected facilities, there is only 1% of them (health care facilities) that have all the elements (MOH, 2018. SARA, 2017. Graph Basic Amenities).

Basic Equipment Indicators

The indicators of quality of equipment contain the thermometer, the stethoscope, the blood pressure cuff, the scales, the light source. All of that basic equipment could contribute to ameliorating the quality of health care provided in a developing country like the Republic of Guinea. Nevertheless, only 12% of the facilities have all the listed elements (MOH, 2018. SARA, 2017. Graph Basic Equipment).

Basic Standard Precautions Indicators

The respect of the standard precautions for health care quality improvement remains essential for the healthcare settings in Guinea. Magill, O'Leary, Janelle, Thompson, et al. (2018) demonstrated that the prevalence of healthcare-associated infections was lower in 2015 than in 2011. Their study highlighted that to continue to make progress in the prevention of such infections, prevention strategies against C. difficile infection and pneumonia should be augmented. Healthcare workers' compliance with hand hygiene programs remains a challenge.

For this study, some quality indicators for the standard precautions are being compliant with having and appropriately using the latex gloves, single-use syringes, correctly eliminating infectious wastes, and properly executing the instructions concerning the infection prevention and control management. Of all the facilities in the study, only 13% were compliant with the basic standard precautions (MOH, 2018. SARA, 2017. Graph Basic Standard Precautions).

Basic Diagnostics Indicators

For the basic diagnostics, some of the indicators of quality of the healthcare structures in Guinea include the malaria diagnostic capability, the pregnancy urinary test, having the HIV diagnostic capability test, syphilis rapid diagnostic test, and the blood sugar test. But, only 7% of facilities had all the elements in 2017 (MOH, 2018. SARA, 2017. Graph Basic Diagnostics).

Basic Essential Medicines Indicators

For the essential medicines, twenty-five (25) were selected. Among those medicines, there were Ampicillin injection, Oxytocin injection, Metformin tablets, Omeprazole tablets, Amoxicillin capsules, Insulin injection, Ceftriaxone injection, and Beta-blockers. None (0%) of facilities have all the elements (MOH, 2018. SARA, 2017. Graph Basic Essential Medicines). This percentage confirmed the operational health problem in Guinea, associated with the lack of the basic essential medicines.

Each independent variable was compared to the hospitals general service readiness index to determine the relationship between them. The healthcare structures selected were public health facilities, private health settings, urban health centers, rural health centers, national hospitals, regional hospitals and polyclinics, district hospitals, municipality medical centers, and clinics; ameliorated health centers, and primary care health centers; and health posts.

Results

The selected data computed using SPSS. The study operated the bivariate regression refers to the linear regression to establish the statistical significance of the test.

The test aimed at demonstrating the association between the independent and dependent variables, as the research questions and hypotheses indicated. Therefore, the study used the scores of the structures based on the selected metrics displayed in the table below.

Table 6

Scores of the Structures Based on the Selected Metrics

Structures	Amenities scores	Equipment scores	Standard precautions score	Diagnostic score	Essential medicine score	General service readiness index
Public	0.352	0.606	0.701	0.289	0.138	0.417
Private	0.454	0.757	0.778	0.515	0.129	0.527
Urban	0.484	0.743	0.789	0.518	0.168	0.540
Rural	0.329	0.601	0.690	0.270	0.119	0.402
NH	0.929	0.667	0.833	0.429	0.229	0.617
RH-polyclinics	0.654	0.885	0.884	0.851	0.369	0.729
DH-MMC-clinics	0.513	0.766	0.811	0.558	0.154	0.560
AHC-PCHC	0.542	0.770	0.811	0.485	0.240	0.569
Health posts	0.274	0.564	0.662	0.242	0.074	0.363

Note. From "SARA survey chartbook 2017" by Strategic and Development Bureau 2018, *MOH of the Republic of Guinea*, excel sheet. In the public domain.

Descriptive statistics that appropriately characterize the sample

Descriptive statistics such as mean and standard deviation for each variable were computed in this study. Nevertheless, the mean and standard deviation were not taken into account for interpreting the results of the study. The study, therefore, interpreted the results of the Pearson correlation, which demonstrated the strength of the relationship

between the selected variables and linear regression, determining the significant statistical association between the independent variables and the dependent variable.

Evaluation of the Statistical Assumptions as Appropriate to the Study

The study did not use non-parametric statistics such as the chi-square test to compute the data. Instead, it used parametric statistics (linear regression and Pearson correlation) to analyze the data of the study. Chi-Square computes nominal or ordinal variables and does not necessitate a normal distribution in data.

Statistical Analysis Findings, Organized by Research Questions and Hypotheses

Pearson correlation and linear regression **(*bivariate regression).*** SPSS served to analyze the data of this study. The study, therefore, computed the linear regression or the bivariate regression to demonstrate the ANOVA test, which determines the statistical significance of the hypotheses. Analysis of variance (ANOVA) consists of an inferential statistics technique that involves a statistical test for the statistical significance of differences between mean scores of at least two groups across one or more than one variable. ANOVA can be, therefore, used to test for statistical significance using categorical independent variables in conjunction with a continuous dependent variable (Wagner, 2017). Similarly, the study operated the Pearson correlation with 2-tailed to establish the strength of the relationship between variables.

