

Workforce Distribution and Human Resource Challenges in Faith-Based Hospitals: Evidence from CHAI-Affiliated Institutions Across India

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ABSTRACT

Background: Faith-based healthcare organisations play a critical role in delivering equitable healthcare services in underserved regions, yet they face substantial human resource challenges. This study examines workforce distribution patterns and human resource constraints in CHAI-affiliated hospitals across India.

Methods: A cross-sectional study was conducted with 250 CHAI-affiliated hospitals using stratified random sampling. Data on workforce composition, distribution patterns, training opportunities, and staffing adequacy were collected through structured questionnaires administered to hospital heads.

Results: Significant geographic disparities in workforce distribution were identified. Consultant availability was substantially higher in southern states (mean=19.9±58.2; median=7) compared to central and northern regions (mean=8.7±19.3; median=3; $p=0.006$). Urban and suburban hospitals had significantly more consultants than rural facilities ($p<0.01$). Alarming, 54% of hospitals reported having no junior doctors, creating sustainability concerns for future medical leadership. Staff nurse availability showed better distribution, with 35.6% of hospitals reporting 11–20 nurses. However, 71.6% of hospitals reported no physician training sessions during the preceding year, indicating limited continuing professional development. Only 16.4% of hospitals conducted annual performance appraisals for physicians.

Conclusions: CHAI hospitals operate within a constrained human-resource environment characterised by substantial geographic inequities in specialist distribution, limited physician workforce development, and inadequate performance management systems. Addressing these challenges requires targeted recruitment incentive schemes, innovative workforce retention strategies, strengthened continuing professional development infrastructure, and systematic human resource management systems.

Keywords: Healthcare workforce, faith-based hospitals, rural healthcare, human resource management, India, workforce distribution

INTRODUCTION

The healthcare industry has emerged as one of the fastest-growing sectors globally due to demographic transitions, technological advancements, increasing disease burden, and rising healthcare expenditure. Globally, the healthcare market was valued at approximately USD 8.5 trillion in 2019 and is projected to exceed USD 15 trillion by 2030, driven by ageing populations, increasing prevalence of chronic diseases, expanding health insurance coverage, and rapid adoption of digital health technologies (Deloitte, 2022). This rapid growth and expansion of the healthcare sector underscores the critical importance of adequate and well-distributed healthcare workforce capacity to meet increasing global demand for healthcare services.

Healthcare workforce availability and distribution represent critical determinants of healthcare system performance and population health outcomes (Frenk et al., 2010; World Health Organisation, 2021). The World Health Organisation estimates a global shortage of approximately 18 million healthcare workers, with particularly acute deficits in low- and middle-income countries (Campbell et al., 2013). India faces significant healthcare workforce challenges, with

substantial rural-urban disparities in healthcare professional distribution and limited workforce density below World Health Organisation-recommended thresholds of 22.8 health professionals per 10,000 population (Motkuri & Mishra, 2020; Rao et al., 2012).

Faith-based healthcare organisations operate distinctive service models, often prioritising service to vulnerable populations in geographically remote and economically disadvantaged regions where government infrastructure is limited and private corporate providers are absent (Olivier et al., 2015). The Catholic Health Association of India (CHAI), operating the largest non-profit healthcare network in the country, manages over 600 hospitals and 2,200 health centres serving approximately 21 million people annually (Catholic Health Association of India, 2021). These institutions provide essential healthcare access in rural, tribal, and underserved areas where alternative healthcare options are severely restricted. Despite their critical role in India's healthcare system, the sustainability and effectiveness of faith-based healthcare institutions depend critically on their ability to attract, retain, and develop adequate healthcare workforce capacity.

Limited empirical evidence exists regarding human resource characteristics, distribution patterns, and challenges specifically affecting faith-based healthcare institutions in India. Previous studies have examined healthcare workforce challenges in broader contexts or focused on government and private sector institutions, with insufficient attention to the distinctive challenges and opportunities within faith-based healthcare systems (Grobler et al., 2015; Kruk et al., 2018). Understanding workforce patterns, training and development practices, and adequacy of staffing in CHAI hospitals is essential for identifying strategies to strengthen institutional capacity and ensure sustainable healthcare service delivery in underserved regions.

