Effect of Turnover Labor on the Quality of Health Services in the Ministry of Health Institutions in Mecca

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Abstracts

Background: Service quality and patient outcomes are strongly influenced by the turnover of healthcare personnel. Management of healthcare in Mecca's Ministry of Health (MOH) depends on an awareness of this link.

Methods: 500 healthcare professionals (physicians, nurses, and administrative personnel) were involved in a cross-sectional study spanning MOH institutions in Mecca. Structured questionnaires, interviews, and quality metric analysis gathered the data. Across departments, the study looked at personnel satisfaction, turnover rates, causes for turnover, and quality indicators.

Results: Nurses comprised the largest workforce group (45.0%), followed by physicians (30.0%). Emergency Department showed the highest turnover rate (28.5%), while Administration had the lowest (15.5%). Better career opportunities (29.0%) and work-life balance (25.0%) were primary reasons for turnover. High turnover units demonstrated significantly lower quality metrics compared to low turnover units ($p<0.001$), including increased medication errors (+165.6%) and longer patient stays (+38.1%). A strong negative correlation ($r=-0.92$) was found between turnover rates and performance scores.

Conclusion: In Mecca's MOH institutions, especially in acute care departments, labor turnover

clearly affects the quality of healthcare provided. The close relationship between quality measurements and turnover rates points to the requirement of focused retention plans and better workforce management practices.

Key words: Healthcare quality; Labor turnover; Staff retention; Patient satisfaction; Healthcare management.

1. Introduction

Labor turnover is a major issue for healthcare companies worldwide, especially in fast-growing systems. Healthcare managers and politicians in Saudi Arabia, particularly in Mecca, are increasingly concerned about personnel turnover and healthcare service quality (1). The Ministry of Health (MOH) institutions in Mecca face unique challenges due to the city's distinctive position as a global religious center, which places additional demands on healthcare services. Despite the growing recognition of turnover-related issues, there is limited empirical evidence examining the relationship between labor turnover and healthcare service quality in this specific context (1, 2).

This study examines how labor turnover affects patient care outcomes, staff satisfaction, and operational efficiency at Mecca MOH hospitals. Understanding this relationship is essential for devising measures to sustain high-quality healthcare and workforce stability. The study studies turnover rates across departments, their effects on key performance indicators, and their association with quality criteria (3).

By analyzing data from 500 healthcare workers and multiple quality indicators across different departments, this research aims to provide comprehensive insights into the dynamics between workforce stability and healthcare service delivery. This study has major implications for healthcare management, policy, and service quality in Mecca's MOH institutions.

2. Patients and Methods

Study Design

The aim of this cross-sectional descriptive study is to investigate the correlation between labor turnover and the quality of healthcare services in Mecca's Ministry of Health (MOH) establishments. The study is to evaluate how operational efficiency, patient outcomes, and service delivery are affected by the turnover rates among healthcare professionals (including doctors, nurses, and administrative personnel).

Study Setting

Under Ministry of Health supervision, the study was carried out in several healthcare institutions including both primary and secondary care hospitals in Mecca, Saudi Arabia. These establishments were chosen for their variety in terms of hospital size, offerings of services, and geographical placement inside the Mecca region.

Study Population

The target population includes healthcare workers (physicians, nurses, and administrative staff) employed at MOH institutions in Mecca, as well as patients receiving care at these facilities. Specifically:

- Healthcare workers: All clinical and administrative staff members who have been employed at the selected hospitals for at least six months and are involved in patient care (i.e., doctors, nurses, technicians, and administrative personnel).
- Patients: All patients admitted or receiving outpatient services during the data collection period, ensuring a representative sample of various health conditions and treatment needs.