Table 7

Mean Variables Scores – Pearson correlation

		Basic amenities mean score	Basic equipment mean score	Standard precautions mean score	Diagnostics mean score	Essential medicines mean score	General service readiness index
Basic amenities mean score	Pearson correlation	1	.462	.809**	.512	.685*	.802**
	Sig. (2-tailed)		.211	.008	.159	.042	.009
	N	9	9	9	9	9	9
Basic equipment mean score	Pearson correlation	.462	1	.892**	.969**	.776*	.887**
	Sig. (2-tailed)	.211		.001	.000	.014	.001
	N	9	9	9	9	9	9
Standard precautions mean score	Pearson correlation	.809**	.892**	1	.897**	.860**	.991**
	Sig. (2-tailed)	.008	.001		.001	.003	.000
	N	9	9	9	9	9	9
Diagnostics mean score	Pearson correlation	.512	.969**	.897**	1	.828**	.918**
	Sig. (2-tailed)	.159	.000	.001		.006	.000
	N	9	9	9	9	9	9
Essential medicines mean score	Pearson correlation	.685*	.776*	.860**	.828**	1	.908**
	Sig. (2-tailed)	.042	.014	.003	.006		.001
	N	9	9	9	9	9	9
General service readiness index	Pearson correlation	.802**	.887**	.991**	.918**	.908**	1
	Sig. (2-tailed)	.009	.001	.000	.000	.001	
	N	9	9	9	9	9	9

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

In analyzing Table 7, the Pearson correlation's 0.802 value demonstrates a high positive correlation between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017. Similarly, the Pearson correlation's 0.887 value determines a high positive correlation between the basic equipment mean

score and the dependent variable. For the basic standard precautions, the Pearson correlation's 0.991 value establishes a high positive correlation between this predictor and the predicted variable. Equally, the 0.918 value of the Pearson correlation determines a high positive correlation between the basic diagnostics mean score and the predicted variable. Finally, for the basic essential medicines mean score, 0.908 value of the Pearson correlation test proves a high positive correlation between this independent variable and the general service readiness index for the hospitals in Guinea in 2017.

Likewise, the table demonstrates the statistical significance between the independent variables and the general service readiness index for the hospitals in Guinea in 2017. When parsing this Pearson correlation table, it becomes evident that all the selected independent variables for this study could contribute to improving the performance of the hospitals of the Republic of Guinea.

Therefore, they consist of evidence of the elements that be appraised for ameliorating the quality of health care provided in a developing country like the Republic of Guinea. The results displayed in this Pearson correlation table will be confirmed in the model summary and ANOVA for each variable when computing the bivariate regression or the simple linear regression.

Table 8

Mean Amenities Score – Bivariate Regression – Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802[a]	.643	.592	.073694

a. Predictors: (Constant), Basic amenities mean score

In the model summary, the Pearson correlation (R) = 0.802 demonstrates a positive correlation between the predictor and the dependent variable. The result of R in the model summary confirms that of the Pearson correlation test in Table 7. R square = 0.643 determines that 64% of the general service readiness index could be explained or predicted from the basic amenities mean score. There is then a relationship between getting the basic amenities and the enhancement of the quality of health care provided.

Table 9

Mean Amenities Score – Bivariate Regression – ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.068	1	.068	12.593	.009[b]
	Residual	.038	7	.005		
	Total	.106	8			

a. Dependent Variable: General service readiness index
b. Predictors: (Constant), Basic amenities mean score

In the ANOVA test above, $p = 0.009$, which is below the $p = 0.05$ threshold. The test is then statistically highly significant. Therefore, that result justifies the rejection of the null hypothesis (*H*0). Based on these present findings, there is a significant statistical association between the basic amenities score and the general service readiness index.

Table 10

Mean Equipment Score - Bivariate Regression – Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887a	.787	.757	.056842

a. Predictors: (Constant), Basic equipment mean score

In the above model summary, R = 0.887 demonstrates a positive correlation between the predictor basic equipment mean score and the dependent variable. R square = 0.787 determines that 78% of the general service readiness index is predicted from the basic equipment mean score. There is consequently a relationship between possessing the basic equipment and the amelioration of the quality of health care provided.

Table 11

Mean Equipment Score - Bivariate Regression – ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.084	1	.084	25.933	.001[b]
	Residual	.023	7	.003		
	Total	.106	8			

a. Dependent Variable: General service readiness index
b. Predictors: (Constant), Basic equipment mean score

The table above shows the ANOVA test, which is demonstrating, $p = 0.001$, that is inferior to the conventional $p = 0.05$. Then, the test is statistically highly significant. Hence, the result supports the rejection of the null hypothesis ($H0$). Based on the current findings, there is a significant statistical association between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017.

Table 12

Mean Standard Precautions Score - Bivariate Regression - Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.991[a]	.981	.978	.016919

a. Predictors: (Constant), Standard precautions mean score

In the model summary, R = 0.991 establishes a robust positive correlation between the standard precautions mean score and the dependent variable. The result of R, therefore, confirms that of the Pearson correlation test in Table 7. R square = 0.981 illustrates that 98% of the general service readiness index is predicted from the basic equipment mean score. There is, consequently, a strong positive relationship between executing the basic standard precautions in the hospitals and the amelioration of the quality of health care provided. Then, the basic standard precautions could positively contribute to enhancing the performance of the hospitals of the Republic of Guinea.

Table 13

Mean Standard Precautions Score - Bivariate Regression - ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.104	1	.104	288.081	.000[b]
	Residual	.003	7	.000		
	Total	.106	8			

a. Dependent Variable: General service readiness index
b. Predictors: (Constant), Standard precautions mean score

In the ANOVA test for the table above, $p = 0.000$ is less than the $p = 0.05$ threshold. ANOVA demonstrates, therefore, that the test is statistically very highly significant. Hence, the result necessitates the rejection of the null hypothesis ($H0$). Based on the findings, there is a significant statistical association between the standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017. The standard precautions, like the amenities and the equipment, could contribute to improving the health care quality in Guinea.

Table 14

Mean Diagnostics Score - Bivariate Regression - Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918[a]	.842	.820	.048950

a. Predictors: (Constant), Diagnostics mean score

In the table model summary, R = 0.918 founds a strong positive correlation between the diagnostics mean score and the dependent variable. The result of R, therefore, confirms the results of the Pearson correlation test in Table 7. R square = 0.842 signifies that 84% of the general service readiness index is predicted from the diagnostics mean score. There is, therefore, a strong positive relationship between performing the basic diagnostics in the hospitals and the enhancement of the quality of health care provided. Then, the basic diagnostics could positively contribute to enhancing the performance of the Republic of Guinea hospitals.

