

Exploring the Roles and Amenities of Cooperative Hospitals in Kerala

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ABSTRACT:

Every business entity must prioritize offering products or services of the highest quality. This commitment is essential to not only attract new customers but also to achieve their core business objectives. This principle holds true for various sectors such as banking, insurance, transportation, and healthcare. Particularly in areas like hospitals, it becomes imperative to ensure the utmost quality in services, thereby generating increased revenue through heightened customer satisfaction. In the contemporary competitive landscape, the significance of service quality cannot be overstated. It stands as a pivotal factor that determines the survival and triumph of an organization. Evaluating service quality involves a comparison between customer expectations and their actual perceived experiences. To delve into this dynamic, a comprehensive study has

been undertaken focusing on the Function and Facilities of Co-operative hospitals in Kerala. The study centers around gathering patient opinions to gauge their expectations and perceptions of the hospital services.

Keywords: co-operative hospital, information collection

1. INTRODUCTION

The rapid recovery of any patient hinges on intensive and prompt personal care, coupled with effective medical treatment. However, there are instances when such resources are not readily available within a patient's home or at a doctor's clinic. This is where the indispensability of a hospital comes into play. Hospitals stand as significant social institutions, offering substantial benefits both to society at large and to individual patients. A

hospital can be defined as a facility that boasts an abundance of technically and professionally adept individuals. These experts harness their skills and knowledge alongside cutting-edge equipment and advanced technologies. The fundamental purpose of any hospital is to extend meticulous attention and care to individuals who are injured or unwell, without any form of economic, social, or discriminatory bias based on factors like age, caste, gender, or education.

II. NATURE AND SCOPE OF A HOSPITAL

A society thrives on its human constituents, who collectively contribute to its well-being. Nonetheless, every society inevitably accommodates individuals facing ill health. Such conditions give rise to dependence, compelling those in need to seek medical care, healing, support, and shelter. The entity established to cater to the needs of the ailing is referred to as a "Hospital." The term "Hospital" originates from the Latin word "*Hospitalis*," denoting "a host." In essence, a hospital signifies an establishment designed for the temporary accommodation of the sick and injured. A hospital is an institution characterized by highly qualified and experienced personnel, along with ample infrastructure, enabling the provision of

restorative, healing, and protective services of the highest quality to all patients, regardless of demographic distinctions.

III. CO-OPERATIVE HOSPITALS IN KERALA

Kerala's developmental journey is marked by several distinctive attributes. Notably, the establishment and growth of hospitals within the co-operative sector, including the inception of institutions for modern medical education, represent a unique trajectory in the state's healthcare landscape. While co-operatives in Gujarat primarily focused on offering primary healthcare services, in Kerala, it was evident that health co-operatives could only effectively compete with private and state-run healthcare services if managed by private enterprises. Kerala saw the inauguration of India's first co-operative hospital in Thrissur in 1969. Although initial stages faced numerous challenges, subsequent governmental initiatives fostered the development of co-operative dispensaries. A scarcity of private hospitals, coupled with public hospitals struggling to accommodate available doctors, led to a dearth of medical services in many panchayats. In response, the state initiated assistance schemes, resulting in the establishment of numerous dispensaries. By 1972-73, there were nine co-operative

dispensaries, a number that quickly escalated to 59 within a year. However, many eventually became inactive, with some transforming into co-operative hospitals.

IV. FUNCTIONS OF CO-OPERATIVE HOSPITALS IN KERALA

Co-operative hospitals are operational in various districts of Kerala, albeit in smaller numbers compared to government or private counterparts. These hospitals are established with the overarching missions of:

- Providing high-quality care
- Incorporating cutting-edge treatment methodologies
- Ensuring complete patient satisfaction through facility provisions
- Cultivating strong public relations

The functions of co-operative hospitals encompass the following broad categories:

Medical Care: This entails patient management under the guidance of medical practitioners. Services encompass patient care, disease diagnosis and treatment, outpatient services, and medical facilities.

Patient Support: This pertains to ancillary services directly benefiting patients, including nurturing, nutritional assessments, therapies, pharmacy services, and laboratory facilities.

