

# IMPACT OF NABH ACCREDITATION ON MEDICAL LITIGATION IN CHRISTIAN HOSPITALS IN KERALA: A RETROSPECTIVE COMPARATIVE STUDY

Shijo Thomas<sup>1</sup>, Nameeta Garg<sup>2</sup>, Gimson D Parambil<sup>3</sup>

<sup>1</sup>Research scholar ,Department of Commerce and Management ,Desh Bhagat University, Mandi Gobindgarh, Punjab [Shijokonu@gmail.com](mailto:Shijokonu@gmail.com)

<sup>2</sup>Associate Professor , Department of Commerce and Management,Desh Bhagat University, Mandi Gobindgarh, Punjab [Gargnameeta133@pbi.ac.in](mailto:Gargnameeta133@pbi.ac.in)

<sup>3</sup>Rajagiri Viswajyothi College of Arts and Applied Sciences,Perumbavoor. 683546 [principal@rajagiriviswajyothi.org](mailto:principal@rajagiriviswajyothi.org)

## Abstract

Legal proceedings in the health sector have become a critical tool in the assessment of healthcare quality and patient safety in general. Despite the fact that National Accreditation Board for Hospitals and Healthcare Providers (NABH) accreditation is recognized as a way to increase healthcare quality, its influence on medico-legal situations has not been studied sufficiently. The current retrospective comparative study assessed the impact of NABH accreditation on medico-legal situations in Christian hospitals in Kerala on the basis of medico-legal cases registered during January 2015-December 2024. The statistical analyses of the results and logistic regression were carried out in IBM SPSS Statistics (Version 29.0). It was revealed that medico-legal situations in NABH-accredited hospitals were lower in number compared to patient numbers. There was a decrease in litigation in 50.8% after accreditation ( $p = 0.018$ ). Furthermore, there were better legal outcomes and lower compensations in accredited hospitals. NABH accreditation was found to be a factor that protects against adverse results from legal action (adjusted OR = 0.53,  $p = 0.005$ ), while poor documentation, diagnosis and lack of informed consent were factors that increase medico-legal risk. In conclusion, the results show that NABH accreditation helps to improve clinical governance and reduce medico-legal risk in Christian hospitals.

**Keywords:** NABH accreditation; Medical litigation; Christian hospitals; Kerala; Patient safety; Clinical governance; Healthcare quality; Medico-legal risk.

## 1. Introduction

The issue of medical litigation has become a very significant one for health care delivery systems in light of heightened awareness among patients, greater demands for quality care, and increased liability for health care practitioners. The introduction of new legal avenues through the Consumer Protection Act in India has led to an increase in medico-legal cases that have resulted from negligence, misdiagnosis, delay in treatment, poor documentation, lack of informed consent, and other related problems.

Hospital accreditation has become a significant way of ensuring improved quality of healthcare and mitigating clinical risks. In India, NABH offers standards for patient safety, clinical governance, documentation, infection control and quality assurance. Through the standardization of healthcare practices, NABH hopes to ensure improved quality of healthcare and institutional accountability. The literature on the impact of accreditation on reduced medico-legal cases, however, is scant.

Christian hospitals have been playing a very significant role in the provision of comprehensive healthcare services in Kerala. Most of these hospitals have used NABH accreditation to achieve improved quality management and patient safety. There is, however, little literature on the reduction in medico-legal cases among Christian hospitals.

Previous literature has mainly focused on the effects of NABH accreditation in terms of the quality of healthcare, patient satisfaction, and organizational performance but has paid relatively less attention to medico-legal issues. Moreover, there is a lack of literature pertaining to Christian hospitals in Kerala. Hence, this study attempts to compare the litigation pattern between NABH-accredited and non-accredited Christian hospitals through a retrospective study.

## 1. Literature review

Accreditation in healthcare is well-known as a useful tool for enhancing the quality of healthcare services, the safety of patients, and accountability. Jain & Lodha (2023) analyzed the comparison between the standards of NABH and the AB-PMJAY quality standards and concluded that NABH provides more detailed criteria concerning clinical governance, documentation, patient safety, and quality assurance. It was emphasized that NABH standards can enhance the quality of hospital processes and decrease operational weaknesses associated with medico-legal risks.