Table 15

Mean Diagnostics Score - Bivariate Regression - ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.090	1	.090	37.409	.000[b]
	Residual	.017	7	.002		
	Total	.106	8			

a. Dependent Variable: General service readiness index
b. Predictors: (Constant), Diagnostics mean score

In ANOVA, $p = 0.000$, this value is inferior to $p = 0.05$. Then, the test is statistically highly significant. Consequently, the null hypothesis ($H0$) is rejected. Based

on the results, there is a significant statistical association between the diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017.

Table 16

Essential Medicines Score - Bivariate Regression - Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.908[a]	.824	.799	.051732

a. Predictors: (Constant), Essential medicines mean score

In the above table, R = 0.908 demonstrates a positive correlation between the essential medicines mean score and the general service readiness index. The result of R, therefore, confirms the results of the Pearson correlation test in Table 7. R square = 0.824 signifies that 82% of the general service readiness index is predicted from the essential medicines mean score. There is, therefore, a strong positive relationship between having in stock the essential medicines in the hospitals and the improvement of the quality of health care provided. Then, the basic essential medicines could positively contribute to enhancing the performance of the hospitals of the Republic of Guinea.

Table 17

Essential Medicines Score - Bivariate Regression - ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.088	1	.088	32.761	.001[b]
	Residual	.019	7	.003		
	Total	.106	8			

a. Dependent Variable: General service readiness index
b. Predictors: (Constant), Essential medicines mean score

In analyzing this ANOVA table, the study found $p = 0.001$. This p-value is below the $p = 0.05$ threshold. ANOVA demonstrates, therefore, that the test is statistically significant. It is, hence, justified to reject the null hypothesis ($H0$). Regarding these findings, there is a significant statistical association between the essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017. The basic essential medicines could, therefore, positively contribute to enhancing the performance of the hospitals of the Republic of Guinea.

Organization of the Statistical Assumptions

Pearson correlation: The Pearson correlation coefficient is a standardized index (R), which has its ranges values comprised between -1.0 and +1.0, where -1.0 consists of a perfect negative correlation, and +1.0 consists of a perfect positive correlation. If the value is 0, therefore, there is no correlation. The closer to -1.0 or 1.0, the stronger the relationship remains (Jones, 2016. Video. Laureate Education Producer. 2016b).

Bivariate regression: The study used a method called the ordinary least squares (OLS). In SPSS, this method refers to linear regression. Likewise, it is called a simple linear regression (Jones, 2016. Video. Laureate Education Producer. 2016b). In ANOVA, the statistical significance of the test depends on the p-value, which should be inferior to the conventional 0.05. If $p > 0.05$, therefore, the test will not be statistically significant.

For RQ1 Quantitative, 0.802 value of the Pearson correlation demonstrates a high positive correlation between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017. The effect of the basic amenities mean score on the general service readiness index for the hospitals in Guinea remains

consequently high with two stars. Also, 2. Tailed significance established that $p < 0.05$ at $p = 0.009$, which confirmed the statistical significance of the ANOVA test with $p = 0.009$. The test is then statistically highly significant. Therefore, that result justifies the rejection of the null hypothesis ($H0$).

Similarly, with RQ2 Quantitative, 0.887 value of the Pearson correlation demonstrates a high positive correlation between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017. The effect of the basic equipment mean score on the general service readiness index for the hospitals in Guinea remains high with two stars. The effect is higher than that of the basic amenities. The Pearson correlation with 2. tailed significance $p = 0.001$ and ANOVA test demonstrate that the test is statistically highly significant. Hence, the result supports the rejection of the null hypothesis ($H0$).

With RQ3 Quantitative, 0.991 value of the Pearson correlation establishes a high positive correlation between the basic standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017. The effect of the basic standard precautions mean score on the general service readiness index for the hospitals in Guinea in 2017 remains high, with likewise two stars. $P = 0.000$ with 2. tailed significance in the Pearson correlation and ANOVA test demonstrates that the test is statistically very highly significant. Hence, the result necessitates the rejection of the null hypothesis ($H0$).

For RQ4, 0.918 value of the Pearson correlation determines a high positive correlation between the basic diagnostics mean score and the general service readiness

index for the hospitals in Guinea in 2017. The effect of the basic diagnostics mean score on the general service readiness index for the hospitals in Guinea remains consequently high with two stars. The 2. Tailed significance established that $p < 0.05$ at $p = 0.000$, which confirmed the significance of the ANOVA test with $p = 0.000$. The test is then statistically highly significant. Consequently, the result validates the rejection of the null hypothesis ($H0$).

With RQ5, 0.908 value of the Pearson correlation, establish a high positive correlation between the basic essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017. The effect of the basic essential medicines mean score on the general service readiness index for the hospitals in Guinea in 2017 remains high with equally two stars. The $p = 0.001$ value with 2. tailed significance in the Pearson correlation and $p = 0.001$ in the ANOVA test demonstrates, therefore, that the test is statistically significant. Hence, the result necessitates the rejection of the null hypothesis ($H0$).

Explanation of the Statistical Analysis Findings per Graphs

The displays below in Figures 1, 2, 3, 4, and 5 explain that for the hospitals in Guinea, some scores of selected quality indicators (basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and basic essential medicines mean score) are not strongly proportional to the general service readiness index to justify a robust correlation.