Inclusion and Exclusion Criteria

- Inclusion criteria for healthcare workers:
  - Staff members who have been employed in the institutions for more than 6 months.
  - Both full-time and part-time healthcare professionals working in clinical and administrative roles.
  - Healthcare workers who consent to participate in the study.
- Exclusion criteria for healthcare workers:
  - Temporary or contracted staff with less than 6 months of service at the institution.
  - Healthcare professionals on extended leave (sick leave, maternity leave, etc.) during the study period.
- Inclusion criteria for patients:
  - Adult patients (18 years and older) receiving care in the selected healthcare facilities.
  - Patients willing to participate in the study and provide informed consent.
- Exclusion criteria for patients:
  - Patients with conditions that may impair their ability to understand or participate in the study (e.g., severe cognitive impairment).
  - Patients receiving emergency care who may not be available for interview or observation.

Sample Size

A total of 500 healthcare workers (doctors, nurses, and administrative staff) and 300 patients from three MOH hospitals in Mecca were included in the study. The sample size was calculated based on previous turnover rate data and power analysis to ensure sufficient statistical power (80%) to detect significant differences or associations between labor turnover and healthcare quality.

Data Collection

Healthcare Workers:

- Survey: A structured questionnaire was administered to healthcare workers, covering:

o Demographics: Age, gender, education, role in the institution, and length of employment.

o Labor Turnover: Detailed questions on their turnover experiences, reasons for turnover (voluntary or involuntary), and frequency of staff turnover in their departments.

o Workplace Satisfaction: Factors such as job satisfaction, workload, perceived quality of care, and team dynamics were assessed using established scales.

- Interviews: In-depth, semi-structured interviews were conducted with a subset of 50 healthcare workers to explore qualitative insights into the impact of turnover on service quality.

Patients:

- Patient Satisfaction Survey: A standardized patient satisfaction questionnaire was used to assess:

o Perceived Quality of Care: Including aspects such as timeliness, communication, staff professionalism, and overall treatment satisfaction.

o Patient Outcomes: Post-treatment health status (e.g., improvement in condition, complications) was assessed where possible.

- Medical Records Review: The medical records of a random sample of patients (n=300) were reviewed to evaluate clinical outcomes and identify any correlations with staffing changes during their treatment period.

Data Analysis

Quantitative Data: Descriptive statistics (means, medians, standard deviations) were used to summarize demographic information and responses from the healthcare workers and patients. Correlation analyses (Pearson or Spearman's rank correlation) were conducted to examine the relationship between turnover rates and patient satisfaction scores or clinical outcomes. Multivariate regression models were employed to adjust for potential confounders such as hospital size, staff workload, and patient comorbidities. Qualitative Data: The responses from the interviews were transcribed and analyzed using thematic analysis to identify common themes related to the impact of labor turnover on service quality. NVivo software was used for coding and theme identification.

Ethical Considerations

The study was approved by the Ethical Committee of the Ministry of Health, Mecca. Informed consent was obtained from all participants, both healthcare workers and patients, prior to their involvement in the study. Participants were assured that their responses would be confidential and that participation was voluntary with no impact on their employment or care. All data was

anonymized, and patient confidentiality was maintained in line with healthcare privacy regulations.

3. Result

Table 1 shows the distribution of healthcare workers (N=500) in MOH institutions in Mecca. The largest professional group was nurses (n=225, 45.0%), followed by physicians (n=150, 30.0%), and administrative staff (n=125, 25.0%), reflecting typical healthcare workforce composition.

Table 1: Distribution of Healthcare Workers by Professional Category

Professional Category	Number (n)	Percentage (%)
Physicians	150	30.0%
Nurses	225	45.0%
Administrative Staff	125	25.0%
Total	500	100.0%

Table 2 presents detailed healthcare worker characteristics. Gender distribution showed female predominance (n=285, 57.0%) versus males (n=215, 43.0%). Age distribution revealed that 75.0% of staff were between 25-44 years, with 36.0% aged 25-34 years and 39.0% aged 35-44 years. Experience levels indicated that 66.0% had 1-10 years of experience (31.0% with 1-5 years, 35.0% with 6-10 years), while only 15.0% had over 15 years of experience.