All the studies performed in Kerala have found favourable outcomes due to accreditation. According to Joseph (2018), the hospitals accredited had significantly high levels of patient satisfaction compared to those that were not accredited, implying increased service delivery and improved communication. Moreover, Joseph (2021) noted that accreditation improved clinical governance, standardized healthcare procedures, and quality management to varying degrees based on how well the process was implemented. Backing the findings of the above studies, Kanyal and Ghewade (2025) conducted a systematic review and found that NABH accreditation increases documentation, patient safety, infection prevention, staff competence, and quality management but there is little evidence of its impact on medical litigations.

Medical litigation has become more widely viewed as a key indicator of quality and safety in health care. Frakes and Jena (2016) noted that malpractice liability serves as a powerful tool to enhance the practices of clinicians and comply with professional guidelines. Similarly, Mello et al. (2020) found that quality documentation, risk management, and quality improvement programs effectively reduce medico-legal risk, but malpractice litigation cannot alone solve all the problems related to medical mistakes.

Christian faith-based hospitals remain an integral part of the Indian health care delivery system due to their patient-centeredness and affordability. Thekkekara (2020) noted that they strive to achieve both quality improvement and financial sustainability, at the same time upholding ethics in health care delivery. With the growing trend of accreditation of Christian hospitals through NABH, evaluating its impact on the medico-legal outcomes has become vital.

While several studies have highlighted the role of NABH accreditation in enhancing health care quality, patient satisfaction and organizational performance, very few studies have examined its effect on medical litigation, particularly among Christian hospitals in Kerala. The existing literature in this regard has largely emphasized the quality parameters rather than medico-legal factors. Hence, the current study seeks to fill this research gap through a retrospective analysis of medical litigation in accredited and un-accredited Christian hospitals.

## 2. Materials and methods

The following section provides an outline of the research methodology employed in analyzing the effect of NABH accreditation on medical litigation in Christian hospitals of Kerala. This includes details about the design of the study, study sample, selection criteria, data sources, study variables, data collection process and statistical techniques employed for comparative study of medico-legal cases.

### 2.1 Study Design and Setting

The current research adopted a retrospective comparative observational method in an attempt to examine the effects of NABH accreditation on medical litigation in the case of Christian hospitals in Kerala, India. This study was carried out in the selected Christian hospitals with NABH accreditation and without NABH accreditation, which provided secondary and tertiary healthcare services. The retrospective approach allowed conducting a detailed analysis of the medico-legal history and comparing the medico-legal trends in accredited and unaccredited hospitals, as well as prior to and after the NABH accreditation.

### 2.2 Study Period and Study Population

The study was performed using a retrospective analysis of medico-legal cases reported from January 2015 to December 2024, at selected NABH-accredited and non-accredited Christian hospitals in Kerala. Litigation data were

collected from the legal department of respective hospitals and public judicial documents, with each medico-legal case being the unit of analysis. In the case of NABH-accredited hospitals, the medico-legal cases have been segregated on the basis of pre-accreditation and post-accreditation years of NABH accreditation.

### **2.3 Inclusion and Exclusion Criteria**

Criteria for the study were made to ensure only those medico-legal cases that were relevant to the patients were included in the analysis.

#### ***Inclusion Criteria***

- Medical Negligence Cases and Civil Litigations pertaining to deficiencies in medical care.
- Involving diagnostic error, surgery complications, medication error, delay in treatment, informed consent, deficiency in documentation, and any communication-based cases.
- Cases which have been filed between January 2015 and December 2024.
- Litigation cases of the selected Christian hospitals in Kerala.

#### ***Exclusion Criteria***

- Disputes relating to employment, labour issues, contracts, property, and insurance.
- Cases that involve criminal activities not associated with clinical negligence.
- Duplicates and cases lacking sufficient documentation for analysis.

### **2.4 Data Sources**

The information was sourced from various places to increase its validity and reliability such as the legal papers of hospitals, the department of medical records, quality assurance and risk management departments, the judgements made by the Consumer Disputes Redressal Commission, the judgements made by the Kerala State Consumer Disputes Redressal Commission, the judgements made by the High Court of Kerala, and the NABH accreditation records.

### **2.5 Study Variables**

The main independent variables used in the study were NABH accreditation status (accredited or non-accredited), and the accreditation phase (before accreditation or after accreditation). The dependent variables studied were medical litigation cases, annual litigation rate, type of medico-legal complaint, clinical specialty involved, litigation venue, period of litigation, litigation outcome, and compensation awarded. Some of the other variables studied were patient age and sex, hospital type, number of beds, type of clinical service provided, emergent or elective nature of the procedure, adequacy of documentation, informed consent, communication-related complaints, delayed diagnosis, drug administration error, surgical complications, infections and death.