Administrative: This domain manages the hospital's policies and directives, overseeing the provision of supportive services in areas such as personnel, finance, property management, engineering, and general maintenance.

V. MEDICAL FACILITIES

Medical facilities include the essential medical services provided by every hospital organization, which are necessary. These include In-patient and Out-patient consultation services, Casualty, Operating theatres, Labour rooms, Newborn Intensive Care Unit (ICCU), and Mortuary units. An analysis of the availability of these facilities in different Co-operative hospitals in Kerala follows.

Medical Facilities	North	Central	South	Total	Chi- Square	p- value
In patient consultancy services	11 (100.0)	4 (100.0)	4 (100.0)	19 (100.0)	-	-
Outpatients Services	11 (100.0)	4 (100.0)	4 (100.0)	19 (100.0)	-	-
Casualty (Emergency services)	11 (100.0)	4 (100.0)	4 (100.0)	19 (100.0)	-	-
ICU	6 (54.5)	4 (100.0)	1 (25.0)	11 (57.9)	4.74	0.09
Operation theatre	7 (63.6)	4 (100.0)	1 (25.0)	12 (63.2)	4.84	0.08
Labour rooms	9 (81.8)	4 (100.0)	2 (50.0)	15 (78.9)	3.14	0.21
Newborn Infant Critical Care Unit	3 (27.3)	3 (75.0)	1 (25.0)	7 (36.8)	3.18	0.20
Mortuary Unit	5 (45.5)	3 (75.0)	4 (100.0)	12 (63.2)	4.06	0.13

Table:1 Medical facilities available in Co-operative hospitals based on Region

zones—North, Central, and South—offer 'In-patient consultation services'.

Inpatient Consultation

In-patient consultation is one of the main facilities offered by hospitals. It refers to medical treatment provided in a hospital that requires at least one overnight stay. Patients must stay in the hospital for a prescribed period determined by the doctor, based on the severity of the illness, and their treatment is supervised by nurses or doctors.

Interpretation: It can be observed that all selected Co-operative hospitals in the three

Outpatient Services

Outpatient care involves treatment without overnight stays. Patients can leave the hospital or clinic after completing treatment procedures. Outpatient divisions treat patients without requiring admission, allowing them to leave the hospital based on a doctor's advice after thorough treatment and prescription of medicines. Sometimes, patients are asked to revisit after a scheduled period.

Interpretation: This analysis reveals that Outpatient consultation services are operational in all hospitals studied.

Casualty

Casualty departments specialize in emergency medicine, providing acute care to patients who present without prior appointments. The casualty departments of most hospitals operate 24 hours a day, following a systematic timetable.

Interpretation: The above analysis shows that Casualty facilities are present in all Co-operative hospitals studied across the three zones.

Intensive Care Units (ICU)

Intensive Care Units (ICUs) are designed for patients with organ failure or those requiring close and constant monitoring. They are typically located near the operating theatre and equipped with modern medical equipment, qualified doctors, nursing staff, and maintained with extreme cleanliness. Availability of ICU facilities in the Co-operative hospitals selected for the study from three zones of Kerala.

It is observed that ICU facilities are available only in 54.5% of hospitals in the North zone, while they are fully available in all hospitals in the Central zone. In the South zone, ICU facilities are available in only 25% of

hospitals. It can be interpreted that ICU facilities are mostly available in the Co-operative hospitals of the Central zone. Here, the calculated chi-square value of 4.74 ($df = 2$) is lower than the table value (5.99) at the 0.05 level of significance, and the p-value is 0.09, which is higher than 0.05. Hence, it can be concluded that there is homogeneity among the three zones of Kerala regarding the availability of ICU facilities provided in Co-operative hospitals, and the null hypothesis is accepted.

Interpretation: It can be observed that the availability of ICU facilities is relatively consistent across Co-operative hospitals in all zones.