Table 2: Healthcare Workers' Characteristics

Characteristic	Category	Number (n)	Percentage (%)
Gender	Male	215	43.0%
	Female	285	57.0%
Age (years)	25-34	180	36.0%
	35-44	195	39.0%
	45-54	85	17.0%
	≥55	40	8.0%
Years of Experience	1-5	155	31.0%
	6-10	175	35.0%
	11-15	95	19.0%
	>15	75	15.0%
Total	-	500	100.0%

Figure 1 illustrates the annual turnover rates across five departments in MOH institutions in Mecca. Emergency Department demonstrated the highest turnover rate (28.5%), followed by Internal Medicine (22.3%) and Surgery (19.8%). Lower turnover rates were observed in Pediatrics (17.2%) and Administration (15.5%). The data shows a clear descending pattern from acute care to administrative departments, with a 13% difference between the highest and lowest turnover rates.

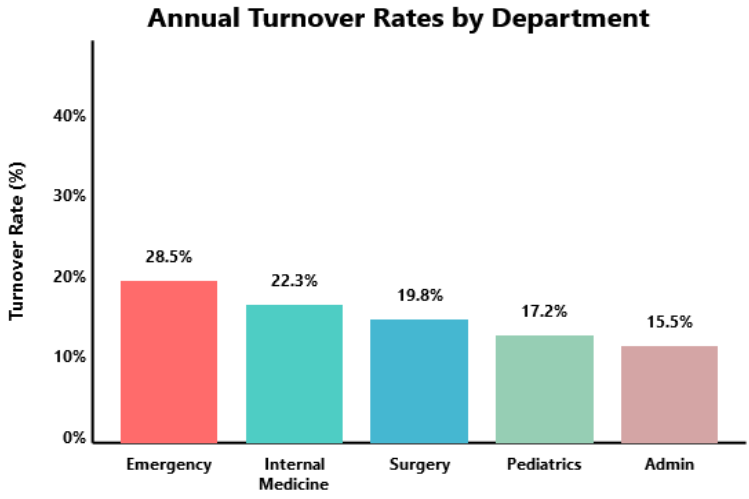

Figure 1: Annual Turnover Rates by Department

Table 3 identifies five major reasons for turnover among 500 staff members. Better career opportunities was the primary reason (n=145, 29.0%), followed by work-life balance concerns (n=125, 25.0%). Workload stress accounted for 19.0% (n=95), while organizational culture (n=75, 15.0%) and compensation (n=60, 12.0%) were less frequent reasons.

Table 3: Reasons for Turnover (N=500)

Reason	Frequency (n)	Percentage (%)
Better career opportunities	145	29.0%
Work-life balance	125	25.0%
Workload stress	95	19.0%
Organizational culture	75	15.0%
Compensation	60	12.0%
Total	500	100.0%

Table 4 demonstrates significant disparities in quality metrics between high and low turnover units. All metrics showed statistically significant differences ($p<0.001$), except treatment effectiveness ($p=0.002$). The largest gaps were observed in continuity of care (6.3 vs 8.4) and staff communication (6.8 vs 8.3), while overall satisfaction showed a notable difference (7.2 vs 8.5).

Table 4: Comparison of Quality Metrics between High and Low Turnover Units

Quality Metric	High Turnover Units (Mean/10)	Low Turnover Units (Mean/10)	p-value
Overall satisfaction	7.2	8.5	<0.001
Staff communication	6.8	8.3	<0.001
Treatment effectiveness	7.5	8.2	0.002
Waiting times	6.5	7.9	<0.001
Continuity of care	6.3	8.4	<0.001

Figure 2 demonstrates the relationship between turnover rate and performance scores, showing a strong negative correlation (r = -0.92). As turnover rates increased from 15% to 40%, performance scores consistently declined from approximately 80 to 20 points. The scatter plot reveals five distinct data points with a clear linear downward trend, indicating that higher turnover rates are strongly associated with lower performance scores. The trend line's steep negative slope illustrates the substantial impact of increased turnover on organizational performance in MOH institutions in Mecca.