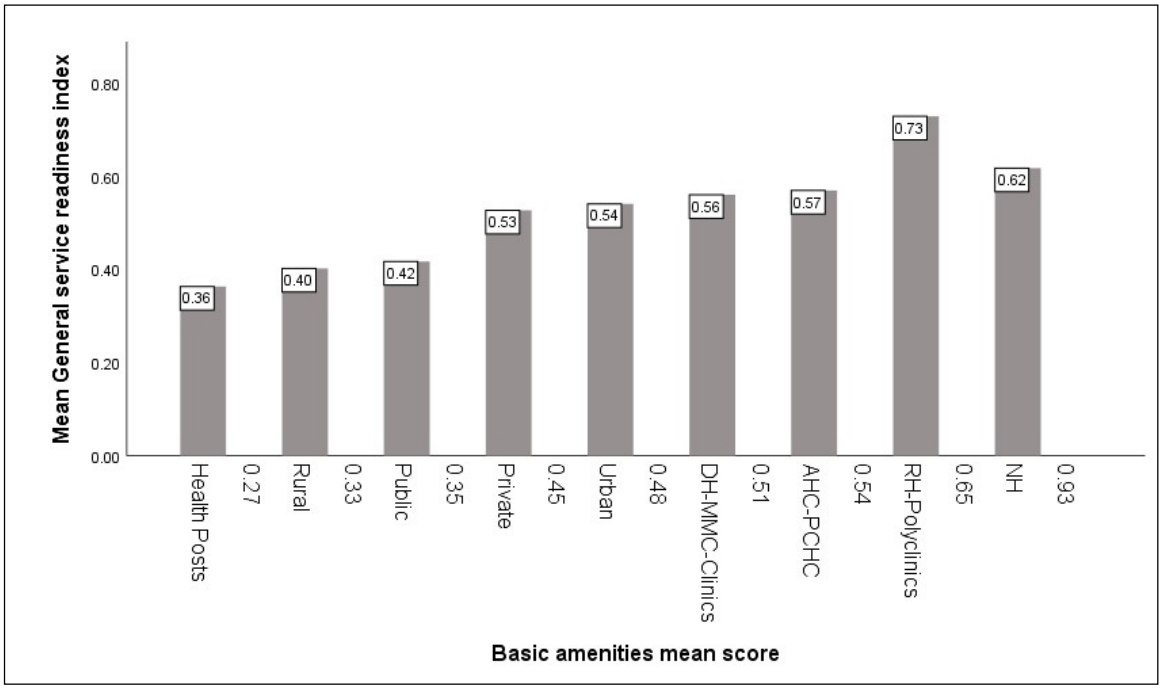

Figure 1. Mean general service readiness index by basic amenities score.

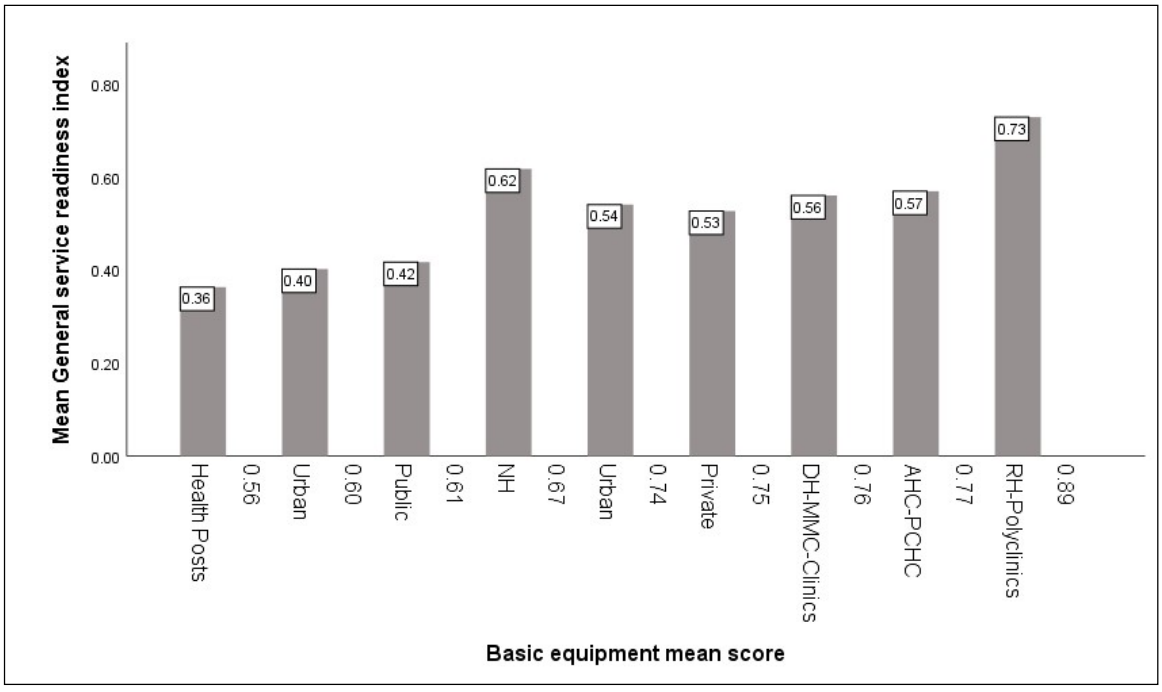

Figure 2. Mean General Service Readiness Index by Basic Equipment Score.