Operation Theatre

An Operating Theatre is a sterile environment where surgical procedures are performed. They are well-lit, spacious, equipped with overhead surgical lights, monitors, and screens. These rooms are equipped with essential medical equipment such as oxygen, wall suction, and operating tables. The availability of Operation Theatre facilities in the Co-operative hospitals selected for the study from three zones of Kerala is as follows:

It can be observed that in the North zone, out of 11 hospitals, 7 hospitals have operation theatres. In the Central zone, all hospitals have this facility, while in the South zone, out of 4

hospitals, only 1 hospital has such a facility. The Central zone has the highest number of Co-operative hospitals with Operation Theatre facilities compared to other zones. The calculated chi-square value in this case is 4.84 ($df = 2$) with a p-value of 0.08, which is greater than 0.05. Thus, it can be inferred that there is homogeneity among the three zones of Kerala regarding the availability of Operation Theatres in Co-operative hospitals, and the null hypothesis is accepted.

Interpretation: The availability of Operation Theatre facilities is relatively consistent across Co-operative hospitals in all zones.

Labour Rooms

The labour room is a versatile area in a hospital dedicated to handling labor and childbirth. It also takes care of the mother and child, including the initial hours of recovery. The availability of labour room facilities in the Co-operative hospitals selected for the study from three zones of Kerala is as follows:

It is evident that the majority of hospitals have this facility in the North zone, with availability in 81.8% of Co-operative hospitals. All hospitals in the Central zone have labour rooms. In the South zone, 50% of hospitals have such a facility. Among all zones, most of the Co-operative hospitals in the Central zone have labour room facilities. The analysis

indicates that there is homogeneity among the three zones of Kerala regarding the availability of labour rooms in Co-operative hospitals, as the calculated chi-square value of 3.14 ($df = 2$) is lower than the table value (5.99) at the 0.05 level of significance, and the p-value (0.21) is greater than 0.05.

Interpretation: The availability of Labour rooms is relatively consistent across Co-operative hospitals in all zones.

Newborn Intensive Care Unit (ICCU)

Newborns requiring critical medical attention are admitted to the Neonatal Intensive Care Unit (NICU), where specialized equipment and skilled healthcare personnel provide expert care. The availability of Newborn ICCU facilities in the Co-operative hospitals selected for the study from three zones of Kerala is as follows:

In the North zone, only three sample hospitals have this facility. In the Central zone, out of four hospitals, three hospitals have this facility. In the South zone, only one hospital has this facility. In summary, more Co-operative hospitals in the Central zone have ICCU facilities. The availability of Newborn ICCU facilities in Co-operative hospitals across Kerala's regions is homogenous. The calculated chi-square value of 3.18 ($df = 2$) is lower than the table value (5.99) at the 0.05

level of significance, and the p-value (0.20) is greater than 0.05. Interpretation: The availability of Newborn ICCU facilities is relatively consistent across Co-operative hospitals in all zones.

Mortuary Unit

Mortuary units handle the preservation of deceased bodies for viewing, identification, and scientific investigation. Availability of Mortuary facilities in the Co-operative hospitals is as follows:

In the North zone, 45.5% of hospitals have mortuary units, whereas in the Central zone, three out of four sample hospitals have this facility. In the South zone, all hospitals have mortuary units. Hospitals in the South zone have more mortuary units than other zones. The analysis indicates homogeneity among the three zones of Kerala regarding the availability of mortuary units in Co-operative hospitals. The calculated chi-square value of 4.06 (df = 2) is lower than the table value (5.99) at the 0.05 level of significance, and the p-value (0.13) is greater than 0.05.

Interpretation: The availability of Mortuary units is relatively consistent across Co-operative hospitals in all zones.

VI. SUPPORTING FACILITIES

Supporting facilities aid primary medical services and contribute to swift treatment within the same hospitals. ECG, Radiology/X-ray, Blood banks, and Pharmacy are included in the study.

ECG Facilities

Electrocardiogram (ECG) tests record the heart's electrical impulses to assess heart rhythm, muscle thickness, and chamber size. Availability of ECG facilities in the Co-operative hospitals is as follows:

ECG facilities are available in only 5 out of 11 hospitals in the North zone. In the Central zone, all hospitals offer these facilities. However, in the South zone, this service is available in only 1 out of 4 hospitals. ECG services are predominantly available in the Central zone. Analysis indicates homogeneity among the three zones of Kerala regarding the availability of ECG facilities in Co-operative hospitals. The calculated chi-square value of 5.05 (df = 2) is lower than the table value (5.99), and the p-value is 0.08, which is greater than 0.05.