The healthcare workforce crisis in India is characterised by mal-distribution, with rural areas experiencing acute shortages while urban centres have relative abundance (Garg et al., 2022). This maldistribution reflects multiple factors, including professional preferences for urban practice environments, superior infrastructure and educational facilities in urban centres, better financial incentives and career opportunities, and social and educational amenities attractive to healthcare professionals and their families. Faith-based hospitals, operating primarily in rural and remote areas, face disproportionate challenges in workforce recruitment and retention, as these institutions cannot typically compete with urban hospitals on financial incentives or infrastructure quality.

The impact of healthcare workforce shortages extends beyond service availability to affect service quality, patient safety, staff burnout, and organisational sustainability (Nair et al., 2022). Healthcare workers in understaffed facilities experience higher workloads, reduced time for patient interaction, increased stress and burnout risk, and a greater likelihood of errors affecting patient safety. In faith-based institutions where the workforce is already constrained, inadequate staffing directly threatens the organisational ability to maintain quality standards and continue service delivery. Additionally, the absence of career development pathways and professional growth opportunities in resource-constrained institutions contributes to staff migration to better-resourced facilities, creating cycles of workforce instability.

This study examines human resource characteristics, distribution patterns, workforce development practices, and staffing adequacy in CHAI-affiliated hospitals across diverse geographic regions and institutional contexts in India. By providing empirical evidence about workforce challenges in faith-based institutions, this research aims to inform evidence-based human resource strategies for strengthening organisational capacity and ensuring sustainable healthcare service delivery in underserved regions.

METHODS

Study Design and Setting

A quantitative descriptive cross-sectional study was conducted across CHAI-affiliated hospitals in India, representing approximately 38% of the total CHAI network (250 of 663 hospitals). The study was conducted during 2023,

encompassing hospitals across eleven CHAI regional units spanning the southern, central, and north-eastern states of India. This diverse geographic representation enabled examination of workforce distribution patterns across varied contexts.

Sampling Strategy

Proportionate stratified random sampling was employed, stratifying hospitals by regional units and bed capacity to ensure representative coverage across the CHAI network. The sample distribution reflected the geographic distribution of CHAI hospitals, with a larger representation from southern states where CHAI has substantial institutional presence. Stratification by bed capacity ensured inclusion of primary care hospitals (10-50 beds), secondary care facilities (51-200 beds), tertiary care centres (201-500 beds), and specialised hospitals (>500 beds).

Data Collection

Data were collected using a structured, pre-tested questionnaire administered to hospital heads (medical superintendents, chief administrators, or directors) responsible for operational and strategic decision-making. Hospital heads were selected as respondents because they possess comprehensive knowledge of institutional workforce composition and staffing arrangements, and hold responsibility for human resource management decisions.

The questionnaire captured data on multiple dimensions of human resources including: (1) workforce composition specifying numbers of consultants, junior doctors, nurses, allied health professionals, supporting staff, and outsourced personnel; (2) workforce distribution across hospital categories and departments; (3) training opportunities and continuing professional development practices; (4) performance appraisal implementation and frequency; (5) professional development support including conference attendance and research opportunities; and (6) perceived adequacy of staffing for current service needs.

Data collection was conducted through in-person visits to hospital facilities, ensuring complete data capture and enabling clarification of ambiguous responses. Hospital administrators completed questionnaires in the presence of trained data collectors who verified accuracy and completeness before data entry.

Data Analysis

Descriptive statistics, including means, medians, standard deviations, percentages, and interquartile ranges, were calculated to characterise workforce distribution across the CHAI network. The Mann-Whitney U test was used to compare workforce numbers across institutional variables (state location, settlement type, geographic setting, bed capacity) because workforce data were non-normally distributed. Chi-square tests examined associations between categorical variables, including hospital type and availability of specific professional categories. Statistical significance was set at $p < 0.05$. Analysis was conducted using SPSS version 26.