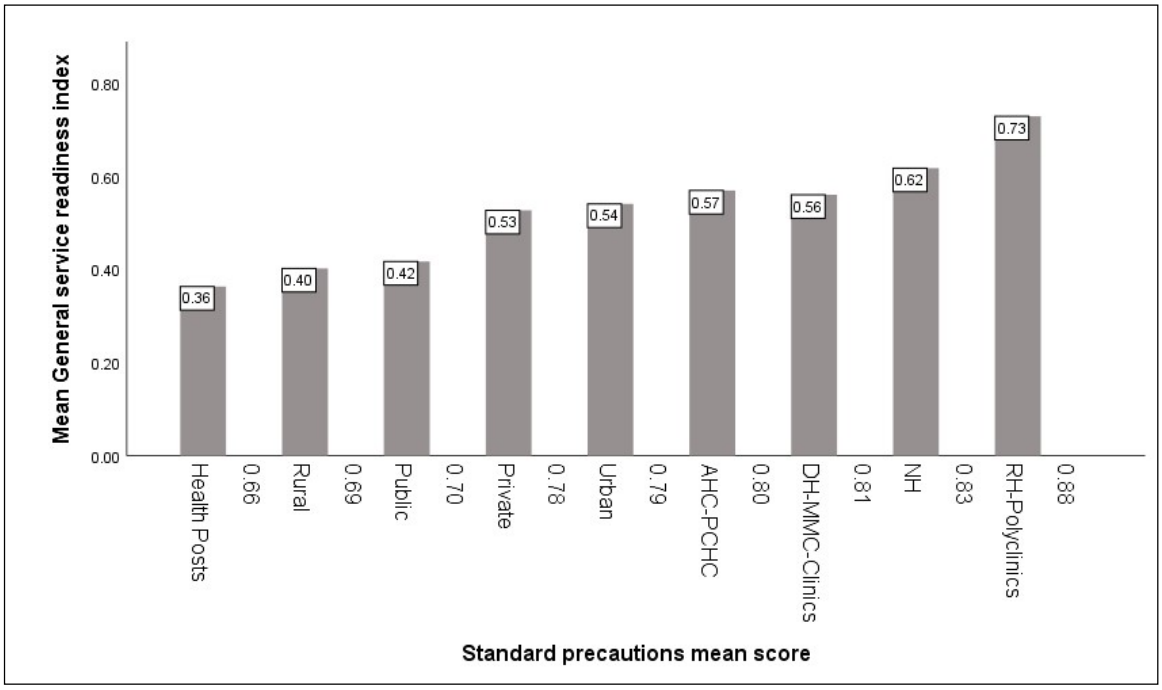

Figure 3. Mean General Service Readiness Index by Basic Standard Precautions Score.

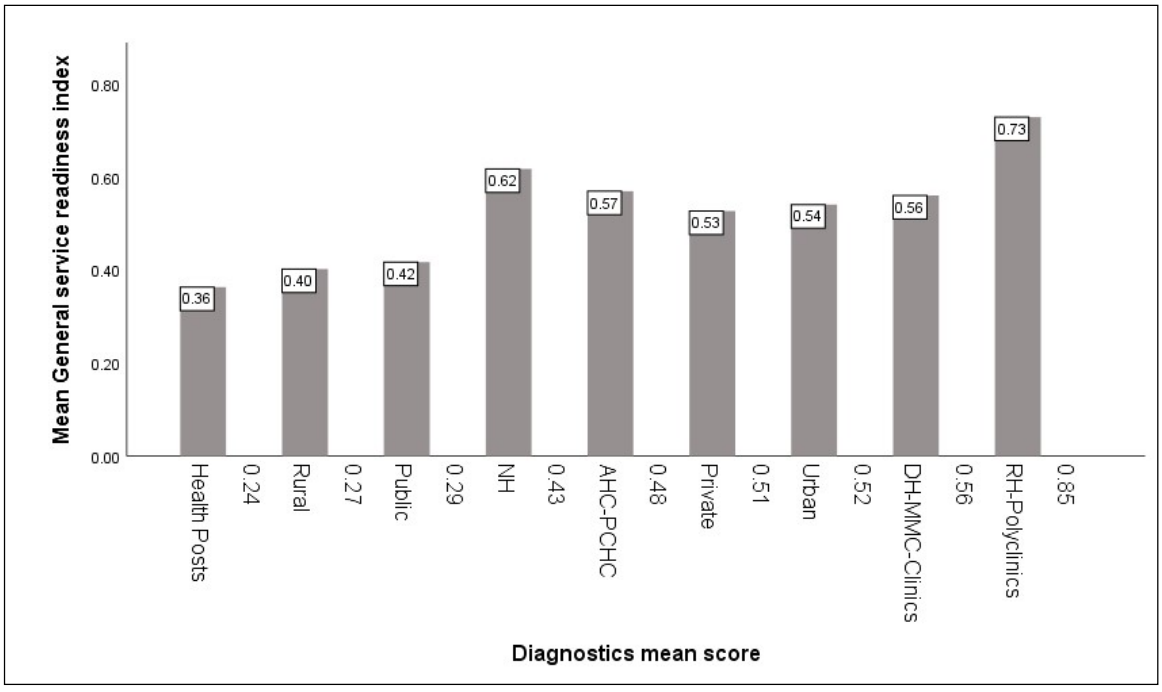

Figure 4. Mean General Service Readiness Index by Basic Diagnostics Score.

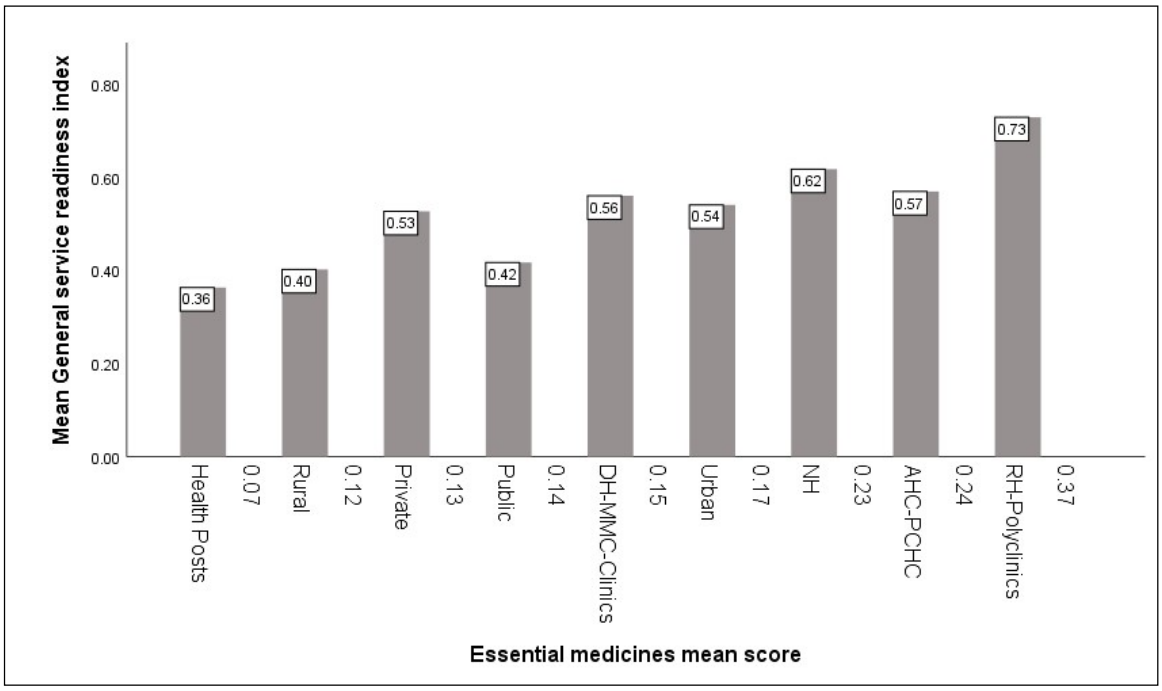

Figure 5. Mean General Service Readiness Index by Basic Essential Medicines Score.