### **2.6 Data Collection Procedure**

The data was obtained via a structured form for data abstraction from all participating hospitals. After obtaining institutional approval, the medico-legal files were scrutinized, and data on hospital features, patient features, nature of the allegation, clinical department involved, legal processes, time period of the litigation process, amount of compensation given, and ultimate disposition of the case were abstracted. Status of NABH accreditation and year of accreditation was confirmed from the records of NABH accreditation. The data was anonymized before any analysis, and a unique identification number was given to every case.

### **2.7 Statistical Analysis**

The data was input into Microsoft Excel and analyzed with IBM SPSS Statistics (Version 29.0). Descriptive statistics were used for the summary of hospital attributes and litigation profile, where continuous variables are expressed as mean  $\pm$  SD or median (interquartile range) and categorical variables in terms of frequencies and percentages. Comparative analysis was done through chi-square/Fisher's exact test, independent samples t-test, Mann-Whitney U test, paired t-test/Wilcoxon signed-rank test as applicable. Poisson/negative binomial regression models were used to determine the risk factors for litigation counts, whereas binary logistic regression analysis was carried out to find the predictors of unfavorable litigation outcomes. The effect estimates were presented in terms of odds ratios (ORs) or incidence rate ratios (IRRs) with 95% CIs, and a two-tailed p-value of  $< 0.05$  was considered as statistically significant.

### 3. Results and discussion

This section highlights the results of the retrospective comparative study conducted to investigate the impact of NABH accreditation on medical litigation in Christian hospitals of Kerala. With the help of the data set, the analysis was conducted for comparing the characteristics of both accredited and unaccredited hospitals, evaluating the changes in the occurrence of litigations after NABH accreditation, analyzing the distribution of the medico-legal cases and their outcomes, evaluating the compensation paid, and the factors that determine the adverse outcome of the litigation cases.

Table 1 provides the general characteristics of the participating hospitals considered in the comparison. Table 1 highlights the comparison in terms of size of institutions, patient load, length of study and the total number of medico-legal cases in NABH accredited and non-accredited Christian hospitals.

**Table 1:** Characteristics of Participating Hospitals

| Characteristic                   | NABH Accredited (n = 6) | Non-Accredited (n = 6) |
|----------------------------------|-------------------------|------------------------|
| Mean bed capacity                | 462 ± 118               | 348 ± 96               |
| Mean annual outpatient visits    | 401,250                 | 289,630                |
| Mean annual inpatient admissions | 28,460                  | 20,880                 |
| Mean study period (years)        | 10                      | 10                     |
| Total litigation cases           | 176                     | 256                    |

As demonstrated in Table 1, the NABH accredited hospitals were typically the larger tertiary care hospitals with larger bed strength and significantly higher outpatient and inpatient workload than the non-accredited hospitals. Even though they had higher numbers of patients in comparison with other non-accredited hospitals, the accredited hospitals only reported 176 medico-legal cases, while the non-accredited hospitals had 256 medico-legal cases. This initial observation could indicate that accreditation plays a role in enhancing quality assurance and risk management, resulting in reduced number of medico-legal cases.

Whether NABH accreditation had any impact on the number of lawsuits was investigated by comparing litigation history pre- and post-accreditation. The number of medico-legal suits and the average litigation rate per year for the pre- and post-accredited periods are provided in Table 2 below.