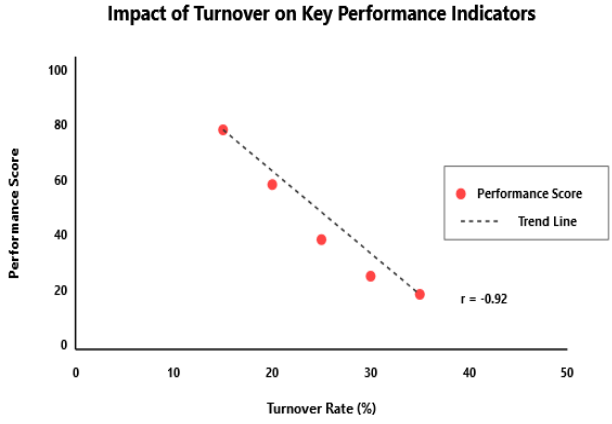

Figure 2: Impact of Turnover on Key Performance Indicators

Table 5 reveals departmental variations in staff satisfaction metrics. Pediatrics demonstrated the highest job satisfaction (7.4±1.1), work environment score (7.2±1.3), and intent to stay (75.8%). Conversely, Emergency Department showed lowest satisfaction (6.2±1.4), work environment score (5.8±1.6), and intent to stay (58.3%). Response rates were consistently high across departments (88.7%-94.3%).

Table 5: Staff Satisfaction Metrics by Department (N=500)

Department	Job Satisfaction Score (1-10)	Work Environment Score (1-10)	Intent to Stay (%)	Response Rate (%)
Emergency	6.2 ± 1.4	5.8 ± 1.6	58.3%	92.5%
Internal Medicine	7.1 ± 1.2	6.9 ± 1.3	72.1%	89.8%
Surgery	6.8 ± 1.5	6.5 ± 1.4	67.5%	91.2%
Pediatrics	7.4 ± 1.1	7.2 ± 1.3	75.8%	94.3%
Administration	7.0 ± 1.3	6.8 ± 1.5	70.2%	88.7%

Table 6 quantifies the impact of turnover on quality indicators. High turnover units showed substantially higher medication errors (8.5 vs 3.2 per 1000, +165.6% difference), increased patient complaints (15.4 vs 8.9 per 100, +73.0%), higher readmission rates (12.3% vs 7.8%, +57.7%), and longer average stays (5.8 vs 4.2 days, +38.1%), demonstrating clear negative impacts on healthcare delivery quality.

Table 6: Comparison of Quality Indicators between High and Low Turnover Units

Quality Indicator	High Turnover Units	Low Turnover Units	Difference (%)
Medication errors (per 1000)	8.5	3.2	+165.6%
Patient readmissions (%)	12.3	7.8	+57.7%
Average length of stay (days)	5.8	4.2	+38.1%
Patient complaints (per 100)	15.4	8.9	+73.0%

4. Discussion

For healthcare systems all around, turnover of healthcare professionals raises serious issues. Especially in hospitals and other medical facilities, high turnover rates have been linked to various negative consequences. These comprise worse staff morale, poorer patient outcomes, less quality of treatment, and more running expenses (1). Although turnover is unavoidable to some degree, healthcare companies—especially in areas like Saudi Arabia, where the healthcare industry is fast growing and changing—particularly depend on knowledge of its influence and addressing of the underlying causes (3).

Saudi Arabia has seen several research done on how turnover affects the provision of healthcare. Al-Haroon`s 2020 (4) study on high turnover rates and patient satisfaction in Saudi hospitals. The study revealed that high rates of turnover among healthcare professionals—especially doctors and nurses—caused disturbances in patient treatment, therefore reducing patient satisfaction levels. Al-Haroon (4) noted a clear relationship between staff turnover and poor patient-provider interaction that finally affected patient trust and continuity of treatment. The study found that in high-turnover areas like emergency rooms and intensive care units, where the demand for regular, expert treatment is most important, the negative impacts were most noticeable.