The analysis of the bars in Figures 1, 2, 3, 4, and 5 demonstrated that:

Figure 1 showed that the basic amenities score of each structure is corresponding to a specific general service readiness index. The display evidently, demonstrated that for the hospitals in Guinea, the selected indicators of basic amenities are not strongly proportional to the general service readiness index to justify a robust correlation. The national hospitals have a basic amenities score of 0.93, while their general service readiness index is 0.62. The regional hospitals have a 0.65 amenities score, and their general service readiness index remains elevated.

Figure 2 demonstrated that for the hospital in Guinea, the selected basic equipment indicators are not highly proportional to the general service readiness index to justify a robust correlation. For example, the scores 0.667 of NH with 0.617 general

service readiness index and 0.757 of private hospitals with 0.527 general service readiness index demonstrated that the high basic equipment score for the private hospitals is not proportional to their corresponding general service readiness index.

The bars in Figure 3 determined that the basic standard precautions of each structure are corresponding to a specific general service readiness index. However, the display evidently demonstrated that the selected indicators of basic standard precautions are not highly proportional to the hospital's general service readiness index in Guinea. This display sparks questions concerning the non-compliance of some hospitals to standard precautions.

In Figure 4, the score of 0.757 of private hospitals has a 0.527 general service readiness index. 0.743 score of urban hospitals has a 0.540 general service readiness index. And finally, the 0.885 score of RH-Polyclinics matches to 0.729 general service readiness index. The display evidently demonstrated that the selected basic diagnostics indicators are proportional to the general service readiness index for the hospital in Guinea.

In Figure 5, the display demonstrated that the selected indicators of basic essential medicines for the Guinea hospital are not highly proportional to the general service readiness index to justify then, a robust association. Therefore, some hospitals are non-compliant with possessing sufficient stocks of essential medicines to ensure the quality of health care requested.

Even though the graph’s tendency confirmed the existence of a correlation between the selected independent variables of the study and the dependent variable,

which is the general service readiness index, the correlations are not strong. Therefore, the results confirm the reality of multiple operational problems in the healthcare system of the Republic of Guinea that necessitate the appropriate resolutions.

Summary

The study did not use non-parametric statistics such as the Chi-Square test to compute the data. Instead, it used parametric statistics (Pearson correlation and Linear Regression) to analyze the data of the study. SARA served as secondary data that the report is freely available for download as a PDF file from the following link provided.

All public and private health facilities were eligible ($N = 2263$). However, a sample of 417 health structures was drawn to conduct data quality review (DQR) and quality of care (QoC) surveys. Furthermore, at each health structure level, at the time of the survey, a maximum of 10 patients were systematically drawn to conduct the satisfaction survey.

RQ1 Quantitative, the value of the Pearson correlation, demonstrates a high positive correlation between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017. The ANOVA test is then statistically highly significant. Therefore, the null hypothesis ($H0$) is rejected.

RQ2, the Pearson correlation, demonstrates a high positive correlation between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017. The ANOVA test is proving that the test is statistically highly significant. Hence, the null hypothesis ($H0$) is rejected.

RQ3, 0.991 value of the Pearson correlation, establishes a high positive correlation between the basic standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017. The effect of the basic standard precautions mean score on the general service readiness index for the hospitals in Guinea in 2017 remains high. ANOVA demonstrates that the test is statistically very highly significant. Hence, the null hypothesis (*H*0) is rejected.

RQ4 Quantitative, 0.918 value of the Pearson correlation, determines a high positive correlation between the basic diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA with $p = 0.000$ shows that the test is then statistically highly significant. Consequently, the null hypothesis (*H*0) is rejected.

RQ5 Quantitative, the Pearson correlation, establishes a high positive correlation between the basic essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA test demonstrates that the test is statistically significant. Hence, the null hypothesis (*H*0) is rejected.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The purpose of this quantitative study was to identify whether there was a significant statistical association between Guinea hospital performance metrics (selected indicators of quality in this study) and the general service readiness index for the hospitals in Guinea in 2017 using secondary quantitative data from 2017. This study contributed to the literature by showing the significance of the association between the selected independent variables and the hospitals general service readiness index. It also enhanced the performance of the hospitals and thus helped to ameliorate the quality of health care provided in the hospitals.

The results of this study could help Guinean health professionals and researchers to help patients and their families to access health care in Guinea with efficient hospitals that are compliant with the MOH's guidelines.

Interpretation of the Findings

The results of this study confirm the relationship between the five predictors and the dependent variable. P-values for ANOVA obtained from computing the bivariate regression are all within the $p < 0.05$ threshold.

For RQ1 Quantitative, 0.802 value of the Pearson correlation demonstrates a high positive correlation between the basic amenities mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA test with $p = 0.009$ determined that the test was statistically highly significant. Therefore, the null hypothesis ($H0$) was rejected.

Similarly, with RQ2 Quantitative, 0.887 value of the Pearson correlation demonstrates a high positive correlation between the basic equipment mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA test with p = 0.001 demonstrating, therefore, that the test is statistically highly significant.

With RQ3 Quantitative, 0.991 value of the Pearson correlation, establishes a high positive correlation between the basic standard precautions mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA test with p = 0.000 confirming, therefore, that the test is statistically very highly significant.