Interpretation: The availability of ECG facilities is relatively consistent across Co-operative hospitals in all zones.

Pharmacy

Pharmacy departments are responsible for managing and supplying medicines in hospitals. Availability of pharmacy facilities in the Co-operative hospitals is as follows:

Pharmacy services are available in all Co-operative hospitals across all three zones in Kerala. Pharmacies are operational in all selected hospitals within the three zones.

Radiology/X-ray Facilities

Radiology is essential for diagnosing diseases and monitoring healing. Availability of Radiology/X-ray facilities in the Co-operative hospitals is as follows:

In the North zone, 7 out of 11 hospitals have Radiology and X-ray facilities (63.6%). In the Central zone, all four hospitals have this facility. In the South zone, half of the hospitals offer X-ray facilities. Central zone hospitals have a higher number of Co-operative hospitals with X-ray facilities. Analysis indicates homogeneity among the three zones of Kerala regarding the availability of Radiology/X-ray facilities in Co-operative hospitals. The calculated chi-square value of 2.59 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.27, which is greater than 0.05.

Interpretation: The availability of Radiology/X-ray facilities is relatively consistent across Co-operative hospitals in all zones.

Blood Bank

Blood banks are crucial for major surgical operations and require proper management. Availability of Blood bank facilities in the Co-operative hospitals is as follows:

Blood bank facilities are relatively limited in hospitals across all three zones. In the South zone, the percentage of hospitals with blood bank facilities is zero. The analysis shows homogeneity among the three zones of Kerala regarding the availability of Blood bank facilities in Co-operative hospitals. The calculated chi-square value of 4.64 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.09, which is greater than 0.05.

Interpretation: The availability of Blood bank facilities is relatively consistent across Co-operative hospitals in all zones.

VII. WELLNESS FACILITIES

Wellness facilities improve patient health during or after treatment. Dietary units, Physiotherapy, and Rehabilitation units fall under this category.

Dietary Unit

The dietary unit ensures patients' nutritional needs are met. Availability of dietary facilities in the Co-operative hospitals is as follows:

Dietary units are available in only four hospitals in the North zone. In the Central zone, 50% of hospitals have this facility, and in the South zone, it is available in only 25% of hospitals. The analysis shows homogeneity among the three zones of Kerala regarding the availability of dietary units in Co-operative hospitals. The calculated chi-square value of 0.54 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.76, which is greater than 0.05.

Interpretation: The availability of dietary units is relatively consistent across Co-operative hospitals in all zones.

Physiotherapy and Rehabilitation

Physiotherapy departments focus on improving patient conditions and preventing complications. Availability of Physiotherapy and Rehabilitation facilities in the Co-operative hospitals is as follows:

In the North zone, 90.9% of hospitals have physiotherapy facilities, while all hospitals in the Central zone offer these services. In the South zone, physiotherapy facilities are available in only 50% of hospitals.

Physiotherapy facilities are more prevalent in the Central zone. The analysis shows homogeneity among the three zones of Kerala regarding the availability of Physiotherapy and Rehabilitation facilities in Co-operative hospitals. The calculated chi-square value of 4.64 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.09, which is greater than 0.05.

Interpretation: The availability of Physiotherapy and Rehabilitation facilities is relatively consistent across Co-operative hospitals in all zones.

VIII. MAINTENANCE FACILITIES

Maintenance facilities ensure hospital equipment and services function properly. They optimize the use of capital assets, medical equipment, and technical devices.

Laundry Facilities Laundry facilities provide high-quality linens for patient comfort. Availability of Laundry facilities in the Co-operative hospitals is as follows:

In the North zone, 7 out of 11 sample hospitals have laundry facilities. In the Central zone, all sample hospitals have this facility. In the South zone, laundry facilities are available in only 25% of hospitals. The analysis shows homogeneity among the three zones of Kerala regarding the availability of laundry facilities

in Co-operative hospitals. The calculated chi-square value of 4.84 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.09, which is greater than 0.05.