**Table 2:** Medical Litigation Before and After NABH Accreditation

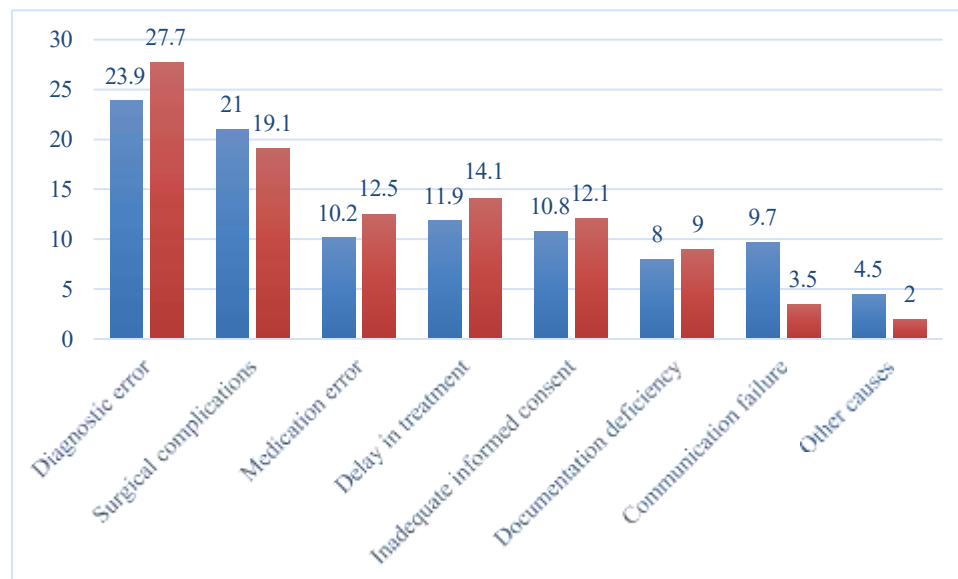
| Period               | Cases | Mean Cases/Hospital/Year | Percentage Change |
|----------------------|-------|--------------------------|-------------------|
| Before Accreditation | 118   | 3.93                     | —                 |
| After Accreditation  | 58    | 1.93                     | -50.8%            |

The results as shown in Table 2 show a significant drop in medico-legal lawsuits after the introduction of NABH accreditation criteria. The total number of medico-legal lawsuits decreased from 118 before the hospital got accreditation to 58 after getting the accreditation, translating to a 50.8% decrease. Likewise, the mean annual medico-legal lawsuit rate dropped from 3.93 to 1.93 lawsuits per hospital per year. Statistical test revealed that this decrease was statistically significant (paired t-test,  $p = 0.018$ ).

It is important to understand the nature of the medico-legal complaints so that areas needing quality improvement can be identified. Table 3 shows the comparison of litigation based on the major cause of complaint among the NABH-accredited and non-accredited hospitals. Figure 1 represents the distribution of medico-legal causes of litigation in NABH-accredited and non-accredited Christian hospitals in Kerala.

**Table 3:** Distribution of Litigation by Cause

| Cause of Litigation         | NABH n (%) | Non-NABH n (%) |
|-----------------------------|------------|----------------|
| Diagnostic error            | 42 (23.9)  | 71 (27.7)      |
| Surgical complications      | 37 (21.0)  | 49 (19.1)      |
| Medication error            | 18 (10.2)  | 32 (12.5)      |
| Delay in treatment          | 21 (11.9)  | 36 (14.1)      |
| Inadequate informed consent | 19 (10.8)  | 31 (12.1)      |
| Documentation deficiency    | 14 (8.0)   | 23 (9.0)       |
| Communication failure       | 17 (9.7)   | 9 (3.5)        |
| Other causes                | 8 (4.5)    | 5 (2.0)        |



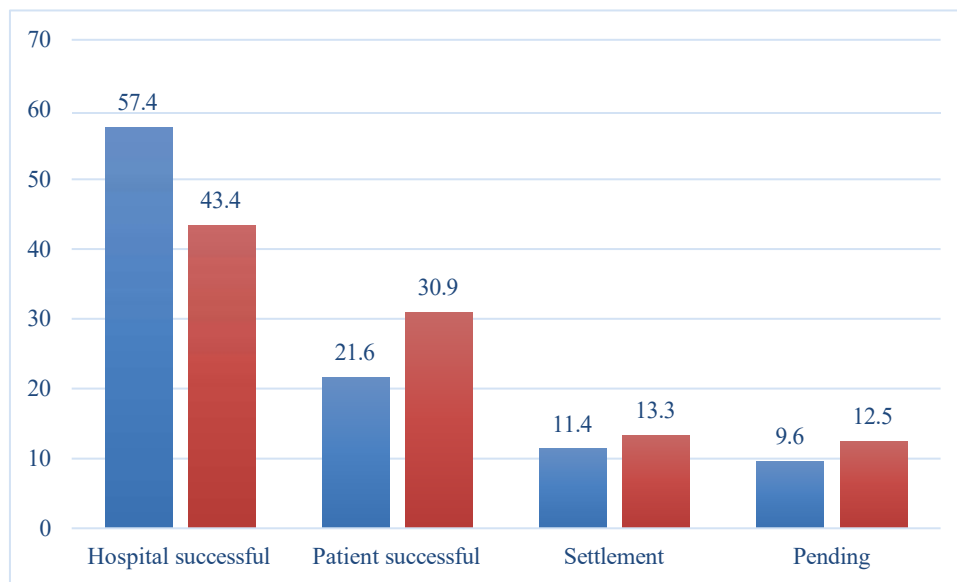
**Figure 1:** Visual Representation of Distribution of Litigation by Cause