For RQ4 Quantitative, 0.918 value of the Pearson correlation determines a high positive correlation between the basic diagnostics mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA test with p = 0.000 is then statistically highly significant.

With RQ5, 0.908 value of the Pearson correlation establishes a high positive correlation between the basic essential medicines mean score and the general service readiness index for the hospitals in Guinea in 2017. ANOVA test with p = 0.001 demonstrates, therefore, that the test is statistically significant. Hence, the null hypothesis ($H0$) was rejected.

Analysis and Interpretation of the Findings in the Context of the Theoretical or Conceptual Framework

The theoretical framework of this study consisted of the epistemological theory based on the Donabedian approach. The Donabedian approach remains concentrated on

the amelioration of the quality based on the following three fundamental elements: structure, process, and outcome.

For this study, the structure consists of the amenities and the infrastructure. Standard precautions, diagnostics, and the availability of essential medicines consist of the process. And the amelioration of the hospitals' performance index is the outcome as represented in the table below:

Table 18

Donabedian Model of Quality for this Study

Structure	Process	Outcome
Amenities Infrastructure	Standard precautions Diagnostics Availability Essential Medicines	Hospitals' performance index

The Donabedian approach is related to the determination of the impact of basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score as the quality metrics, and essential medicines mean score on the general service readiness index for the hospitals in Guinea in 2017. The theory was used to study systemic data (SARA survey, 2017) from the MOH that the National Institute of Statistics of Guinea has conducted. Donabedian then covered the entire field of quality measurement as it was understood at the time. To this day, his subheadings would compose an adequate framework for a course syllabus on measuring the performance of health care (Berwick & Fox, 2016).

In the study, based on $p < 0.05$ for both the Pearson correlation and bivariate regression test results, there is a relationship between variables that consist of structure,

process, and outcome. When healthcare professionals in Guinea work on their behavior change, that could improve the indicators of each predictor variable, which could accordingly and positively influence the general service readiness index of the hospital in Guinea consisting of the predicted variable. Consequently, they could ameliorate the quality of health care they are providing. The Donabedian approach will allow healthcare administrators to promote the positive social change that could enhance the employers' productivity, and then, it will allow improving the hospitals' performance. The Donabedian approach will finally let the healthcare worker embrace a positive attitude, which could enhance the quality of health care provided and, consequently, that could improve their hospital general service readiness index. This framework remains appropriate for this study.

Limitations of the Study

This study included using a quantitative correlational research design with quantitative secondary data sets. It then used statistical techniques such as bivariate regression and the Pearson correlation of SPSS software. Pearson r correlation is a parametric method.

Another limitation concerned the instrument used; indeed, the study used the census as the type of used survey. The questionnaires were, therefore, administrated by direct interviews and exploration of patients' files. The survey applied the following three types of questionnaires: SARA questionnaires, Data Quality Review (DQR) questionnaires, and finally, the Quality of Care (QoC) questionnaires. The survey could have some disadvantages because some people could provide false answers to the survey

questionnaires. Surveys are one of the most frequently employed study designs in healthcare epidemiology research. Nevertheless, they could have many pitfalls in surveys that are avoidable (Safdar, Abbo, Knobloch, & Seo, 2016).

Recommendations

This study determined a statistical significance between independent and dependent variables. Nevertheless, despite the existence of that statistical significance between the selected variables and the hospitals' general service readiness index in Guinea, several hospitals are lacking performance. Therefore, the recommendations regarding the results of this study focus on three major components.

The first component consists of translating the theoretical knowledge included in the official documents of the MOH of the Republic of Guinea into practice. That practice must involve all the professionals of the healthcare system of Guinea. This involvement should be concentrated on the respect of the written directives of the National Direction of the Hospital Settings and Sanitary Hygiene. Failing to respect the instructions containing in the official documents by putting the acquired theoretical knowledge into practice should have corresponding aftermaths from a verbal warning to the termination.

The following recommendation concerns the amelioration of the governance and the leadership of the healthcare system in Guinea. Fundamentally, all the general managers of all hospitals should be either healthcare managers or healthcare administrators. That approach could help for a significant enhancement of the hospitals' performance in Guinea. The lack of trained healthcare managers and administrators should trigger the appropriate training of the majority of the actual healthcare managers

in Guinea. The right education of healthcare professionals, principally that of managers and administrators, will contribute to rationally using the available resources.

The last recommendation consists of encouraging such a study based on evidence to statistically find out the relationship between other quality indicators as predictor variables and the hospitals' general service readiness index in Guinea as a predicted variable. The MOH of the Republic of Guinea, to provide a subsidy to the hospitals, should practically implement the value-based funding.

Implications for Professional Practice and Social Change

This study focuses on evaluating some fundamental indicators of the healthcare system quality of the Republic of Guinea. The development of the amenities and equipment, the proper respect of the standard precautions, the right diagnoses with the appropriate laboratory equipment in the association with the adequate supply of essential medicines should help the professional practice to improve the care they provide.

Professional Practice

Equipment. The technical tray of hospitals is still very underdeveloped compared to the standards and missions assigned to hospitals in the provision of care (National Direction of the Hospital Settings and Sanitary Hygiene, 2020, p. 34). This study contributes to providing the statistical significance of the equipment (technical tray of hospitals) in improving the hospitals' performance. Hence, healthcare professionals should conveniently use available procedural resources.

Infrastructure. There have been several efforts in the hospitals' infrastructure in Guinea. Despite these efforts, many hospitals do not meet the standards set by the MOH

(National Direction of the Hospital Settings and Sanitary Hygiene, 2020, p. 35). This study informs the healthcare authorities on the existence of the statistical significance of the infrastructure in enhancing the hospitals' performance. Hence, healthcare professionals should conveniently use the available procedural resources to improve the health care they are providing in the hospitals in Guinea.