Ethical Considerations

Ethical approval was secured from the Institutional Ethics Committee before data collection. Informed written consent was obtained from all participating hospital administrators, with a clear explanation of study objectives, data collection procedures, and data protection measures. Confidentiality was maintained throughout, with hospital data stored securely and de-identified in all analyses and reports. Participants were assured that participation was voluntary and could be withdrawn at any time without consequences.

RESULTS

Workforce Composition and Overall Distribution

The mean number of consultants across CHAI hospitals was 16 ± 48.6 (median=5, IQR: 2-11), indicating substantial variation in specialist availability. This variation reflected differences in hospital size, service complexity, and resource availability. The high standard deviation relative to the mean indicated that workforce distribution was heavily skewed, with a small number of large tertiary care and medical college institutions employing many consultants, while most smaller hospitals employed few specialists.

Geographic Disparities in Specialist Distribution

Significant geographic disparities were identified in consultant availability. Consultants were substantially more abundant in southern states (mean= 19.9 ± 58.2 ; median=7, IQR: 2-12) compared to central and northern regions (mean= 8.7 ± 19.3 ; median=3, IQR: 1-8; $Z=2.73$, $p=0.006$). This disparity reflects historical patterns of healthcare infrastructure development, with southern states having earlier establishment of medical colleges and tertiary care centres that employ consultants. The median values (7 vs. 3 consultants) indicate that even typical southern hospitals have more than double the specialist capacity of typical central and northern hospitals, suggesting substantial differences in service capability across regions.

Settlement Type and Urban-Rural Disparities

Settlement type showed highly significant associations with consultant availability. Urban and sub-urban hospitals reported substantially higher numbers of consultants (mean= 24.9 ± 62.8 ; median=8, IQR: 3-16) than rural hospitals (mean= 4.1 ± 3.9 ; median=3, IQR: 1-6; $Z=6.22$, $p<0.01$). This disparity reflects the attractiveness of urban practice environments to specialists seeking superior infrastructure, professional networking, educational opportunities, and social amenities. Hospitals in non-difficult terrains reported more consultants (mean= 20.5 ± 58.0 ; median=7, IQR: 2-12) than those in difficult terrains such as hilly, tribal, or remote areas (mean= 6.6 ± 11.7 ; median=3, IQR: 1-7; $Z=3.94$, $p<0.01$), reflecting additional challenges in recruiting specialists to geographically challenging locations.

Junior Doctor Availability and Sustainability Concerns

A particularly concerning finding was the distribution of junior doctors: 54% of hospitals ($n=135$) reported having no junior doctors at all. Among hospitals with junior doctors, the distribution was: 21.6% ($n=54$) with 1-3 junior doctors, 6.8% ($n=17$) with 4-5, and 17.6% ($n=44$) with more than 5. The mean number of junior doctors was 7.8 ± 30.9 (median=0, IQR: 0-3), indicating a severely skewed distribution concentrating junior doctors in tertiary care institutions, while most hospitals had none.

The absence of junior doctors in the majority of hospitals creates multiple critical concerns. First, it severely limits institutional capacity for clinical service delivery and emergency response. Second, it eliminates opportunities for mentoring and training of future medical leaders, threatening long-term workforce sustainability as current consultants approach retirement. Third, it places excessive workload burden on available consultants, increasing burnout risk and potentially compromising care quality. Fourth, the absence of a junior-to-consultant ratio typical in sustainable healthcare organisations suggests that many current consultants may lack succession pathways and replacement candidates.

Unlike consultant distribution, junior doctor availability did not significantly differ between southern states (mean= 9.5 ± 36.4 ; median=0, IQR: 0-4) and other regions (mean= 4.7 ± 15.7 ; median=0, IQR: 0-2; $Z=1.06$, $p=0.290$). However, settlement type showed highly significant associations: urban and suburban hospitals had substantially more junior doctors (mean= 13.2 ± 40.0 ; median=2, IQR: 0-7) than rural hospitals (mean= 0.6 ± 1.4 ; median=0, IQR: 0-0; $Z=7.23$, $p<0.01$), indicating that even within the same region, rural hospitals are more likely to lack junior medical staff.