Interpretation: The availability of Laundry facilities is relatively consistent across Co-operative hospitals in all zones.

Engineering and Maintenance Services

Engineering and maintenance departments ensure the upkeep of hospital facilities. Availability of engineering and maintenance services in the Co-operative hospitals is as follows:

In the Central zone, 50% of Co-operative hospitals have engineering and maintenance service facilities. In the North zone, this facility is available in 27.3% of hospitals, and in the South zone, it is available in 25% of hospitals. Central zone hospitals have more facilities than other zones. The analysis shows homogeneity among the three zones of Kerala regarding the availability of engineering and maintenance services in Co-operative hospitals. The calculated chi-square value of 0.80 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.67, which is greater than 0.05.

Interpretation: The availability of Engineering and Maintenance services is relatively

consistent across Co-operative hospitals in all zones.

Waste Treatment Plant

Waste treatment plants manage hazardous waste generated in hospitals. Availability of waste treatment plants in the Co-operative hospitals is as follows:

In the Central zone, 50% of Co-operative hospitals have waste treatment plants. In the South zone, this facility is available in 25% of hospitals, and in the North zone, only 18.2% of hospitals have this facility. Hospitals in the Central zone have this service more than in other zones. The analysis shows homogeneity among the three zones of Kerala regarding the availability of Waste Treatment services in Co-operative hospitals. The calculated chi-square value of 1.54 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.46, which is greater than 0.05.

Interpretation: The availability of Waste Treatment Plant services is relatively consistent across Co-operative hospitals in all zones.

Store Department

Store departments manage material supply and maintain records. Availability of Store departments in the Co-operative hospitals is as follows:

In the North zone, 72.7% of hospitals have store departments. In the Central zone, all Co-operative hospitals have this facility, as do all hospitals in the South zone. The analysis reveals homogeneity among the three zones of Kerala regarding the availability of Store departments in Co-operative hospitals. The calculated chi-square value of 2.59 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.27, which is greater than 0.05.

Interpretation: The availability of Store departments is relatively consistent across Co-operative hospitals in all zones.

Central Sterile Supply Services

Central Sterile Supply Services ensure proper sterilization of medical equipment. Availability of Central Sterile Supply Services in the Co-operative hospitals is as follows:

In the North zone, 36.4% of hospitals have Central Sterile Supply Services. In the Central zone, 75% of hospitals have this facility, while in the South zone, only 25% of hospitals offer this service. The analysis shows homogeneity among the three zones of Kerala regarding the availability of Central Sterile Supply services in Co-operative hospitals. The calculated chi-square value of 2.40 ($df = 2$) is lower than the table value (5.99), and the p-value is 0.30, which is greater than 0.05.

Interpretation: The availability of Central Sterile Supply services is relatively consistent across Co-operative hospitals in all zones.

This concludes the analysis of medical and supporting facilities across the different zones in the Co-operative hospitals of Kerala.

VIII. COMMUNICATION FACILITIES

These facilities are essential additions provided to patients for seamless communication of crucial information to those in need. Registration and record-keeping units contain comprehensive patient information necessary at any stage of treatment, which can be effectively communicated to doctors or wherever required. Telecommunication facilities allow patients to contact their family members, friends, or relatives for assistance while undergoing treatment in hospitals. An analysis of such facilities in various Co-operative hospitals follows.

Registration and Record Keeping

Medical documentation serves as a multifunctional record used to communicate and document vital information about a patient's medical care, including medical history, diagnostic test results, clinical findings, pre- and post-operative care, patient progress, and prescriptions.

It can be understood that registration and record-keeping services are available in all hospitals across the three zones.