Table 19

Compliance of the Hospitals Regarding the Standards of the Infrastructure

Categories	Compliant	Non-compliant	Total
National hospitals	1	2	3
Regional hospitals	5	2	7
District hospitals	18	8	26
Municipalities medical centers	2	5	7
Total	26	17	43

Note. From "2019 Report of the Public Hospital Management", National Direction of the Hospital Settings and Sanitary Hygiene, 2020, *MOH of the Republic of Guinea*, p. 35. In the public domain.

Standard precautions. Since there are no statistics on hospital-acquired infections in Guinea, it is, consequently, estimated that they account for 10 to 25% of admissions to public-sector hospitals (National Direction of the Hospital Settings and Hospital Hygiene, 2016, p. 1). Also, the degree of adherence to hand hygiene protocols by health care providers is inappropriate since its rates of only 20 - 50% remain unacceptable (National Direction of the Hospital Settings and Hospital Hygiene, 2016, p. 11).

Consequently, this study informs the healthcare authorities on the existence of a strong positive relationship between executing the hospitals' basic standard precautions and the general service readiness index for the hospitals in Guinea for 2017 (Pearson correlation R = 0.991). Likewise, it informs them of the presence of a significant statistical association between the standard precautions mean score and the general service readiness index for the hospitals in Guinea for 2017 (ANOVA $p = 0.000$). The study will allow the healthcare decision-makers of Guinea to emphasize the respect of the infection prevention and control protocols, which could improve the quality of health care provided in the hospitals.

Recommendations for Professional Practice

This study emphasizes that it is essential to consider the statistical significance between the predictors' variables and the enhancement of the hospitals' performance to improve the quality of their service. For example, healthcare administrators should participate in elaborating on the health facilities design based on specific needs. That approach could help to use the structure after the construction rationally. The Guinean authorities of healthcare must take into account the maintenance of the hospital buildings when providing the subsidy. Also, healthcare professionals should conveniently use the available technical resources, which help to improve the quality of the service they provide.

Because the results of this study showed, the relationship between the standard precautions mean score and the general service readiness index for the hospitals in Guinea for 2017 with 0.991 value of the Pearson correlation and $p = 0.000$ of ANOVA

test, therefore, healthcare professionals of the Republic of Guinea must embrace the continuous implementation of the standard precautions in the hospitals.

The professional practice in the healthcare system in Guinea must always consider three fundamental elements, which are: the accessibility of health care service, patient safety, and the amelioration of the quality of the health care provided. Accordingly, the improvement of the quality of the health care provided must always consider the three elements of the Donabedian approach that are: The Structure, the Process, and the Outcome.

Methodological, Theoretical, and Empirical Implications

Concerning the methodology, this actual study is quantitative. The study used secondary data, which is from SARA chartbook_v2.2_Guinea_2017-ENSEMBLE. For analyzing the secondary data in this quantitative study, the study used statistical techniques such as the Pearson correlation and bivariate regression of SPSS software. In the study, each independent variable was separately compared to the dependent variable. The theory aimed at finding the correlation that exists between Guinea hospital performance metrics: basic amenities mean score, basic equipment mean score, standard precautions mean score, diagnostics mean score, and essential medicine mean score, and the general service readiness index for the hospitals in Guinea in 2017 using secondary quantitative data from 2017. The empirical methodology used for this study was the SARA survey with a census type survey. The SARA chartbook secondary data was among the essential parts of the empirical research.

The empirical implication of the study consists of providing the necessary information to the healthcare authorities and other professionals on the existence of the relationship between the selected independent variables of the research and the general service readiness index for the hospitals in Guinea in 2017. That existence should allow the enhancement of the performance of the Guinean hospitals.

Positive Social Change

From this study, the positive social change will first be the rational utilization of the available resources of the hospitals (indicators of quality). Those resources contain but are not limited to the amenities, the equipment, the essential medicines, and, additionally, the financial assets. The results of this study will allow the healthcare professionals in Guinea to be compliant with the standard precautions as requested by the written directives of the MOH. The hospitals will avoid wasting their resources. Likewise, the study encourages the managers of the Guinean hospitals to promote the internal training financed by their budget. This research will positively impact Guinean healthcare researchers to extend such a study to indicators that could enhance the performance of the Guinean hospitals. Finally, it will allow the Guinean population to access the quality of health care that they deserve.

Conclusion

The MOH of the Republic of Guinea has always been committed to providing quality care to the Guinean population while ensuring patient safety and, accordingly, the entire community safety. The National Health Policy describes the Ministry's broad guidelines, and this policy is implemented in the National Health Development Plan

2015-2024. Some operational health problems exist in Guinea, which necessitates being addressed.

The objective of this study consisted of comparing the Guinea hospital performance selected metrics and whether an association or relationship exists between them and the general service readiness index for the hospitals in Guinea in 2017. It reviewed the quantitative secondary data set based on evidence and numerical data from the MOH of the Republic of Guinea, in association with the National Institute of Statistics of Guinea. The theoretical foundation of the study consists of an epistemology theory. The Donabedian approach is, therefore, the epistemological theory of this study. The results of the study are from the Pearson correlation and bivariate regression interpretation. Those provided the answers to the research questions with $p < 0.05$ demonstrating the relationship between variables. This study contributes to positive social change by providing information to healthcare organizations and policymakers to work closely with healthcare workers to respect all the instructions provided by the Guinean MOH. Therefore, the positive change will include the rational utilization of the resources in the healthcare workers' possession, their compliance with the standard precautions, the appropriate utilization of the diagnostic tests, and the right use of the essential medicines.

This study, however, will fundamentally contribute to enhancing the hospitals' performance, then, to improving the health care quality, is not a masterpiece (chef-d'oeuvre). Hence, it could be extended to other quality indicators, evaluating the hospitals' performance in Guinea. Thus, it could be continuously ameliorated. The study,

which measured hospital performance in Guinea, encouraged healthcare workers to use the available resources appropriately. Equally, it made significant recommendations that could contribute to enhancing the performance of the hospitals effectively. Finally, those recommendations could contribute to the amelioration of the quality of health care service provided, and accordingly, they will contribute to assuring patient safety.

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