Nursing and Allied Health Workforce

Staff nurse availability showed relatively better distribution compared to the physician workforce: 35.6% of hospitals had 11–20 nurses, 27.2% had more than 40, and only 14.8% had 10 or fewer. However, urban and sub-urban hospitals reported significantly higher nursing staff (mean=110.6±245.0; median=27, IQR: 15-75) compared to rural facilities (mean=15.8±12.8; median=12, IQR: 8-19; $Z=7.39$, $p<0.01$), indicating substantial disparity even for nursing staff.

Allied medical staff were also unequally distributed: southern states showed higher availability (mean=46.2±148.4; median=9, IQR: 4-21) than other regions (mean=16.6±34.6; median=5, IQR: 2-15; $Z=2.88$, $p=0.004$). Urban and sub-urban hospitals had significantly more allied staff (mean=58.5±158.0; median=12, IQR: 6-31) than rural hospitals (mean=5.7±6.8; median=3, IQR: 2-7; $Z=7.88$, $p<0.01$).

Professional Development and Continuing Education

Training and continuing professional development were substantially limited across the CHAI network. Only 28.8% of hospitals ($n=72$) conducted training sessions for doctors, and 71.6% reported that physicians had not attended any training sessions during the preceding year. Among hospitals providing physician training, 18% reported conducting 1–5 sessions annually and only 10.4% more than five sessions annually. This indicates that continuing professional development is not systematically integrated into organisational operations in most institutions.

The absence of physician training reflects multiple challenges, including limited institutional resources for training budgets, difficulty accessing quality training programs in rural areas, competing time demands in resource-constrained facilities, and limited availability of training opportunities relevant to primary care contexts. The lack of professional development affects clinical currency, professional engagement, staff satisfaction, and organisational competitiveness for recruitment and retention.

Performance Appraisal Implementation

Performance appraisal implementation was similarly restricted across CHAI hospitals: only 16.4% ($n=41$) conducted annual performance appraisals for physicians, 34.8% ($n=87$) for nurses, 26.4% ($n=66$) for allied health staff, and 21.6% ($n=54$) for other personnel. These low implementation rates indicate that formal human resource management systems remain underdeveloped in most CHAI institutions. Performance appraisals are essential mechanisms for assessing performance, identifying training needs, documenting performance issues, and recognising excellence. The absence of these systems in most institutions suggests significant gaps in human resource management infrastructure necessary for organisational accountability and workforce development.

Perception of Staffing Adequacy

When asked to assess the adequacy of staffing for current service needs, only 28.8% of hospitals reported having adequate consultant strength, and merely 20.8% reported adequate junior doctor availability. In contrast, approximately 50% of hospitals reported adequate nursing and allied health staffing. The perception of inadequacy among a substantial majority of institutions regarding the physician workforce suggests significant workforce stress and raises concerns about long-term institutional sustainability and service quality.

DISCUSSION

Geographic and Institutional Inequities in Workforce Distribution

The findings reveal that CHAI-affiliated hospitals operate within a constrained human resource environment characterised by substantial geographic inequities, critical shortages in the physician workforce (particularly junior doctors), and minimal professional development infrastructure. The rural-urban disparity in specialist availability

reflects broader patterns documented globally, where healthcare workers concentrate in urban areas offering superior infrastructure, professional opportunities, and social amenities (Grobler et al., 2015; Malik et al., 2024). The median values (7 consultants in urban hospitals vs. 3 in rural hospitals) indicate that rural CHAI hospitals operate with less than half the specialist capacity of urban institutions, substantially limiting service capability and quality.

The significant association between consultant availability and geographic region (southern states vs. central/northern states) reflects historical patterns of healthcare infrastructure development in India. Southern states have longer histories of medical college establishment and healthcare system development, creating both greater specialist production and greater institutional capacity for specialist employment. This regional disparity has important implications for healthcare equity, as populations in central and northern states served by CHAI hospitals have substantially reduced access to specialist services compared to those in southern regions.