Telecommunication Facilities

These facilities enhance communication between patients and healthcare professionals. Communication through IT-based technologies is highly beneficial in treatment procedures. The availability of telecommunication facilities in Co-operative hospitals is presented in Table 5.5. It clearly illustrates that telecommunication facilities are available in all Central zone hospitals, while they are present in eight out of 11 hospitals in the North zone. Half of the hospitals in the South zone offer telecommunication facilities. Evidently, there is homogeneity across the three zones in Kerala regarding the availability of telecommunication services provided by Co-operative hospitals, as the calculated chi-square value (2.59, df=2) is lower than the table value (5.99), and the p-value (0.27) is higher than 0.05.

Interpretation: The analysis strongly suggests that the availability of telecommunication facilities is consistent across Co-operative hospitals in all zones.

IX. ALLIED SERVICES

Allied services encompass additional offerings provided by hospitals to indirectly create a peaceful environment for patients during their hospital stay. Ambulance services, adequate parking spaces for vehicles, bank and ATM facilities, and hospital security fall under this category.

Ambulance Service

In emergency conditions, an ambulance becomes the first-response vehicle used to swiftly transport patients, ensuring they receive prompt medical attention from hospital personnel. The availability of ambulance facilities in Co-operative hospitals indicates that they are present in all the hospitals considered for the study across the three zones of Kerala.

Interpretation: The analysis suggests that ambulance services are universally available in the hospitals considered across the three zones of Kerala.

Adequate Parking Space

Patients arriving at hospitals need parking facilities for their vehicles. Properly managed parking ensures orderly vehicle flow. The availability of parking facilities in Co-operative hospitals is evident. About 50 percent of Central zone hospitals offer ample

parking space, whereas only 27.3 percent of North zone hospitals do so. In the South zone, this facility is available in just 25 percent of hospitals. In terms of parking space facility by zone, there is homogeneity, as the calculated chi-square value (0.80, $df=2$) is lower than the table value (5.99), and the p-value (0.67) is higher than 0.05.

Interpretation: The analysis implies that parking facilities are nearly uniform across Co-operative hospitals in all zones.

Bank and ATM Facilities

Bank and ATM facilities are essential for financial transactions related to treatment. Sufficient bank or ATM facilities within hospital premises facilitate timely treatment. The availability of bank and ATM facilities in Co-operative hospitals indicates that these facilities are more prevalent in Central zone hospitals (75 percent), followed by North zone hospitals (54.5 percent). However, South zone hospitals offer these facilities the least, at 50 percent. The calculated Chi-square value (0.63, $df=2$) is lower than the table value (5.99), and the p-value (0.73) is greater than 0.05, suggesting homogeneity among the three zones regarding the availability of bank and ATM facilities provided by Co-operative hospitals in Kerala.

Interpretation: The analysis reveals that the availability of bank and ATM facilities is largely consistent across Co-operative hospitals in all zones.

Hospital Security

A robust security system is essential to ensure safety within hospital premises. The availability of hospital security facilities in Co-operative hospitals across the three zones of Kerala indicates that 100 percent of Central and South zone hospitals provide security services, while 81.8 percent of North zone hospitals do so. The calculated chi-square value (1.63, $df=2$) is lower than the table value (5.99), and the p-value (0.44) is greater than 0.05, indicating homogeneity among the three zones in Kerala regarding the availability of hospital security services provided by Co-operative hospitals.

Interpretation: The analysis suggests that the availability of hospital security facilities is consistently high across Co-operative hospitals in all zones.

CONCLUSION

India has made significant strides in healthcare standards in the post-independence era, with Kerala leading among Indian states in healthcare. However, some believe that resources, especially financial ones, need augmentation in the healthcare sector. Based on the detailed zone-wise analysis of Co-operative hospital facilities, it can be inferred that among the three zones in Kerala, the Central zone boasts the most efficient and technologically advanced Co-operative hospitals with improved medical facilities compared to the other two zones. Following the Central zone, the North zone also has a considerable number of Co-operative hospitals with medical facilities. The South zone's Co-operative hospitals, on the other hand, offer the fewest medical services. Nonetheless, statistical tests reveal that the chi-square values are all lower than the table values, and the p-values for all facilities exceed 0.05. Consequently, it can be concluded that the availability of hospital services is consistent across Co-operative hospitals in the three zones of Kerala.

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