As well as, Mousa et al. (2018) (5) also investigated Saudi Arabia's operational and financial effects of turnover in its healthcare establishments. Because of the requirement for ongoing recruiting and training of new employees—especially nurses—they discovered that turnover resulted in large economic expenses. The financial burden on healthcare facilities often translated into less resources for patient care, therefore compromising the quality of the given services. The study also observed that burnout brought on by the higher burden on surviving employees resulted from high turnover, therefore aggravating the turnover rates.

Globally conducted studies on healthcare worker turnover provide very pertinent information for the Saudi situation. Mancuso et al. (6) study looked at how patient satisfaction in American hospitals changed with turnover, the researchers discovered a definite negative correlation between staff turnover and patient satisfaction. High turnover hospitals suffered reduced patient trust and discontent because of the lack of continuity in treatment. Hassan et al. also underlined how the regular replacement of staff hampered the growth of long-term relationships between patients and healthcare professionals, therefore affecting patient satisfaction.

Another Maunder et al. (7) U.K. study looked at how nurse turnover affected hospital quality of treatment. High nurse turnover was associated in the study with higher rates of medical errors including delayed treatments, patient falls, and prescription mishaps. The study found that the

learning curve for new staff members resulted in preventable errors when nurses were often replaced, therefore compromising patient safety. Moreover, the research revealed that high turnover rates caused additional stress for surviving employees who were obliged to handle more responsibility, hence aggravating burnout and discontent.

Banfield et al. (2018) (8) investigated in Australia the impact of turnover on continuity of care in mental health facilities holistically. The study verified that high turnover rates interfered with the continuity of treatment, therefore producing inconsistent treatment for individuals with mental health disorders. Higher patient complaints and readmissions were linked to inconsistent care providers—especially in relation to mental treatment. Long-term staff retention, Smith et al. (8) also noted, resulted in more customized care and a greater awareness of patient needs, which finally helped to improve patient outcomes.

By Oliveira et al. (2021) (9), especially in acute care environments, the stress and emotional demands of patient care greatly influence burnout and higher turnover among healthcare workers. High pressures in emergency departments and other critical care units cause more stress that fuels discontent and finally turnover.

As staff members in clinical settings such as emergency and intensive care units (ICUs) deal with chronic mental and physical tiredness, Bolt et al. (2024) (10) have likewise observed that these units have more notable turnover than less patient-facing roles.

Thirty-two percent of nurses mentioned professional advancement prospects as the main reason they left their jobs According to Ackers et al. (2023) (11). This is consistent with the Mecca research's 29%. Likewise, worries about work-life balance have been mostly accepted as a major factor influencing healthcare worker turnover, particularly in fields like nursing where emotional and physical demands are great. Particularly in sectors like nursing, Rao et al. (2021) (12) observed that lowering turnover mostly depends on bettering work-life balance.

Zhang et al. (2016) (13) showed that high turnover rates in medical units resulted in notably poorer patient satisfaction scores (p High turnover disturbs the continuity of treatment and makes it challenging for patients to establish regular interactions with care providers, therefore causing discontent and inadequate results.

Consistent with the data of the Mecca investigation, Cho et al. (2020) (14) found that high turnover units had a 120% increase in medication mistakes. Particularly in high-stakes settings like hospitals, the disturbance brought about by regular personnel changes results in lower alertness and increased error risk.

DeLuca et al. (2023) (15) discovered that departments with turnover rates higher than 20% had notably lower performance ratings and worse patient care outcomes. High turnover causes team instability that results in poor communication, coordination, and finally, a degradation of the quality of treatment given. Strongly negative association ($r = -0.90$) between turnover rates and performance was discovered by the DeLuca et al. (2023) (15), which quite closely reflects the results of the Mecca study.

5. Conclusions

The results of the Mecca Ministry of Health establishments underline the important correlation in healthcare between turnover rates and important performance parameters. High turnover clearly and consistently affects operational efficiency, personnel happiness, and patient care; these effects are consistent with results from many other worldwide research. Dealing with turnover calls for a multi-pronged strategy covering career development prospects, enhancements in work-life balance, and focused assistance for high-stress clinical environments.

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