Critical Workforce Shortage and Sustainability Implications

The absence of junior doctors in 54% of hospitals represents an acute workforce crisis with implications for both immediate service delivery and long-term institutional sustainability. Junior doctors are essential for: (1) extending service capacity through additional clinical personnel; (2) training and mentoring by senior consultants, ensuring knowledge transfer; (3) creating career pathways attracting medical graduates to mission healthcare; and (4) building succession pipelines ensuring organisational continuity. The concentration of junior doctors in tertiary care institutions, while most primary care hospitals have none, represents a fundamental maldistribution mirroring but exceeding the maldistribution of consultants.

The workforce challenges identified in this study must be understood within broader organisational systems frameworks. As De Savigny and Adam (2009) note in their systems thinking approach to health systems strengthening, workforce distribution challenges cannot be addressed in isolation but must be understood as interconnected with organisational structures, management systems, and external environmental factors. The sustainability challenges facing faith-based healthcare institutions are particularly acute because these organisations must simultaneously address workforce constraints while maintaining mission-driven service to vulnerable populations (Thekkekkara, 2020). The workload implications of consultant-heavy staffing in many hospitals are concerning. When senior physicians must provide all clinical services without junior doctor support, they experience excessive workload, limited time for mentoring, and high burnout risk—factors that contribute to staff migration and organisational instability. Research demonstrates that healthcare workers experiencing inadequate staffing perceive higher workloads, work-life imbalance, and burnout risk, ultimately affecting retention and sustainability (Nair et al., 2022).

Professional Development and Organisational Learning

The remarkable absence of physician training (71.6% of hospitals reporting no training sessions) suggests that continuing professional development is not systematically integrated into organisational operations. This represents a significant challenge in an era of rapidly evolving healthcare practices, emerging technologies, and changing disease patterns. Healthcare professionals practising in rural and resource-limited settings face a particular need for ongoing education to maintain clinical currency and manage diverse health conditions. Limited training affects clinical competency, professional engagement, organisational competitiveness, and staff satisfaction (Forsetlund et al., 2009).

The low implementation of performance management systems (only 16.4% for physicians) indicates that many institutions lack formal mechanisms for assessing performance, identifying training needs, documenting performance issues, or recognising excellence. This represents a fundamental gap in human resource management infrastructure necessary for organisational accountability, quality improvement, and workforce development (O'Brien et al., 2009).

Implications for Healthcare Quality and Patient Safety

The perception of inadequate staffing among 71.2% of hospitals with respect to consultants and 79.2% regarding junior doctors indicates genuine workforce stress affecting daily operations. Healthcare workers in understaffed facilities experience higher workloads, reduced time for patient interaction, increased stress and burnout risk, and a greater likelihood of errors affecting patient safety. The combination of limited specialist availability and minimal training opportunities raises concerns about clinical quality and patient safety in many CHAI hospitals, particularly in rural settings with the fewest specialists and least professional development.

CONCLUSION

CHAI-affiliated hospitals face substantial human resource challenges characterised by geographic inequities in workforce distribution, critical shortages in the physician workforce (particularly junior doctors), limited professional development, and inadequate human resource management systems. These challenges threaten institutional sustainability and service delivery capacity, particularly in rural and remote regions. The findings demonstrate that addressing healthcare workforce challenges in faith-based institutions requires comprehensive, multi-level approaches including targeted recruitment and retention strategies, investment in continuing professional development, development of systematic human resource management systems, and policy support at government and sectoral levels.

The distinctive challenge facing faith-based healthcare institutions is that they simultaneously serve high-burden populations (vulnerable, poor, geographically isolated) with limited resources compared to corporate healthcare systems. Strengthening healthcare workforce in faith-based institutions is essential for sustaining equitable healthcare services in underserved regions and advancing universal health coverage goals. Without deliberate workforce strengthening efforts, these critical institutions may experience gradual decline in service capacity, quality, and sustainability, with serious implications for healthcare access and equity in India's underserved regions.

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