The data presented in Table 3 indicates that among all the reasons for litigation, diagnostic errors occupied the first place in both categories of hospitals with 23.9% and 27.7% for the accredited and non-accredited hospitals respectively. The second most common cause of litigation was surgical errors. The third and fourth most common causes of litigation were delays in treatment and medication errors. In turn, documentation deficiency and issues with informed consent were less common among the hospitals that had accreditation, as this process emphasized the necessity to have well-developed documentation and follow consent procedure. Thus, the distribution of litigation causes varied greatly between these two groups of hospitals ( $\chi^2 = 14.62$ ,  $p = 0.023$ ). As is demonstrated in Figure 1, the most common cause of litigation among these groups was diagnostic errors, and NABH-accredited hospitals reported lower proportions of documentation deficiencies, informed consent problems, and delays in treatment.

Apart from the frequency and reasons for litigations, the analysis was also carried out on the outcome of medico-legal cases. Table 4 gives the judicial outcome of medico-legal cases among NABH accredited and non-accredited hospitals. Figure 2 shows the distribution of judicial outcome of medico-legal cases in NABH accredited and non-accredited Christian hospitals in Kerala.

**Table 4:** Litigation Outcomes

| Outcome             | NABH n (%) | Non-NABH n (%) |
|---------------------|------------|----------------|
| Hospital successful | 101 (57.4) | 111 (43.4)     |
| Patient successful  | 38 (21.6)  | 79 (30.9)      |
| Settlement          | 20 (11.4)  | 34 (13.3)      |
| Pending             | 17 (9.6)   | 32 (12.5)      |



**Figure 2:** Visual Representation of Litigation Outcomes

As can be seen from the results in Table 4, hospitals that have an accreditation record had more positive outcomes in terms of litigations as compared to non-accredited hospitals. Over 57.4% of cases related to NABH-accredited hospitals ended positively for the hospital while in case of non-accredited hospitals only 43.4% of litigations ended up in a similar way. On the other hand, litigations favoring the patient were more common in non-accredited hospitals (30.9%) as compared to accredited hospitals (21.6%). There was a significant difference between litigation outcomes ( $\chi^2 = 9.84$ ,  $p = 0.020$ ) which implies that hospitals having an accreditation record had comparatively better medico-legal performance. Figure 2 shows that hospitals that have NABH accreditation had relatively more hospital favorable judgments and less patient favorable judgments.

Financial liability constitutes another significant measure for medico-legal impact. Table 5 provides a comparison of compensation amount in litigations against NABH-accredited and non-NABH-accredited hospitals.

**Table 5:** Compensation Awarded

| Variable                   | NABH      | Non-NABH   |
|----------------------------|-----------|------------|
| Mean compensation (₹ lakh) | 6.8 ± 3.5 | 10.9 ± 5.4 |

|                               |      |      |
|-------------------------------|------|------|
| Median compensation (₹ lakh)  | 5.9  | 9.8  |
| Maximum compensation (₹ lakh) | 22.4 | 31.8 |

As shown in Table 5, litigations against hospitals accredited by NABH received significantly lower monetary compensation compared to those not accredited by NABH. The average amount of money awarded in case of NABH-accredited hospitals was ₹6.8 lakh while in case of hospitals which did not have NABH accreditation, it was ₹10.9 lakh. This trend was found even when median or maximum compensation amounts were calculated. The Mann–Whitney U test supported the significance of the difference ( $p=0.011$ ).

Factors that are independently associated with poor medico-legal outcomes were evaluated using a multivariate binary logistic regression analysis. Table 6 contains the adjusted odds ratio, confidence interval, and statistical significance of the predictors used in the regression analysis.

**Table 6:** Logistic Regression Analysis

| Variable                    | Adjusted OR | 95% CI    | p-value |
|-----------------------------|-------------|-----------|---------|
| NABH Accreditation          | 0.53        | 0.34–0.83 | 0.005   |
| Documentation deficiency    | 2.31        | 1.46–3.66 | <0.001  |
| Inadequate informed consent | 1.92        | 1.18–3.11 | 0.008   |
| Diagnostic error            | 2.64        | 1.67–4.18 | <0.001  |
| Communication failure       | 1.41        | 0.86–2.30 | 0.176   |

According to Table 6, the regression analysis has revealed several significant predictors of medico-legal adverse outcomes. Being accredited by NABH is an independent factor linked to a 47% decrease in the odds of having an adverse litigation outcome (Adjusted OR = 0.53,  $p = 0.005$ ). Conversely, deficiencies in documentation, diagnoses, and informed consent have been revealed to increase the probability of adverse litigation outcomes (Adjusted OR = 2.31; Adjusted OR = 2.64; Adjusted OR = 1.92 respectively). However, communication failure was not a statistically significant predictor ( $p = 0.176$ ). Thus, it can be suggested that while accreditation creates an organizational benefit in terms of medico-legal risk reduction, maintaining appropriate documentation, informed consent, and accurate diagnoses is of great importance.

## 4. Conclusion

The study conducted on a retrospective basis provides evidence that accreditation from the NABH is linked to enhanced medico-legal performance of Christian hospitals in Kerala due to better practices of quality management and clinical governance. Hospitals that had received accreditation showed fewer numbers of litigation, better results of litigation and smaller compensation amounts compared to non-accredited hospitals. Deficiencies in documentation, medical errors and lack of proper informed consent are the main reasons for adverse litigation. It should be mentioned that further research involving more data obtained from multiple centers is needed in order to verify the results.

## References

1. Bhatia, K. (2017). Reviewing Patient Medical Documentation as Means to Enhance Patient Safety as Per NABH 4th Edition Standards.
2. Frakes, M., & Jena, A. B. (2016). Does medical malpractice law improve health care quality?. *Journal of public economics*, 143, 142-158.
3. Jain, S., & Lodha, G. (2023). Comparison of NABH and AB-PMJAY Quality Standards for Accreditation in a Tertiary Care Medical hospital. *Indian Journal of Public Health Research & Development*, 14(1).

4. Jamir, S. A., & Lalthanmawia, R. (2021). Christian Organizations for Basic Health Justice in India in the Twenty-First Century. *Faith-Based Health Justice: Transforming Agendas of Faith Communities*, 101.
5. Joseph, S. (2018). The effect of accreditation on patient satisfaction in public healthcare delivery: a comparative study of accredited and non-accredited hospitals in Kerala. *Rajagiri Journal of Social Development*, 10(2), 27-40.
6. Joseph, S. (2020). Impact assessment of accreditation in primary and secondary public Healthcare Institutions in the State of Kerala, India. *medRxiv*, 2020-05.
7. Joseph, S. (2021). Does accreditation symbolise quality in public healthcare delivery? An investigation of hospitals in Kerala. *Journal of Health Management*, 23(4), 715-729.
8. Kanyal, D., & Ghewade, B. (2025). Evaluating quality improvement in tertiary care hospital before and after NABH accreditation: a systematic review. *Frontiers in Health Services*, 5, 1654514.
9. Maphumulo, W. T., & Bhengu, B. R. (2019). Challenges of quality improvement in the healthcare of South Africa post-apartheid: A critical review. *Curationis*, 42(1), 1-9.
10. Mello, M. M., Frakes, M. D., Blumenkranz, E., & Studdert, D. M. (2020). Malpractice liability and health care quality: a review. *Jama*, 323(4), 352-366.
11. Mensah, G. B., & Dutta, P. K. (2024). Evaluating if Ghana's Health Institutions and Facilities Act 2011 (Act 829) Sufficiently Addresses Medical Negligence Risks from Integration of Artificial Intelligence Systems. *Mesopotamian Journal of Artificial Intelligence in Healthcare*, 2024, 35-41.
12. Nussbaum, L. (2017). Trial and Error: Legislating ADR for Medical Malpractice Reform. *Maryland Law Review*, 76(2).
13. Sankar D, H., Benny, G., Jaya, S., & Nambiar, D. (2024). National Rural Health Mission reforms in light of decentralised planning in Kerala, India: a realist analysis of data from three witness seminars. *BMC Public Health*, 24(1), 678.
14. Shaikh, Z. M. (2020). A CRITICAL COMPARATIVE STUDY ON THE NATIONAL ACCREDITATION STANDARDS FOR HOSPITALS OF INDIA, AUSTRALIA, DENMARK AND SOUTH AFRICA (Vol. 1). Ky publications.
15. Thekkekara, J. V. (2020). Sustainability and inclusiveness in a competitive market: A study of faith-based hospitals in India. *Christian Journal for Global Health*, 7(2), 7-18.